STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
29 November 1982

COMMISSION HEARING

IN THE MATTER OF:

Application of C & K Petroleum, Inc. for compulsory pooling, Lea County, New Mexico. CASE 7730

BEFORE: COMMISSIONER RAMEY
COMMISSIONER KELLEY

TRANSCRIPT OF HEARING

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MR. RAMEY: The hearing will come to order. We'll call next Case 7730.

MR. PEARCE: That is on the application of C & K Petroleum, Incorporated, for compulsory pooling , Lea County, New Mexico.

MR. RAMEY: Ask for appearances, please.

MR. KELLAHIN: Mr. Chairman, I'm Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of the applicant, and I have four witnesses to be sworn.

MR. LOPEZ: Mr. Chairman, my name is Owen Lopez with the Hinkle Law Firm, Santa Fe, New Mexico, appearing on behalf of Texaco, and sitting with me at counsel table is chief counsel for Texaco from Midland, Mr. Bruce Pope, and I've brought an associate, Tim Bruce, who's going to sit with me, too, and we have three witnesses to be sworn.

MR. RAMEY: Ask that all witnesses stand at this time.

(Witnesses sworn.)

MR. RAMEY: You may proceed, Mr. Kellahin.

MR. LOPEZ: Mr. Chairman, perhaps as a preliminary matter we ought to sort of at least clarify for my sake some of the rules of the game.

As I think the Commission knows, we've filed Case Number 7762, which is a compulsory pooling case which

affects the south half of the quarter section involved herein, the southwest quarter of Section 27, but we've filed a compulsory pooling case for a stand-up proration unit comprising the east half.

Much of the evidence that will be put on here today will be applicable to that case, and as I understand it, that case is being advertised and is about to be (inaudible) at this time. So I would, first of all, like to amend our application in that case to include all formations through the Pennsylvanian. I think the application itself reads only the Pennsylvanian.

Secondly, it's my understanding that that case will be heard before the Commission on December 16th, depending on the outcome of the hearing today, so in that regard to facilitate what might take place on the 16th of December, I don't know whether this can be accommodated by the Commission or not, but Mr. Kellahin and I agreed that we will be willing to stipulate with respect to our respective clients that a 200 percent risk factor, whoever is the winner in the outcome of the case, would be applicable as far as we're concerned, and therefor, that might dispense with having to put on any evidence with respect to -- whether or not that's required by the Commission so requiring it, if that's the case, I imagine Mr. Kellahin is prepared to go forward today and

we will be on the 16th.

The other aspect of the case we're not prepared to put on today is bona fide efforts to get other working interest owners to join in our proration unit, which we'll have to put on at that time at the December 16th hearing.

Finally, and I think the evidence will bear it out today, but I would perhaps request at this time that the Commission take administrative notice of the fact that Yates Petroleum is joining our side in this dispute and a letter is in the mail, or somewhere in the file, supporting our position in requesting a stand-up unit and agreeing to join with us in a well to be drilled at an orthodox location with respect to the stand-up proration unit, and also opposing the application of C & K today.

Therefor, I would request that the record be kept open until the Commission sees that letter.

We have nothing further and we're ready to go.

MR. RAMEY: Thank you, Mr. Lopez.

MR. KELLAHIN: Mr. Chairman, the case as outlined by Mr. Lopez is a dispute over how to orient a proration unit in the Casey-Strawn Pool.

The Casey-Strawn Pool is spaced on 80-acre spacing. It's an oil pool and there have been a number of

wells drilled in the immediate area.

The area in question is the southwest quarter of Section 27, and we'll have some maps to show you the relative position of the different wells. What we propose to accomplish by this application is the formation of an 80-acre proration unit that would consist of the south half of the southwest quarter of 27. The application of C & K is opposed by Texaco and Yates. They believe that the proration unit ought to be the east half of the southwest quarter. Therein lies the dispute.

Depending on the outcome of the Commission if you agree with us that the south half is the more appropriate proration unit, we would like to proceed with the compulsory pooling of those interests that will not join us.

Conversely, if your decision is that the east half of the southwest quarter is the proration unit to be formed, then we have to go to the question of who is the operator for that proration unit and right now the only pending application is what Texaco has filed for that position.

We have stipulated with Mr. Lopez that in either event there is no objection if the compulsory pooling order bears the 200 percent penalty.

Having said that, I'd like to call my first witness.

MR. LOPEZ: Mr. Chairman, while the witness is taking the stand, just for my clarification, is the Commission willing to go ahead with the 200 percent penalty without evidence or just recommend its own?

MR. PEARCE: Let me ask both counsel one question. Do we have the stipulation of all interest owners in the well that the 200 percent is adequate? Are there interest holders who have not spoken to that?

MR. KELLAHIN: There will be interest owners not represented here that --

MR. PEARCE: Then we need some evidence in our record in support of the penalty.

MS. LEBOW: Tom, all of these interests owners except Texaco and Yates are contractually committed to C & K.

MR. KELLAHIN: Why don't you let me ask you some questions, Danie, before you start testifying.

MS. LEBOW: No, I mean could you speak to what he just said in --

MR. KELLAHIN: Nope, that comes under --

MS. LEBOW: Thank you.

DANIE LEBOW

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Ms. Lebow, would you please state your name and occupation?

A. My name is Danie Lebow. I work for C & K Petroleum. I am a certified professional landman.

Q. Ms. Lebow, have you previously testified as a landman before the Oil Conservation Division?

A. Yes, I have.

Q. All right, and pursuant to your employment by C & K Petroleum have you done certain land searches, acquisitions of title opinions, and circulation of title documents with regards to formation of a spacing and proration unit for the subject well?

A. Yes, sir.

MR. KELLAHIN: If the Examiner please, we tender Ms. Lebow as an expert petroleum landman.

MR. RAMEY: She is so qualified, Mr. Kellahin.

Q. Ms. Lebow, I have placed before you a tabulation of exhibits that we have marked as C & K Petroleum Ex-

hibits One through Nine.

Let me direct your attention, first of all, Ms. Lebow, to the index of exhibits and ask you to turn first of all to Exhibit Number One, which is the exhibit appearing after the yellow tabbed index and it is identified as a schedule of ownership of the southwest quarter of Section 27.

Is this a document that you prepared?

A. I did.

Q. Are you generally familiar with the land ownership with regards to minerals and leaseholds for the southwest quarter of Section 27?

A. Yes.

Q. What is C & K Petroleum attempting to accomplish by the application before the Commission here today, Ms. Lebow?

A. We are attempting to give every owner in the southwest quarter a right to participate in drilling, as to their royalty, leasehold, whatever interest.

Q. What is the orientation of the proration unit that you propose to dedicate to this well?

A. The south half southwest quarter.

Q. Now, would you describe generally when you first commenced working on the project for the drilling of this particular well?

A. Oh, early '82.

Q. And in doing that work, what did you first do, Ms. Lebow?

A. We first were able to secure an interest for C & K Petroleum that would merit drilling a well.

Q. As of this time can you tell us generally what percentage of the proration formed by the south half of the southwest quarter of the section would be controlled by C & K Petroleum, Inc.?

A. In all of the southwest quarter, regardless of the way the unit lays, C & K owns 51.06771 percent.

Q. With regards to individuals other than C & K Petroleum, what interest as of this time have not agreed to participate with C & K in the formation of a south half southwest quarter proration unit?

A. There are five persons who are unknown to us; been unknown to us since '74, which constitute 1.48 percent of the unit.

Q. Those individuals are later identified --

A. Yes.

Q. -- in your exhibits?

A. The other two interests, those owned by Yates and Texaco.

Q. All right, let's turn then to your Exhibit

Number One and would you describe for us what happens to the percentage interest if the proration unit is formed where we have stand-up units, in other words consisting of the east half of the southwest quarter and the west half, as opposed to orienting the proration unit so it is a south half southwest quarter proration unit.

A. In the west half southwest quarter Texaco owns 17+ percent. The Latham and Barton interest own 25+ percent. Yates owns zero.

Under the east half southwest, which is the proposal by Texaco today, Texaco has 28+ percent. The Barton and Latham interests have .26. Yates has 13-1/3.

To combine these interests so that all owners in the southwest quarter would participate in this well, Texaco has 22+ percent. Latham-Barton interests have 12+, and Yates has 6-2/3rds percent.

Q. Has C & K any time prior to filing this application proposed to form a proration unit of acreage other than as requested now?

A. We did.

Q. Describe what occurred for us.

A. After we had made our deals with Sun and Enserch to give us the position to have enough interest to drill the well, then it was time for me to send out the first

proposal for the drilling of the well. The first proposal that we send out never ends up being that way by the way we come to the Commission, because of the diverse ownership.

Q. What was the first proposal sent?

A. My first proposal was the east half.

Q. That position that Texaco is now asserting?

A. That's correct.

Q. All right, what, if any, response did you get with regards to the possibility of forming a proration unit consisting of the east half for this well?

A. My letter went to every owner of record September the 10th. The next day Mr. E. L. Latham called me and told me that he could not agree to this proposal.

Q. All right, in response to receiving Mr. Latham's objection to this, what, if anything, did you do?

A. We had a meeting and because, number one, we agreed with Latham, because we felt he was right. We would, by standing up the unit, preclude his participation for his major mineral interest, which he has owned since before the field was established.

Furthermore, we, C & K, had drilled a dry hole in the north 80 of the east half, and we drilled that dry hole in 1975.

It might be of interest to the Commission

that Texaco, we had pooled the north half of that well. Texaco joined in that -- the drilling of that dry hole and their interest was this 22 percent that we now propose in the south half.

Q. Subsequent to C & K's agreement then with Mr. Latham with regards to the objection, what then did you do next, Ms. Lebow?

A. We sent out another letter. Number one, we instructed you to add Texaco's name to the nonconsenting parties. Now then, a few days after that a young man with Yates, whose name is Bullock,called me, and he said that Texaco had been calling them and they had -- Yates had decided that they would join with Texaco.

Then we asked you to add their names to the nonconsent application.

Q. With regards to the formation, then, of a proration unit consisting of the south half of the quarter section, what, if any, action did you take with regards to soliciting the cooperation and consent of all other working interest owners?

A. Well, the people that we were in conversation with on various matters, and including Texaco, we advised them verbally. Then -- and Yates, and I don't recall if I discussed that with any of the Cone heirs or not, I had

some discussions with them. It didn't make any difference to them, their interest is the same.

But on October the 22nd I sent out a copy of application to pool, the AFE, the operating agreement, the title opinion, everything to set us up to drill the well because we had every intention of drilling it and completing this well this year.

Q. All right, let's go through some more of your exhibits, some of which we've touched on, and have you identify them for us.

If you'll turn, then, to Exhibit Number Two and identify this letter.

A. Exhibit Two is my latter dated September the 10th making the first proposal to everybody who owned in the record in an attempt to get their comments on what they thought about it.

Q. This is going to the east half?

A. I beg your pardon?

Q. This is the letter for the east half of the southwest quarter.

A. Yes.

Q. All right, let's then go to Exhibit Number Four and have you identify that one for us.

A. Exhibit Four is a copy of your letter to

me giving me the dismissal, the formal dismissal by the Commission after we had withdrawn that application for pooling that we sent.

Q. Well, I think you're ahead of yourself. Exhibit Number Three is the application for the east half, is it not?

A. Oh, excuse me, I was looking at Four, I'm sorry.

Q. All right, and then Exhibit Number Four is the dismissal of the first pooling.

A. Yes.

Q. All right, let's go on then to Exhibit Number Five.

A. Exhibit Number Five is C & K's final proposal for the drilling of the well under the terms as agreed upon between ourselves and the people to the best of our knowledge at that time.

Q. All right, this is the one then for the south half?

A. Right.

Q. All right, let's turn then and look at Exhibit A attached to the letter, which shows the various interests. The first party indicated in the tabulation is Texaco.

A. Correct.

Q. You testified that they have advised you that they do not want to participate in an orientation of this proration unit as you have proposed.

A. When this letter was mailed I felt, I had nothing in writing but had conversation with Texaco, we had two wells going at once and in all this conversation it was my understanding that they intended to participate. They did not put it in writing and I now know that -- that they don't intend to participate.

Q. The third name on the tabulation is Yates Petroleum Corporation. Am I correct in understanding that they have also advised you that they won't participate as you propose?

A. They have.

Q. With those two exceptions, and with some unknown working interest owners, which we'll identify, with those three general exceptions, then, everyone else has executed an AFE and an operating agreement?

A. We have in our hand the AFE and/or operating agreement from everyone except Mrs. Morris. Mrs. Morris called me last Friday and said she is sending her executed AFE and operating agreement to us.

Q. If you'll turn to the same set of documents

that appears under the tab Exhibit Five, until you get to a copy of C & K's application for the south half of the southwest quarter, directing your attention to what has been identified in paragraph four as schedule of unleased interests, are you with me?

A. Yes.

Q. All right, the first name is Kenneth Cone?

A. Kenneth Cone, after we filed this application, spoke to me on the phone. He executed an AFE and an operating agreement. He is joining us.

Q. All right, Mr. Ringold, then.

A. Mr. Ringold's address has been unknown to me since 1974.

Q. Mr. Ringold will be one of the individuals you'll seek a pooling order against.

A. Yes, sir.

Q. All right, and then the next page we have three different Parks. I assume all those people you have not been able to find.

A. The three Parks, Ruth Armstrong, Luther Emery, and then Lenore Parks, all of these people we have been unable to find and have made diligent efforts to do so.

Q. Now are these interest owners under the Parks interest that they have in other wells drilled in this

field?

A. Yes.

Q. Have they been the subject of compulsory pooling orders in the past?

A. They have.

Q. And what efforts, generally summarizing, have you made in an attempt to locate the Parks interest?

A. I have employed Mr. E. B. Hoyt, Junior, who reputation is known to the Commissioner, first before we drilled the first well in this field. He made an extensive effort to locate these people.

I know of my own knowledge that Bass and Yates have made an attempt to find these people.

Q. To the best of your knowledge, neither C & K nor any other operator in the field has been able to locate the Parks?

A. No.

Q. All right, if you'll turn, then, down to the same exhibit till you get to the model form operating agreement, is this the operating agreement that you have circulated amongst the working interest owners?

A. It is.

Q. And this is the one that's been executed by everyone except the unknown interest owners and Texaco and

Yates.

A. And I do not have Mrs. Morris yet but it is coming, she told me it was.

Q. Let's turn then to Exhibit Number Seven, Ms. Lebow, which I believe is a copy of the AFE for the proposed well. Is that not what this is?

A. That is true. These are the copies of execution by various parties.

Q. Do you know of your own knowledge, Ms. Lebow, how the proposed AFE compares with the actual costs of other wells drilled in this field?

A. To some extent, yes. I'm not an expert any more of costs, though. This AFE was prepared by our operations manager. We firmly intend to come in under these costs for the pure and simple reason that at the time it was prepared, that costs had gone down somewhat.

Q. But this is the Authority for Expenditure that you circulated among all the working interests?

A. Which has been signed by the joining parties.

Q. All right. Let's go, then, to Exhibit Number Eight and have you identify that exhibit for me.

A. This exhibit addresses itself to COPAS accounting agreement attached to the operating agreement; has reference to the administrative overhead rate. It indicates

that the Commission has recently approved these rates; for drilling, $4,180 per month; for producing, $423 per month.

Q. There's a reference here to a Division Order R-7094. It makes reference to a compulsory pooling order, C & K obtained in October --

A. It does.

Q. -- for a proration unit in the section immediately to the east of Section --

A. It's the same section. It's --

Q. --27?

A. It's the same section, the southeast quarter.

Q. The southeast quarter of the same section, all right.

A. Correct.

Q. We're now in the west --

A. Yes.

Q. -- of the southwest quarter, all right.

A. Yes.

Q. And these were the same figures adopted at that point.

A. Yes.

Q. Are these the figures that were included in the operating agreement circulated to the working interest owners?

A. On the 27 No. 2 Well, yes.

Q. And those are the numbers you would request be incorporated in the current pooling order?

A. Yes.

Q. Have you had any conversations with the Texaco personnel with regards to their participation in the unit as you propose?

A. Yes, and other people who work for C & K have. At some point in time, I'm unable to tell you exactly the date, Tom Bryla with Texaco called me about the AFE on the B location. This was the first one that I sent out, and I told him at that time that C & K would have to -- we proposed to re-orient the proration unit, and further, would he give his attention to the No. 2 Well, because it would in fact spud first the way things had evolved.

Q. That's the one in the southeast quarter.

A. Correct. We had, you know, thought for some months that the "B" Well, the southwest would be the first well to spud. As it worked out, the other one was first, and now that was my personal conversation with Tom Bryla, that I just asked him -- I told him we would have to redefine this and send out -- I said, I've got to send you a bunch more papers and information, but give your attention to the other well; it's the one that's going to go first.

Q. What, if any, communications did you receive from Texaco personnel with regards to their consent or objection to the south half proration unit?

A. After Mr. Bryla advised me on the telephone that, you know, they would oppose us, then he wrote us a letter which was dated November the 4th, stating in writing, but prior to receipt of his letter, and he was kind enough to deliver it to us, but our Mr. John Moffitt had written a letter to Texaco and to Yates begging a meeting to resolve these problems before the fact.

Mr. Moffitt the next day, which as I recall was on a Friday, went to see Yates Petroleum in Artesia.

Q. Let me ask you, Ms. Lebow, things that you know of your own knowledge and not what Mr. Moffitt may have learned.

A. No, but I know that he went to see them to attempt to mediate the problem.

Q. Don't tell me about it.

A. Okay.

Q. What, to your knowledge, were the objections raised to the proration unit by Texaco? Do they ever communicate these objections to you?

A. I'd really -- I couldn't say, Tom.

Q. All right. Now, with regards to Yates, what,

if any, communication have you had from Yates with regards to their position?

A. Only the verbal.

Q. That they would not join?

A. They just said they would join with Texaco in opposing us. They didn't say they wouldn't join.

Q. All right.

Were Exhibits One through Nine compiled under your direction and supervision?

A. Yes, sir.

MR. KELLAHIN: That concludes my examination of Ms. Lebow, Mr. Chairman.

MR. RAMEY: Any questions of Ms. Lebow?

MR. LOPEZ: Yes, Mr. Chairman.

MR. RAMEY: Mr. Lopez.

CROSS EXAMINATION

BY MR. LOPEZ:

Q. Ms. Lebow, I believe you stated in your testimony that, as the world would have it, initial proposals are always changed. What was the basis of C & K proposing the east half proration unit to begin with?

A. In any of our deals we must at some point make a firm proposal to the owners in order to come up with

whatever we intend to do, and we attempt to hear everybody else and be fair to everybody, you know.

I myself, and I freely admit this, the reason I set it on the east half, the title is different on the west half. I was in a hurry, we were really in a push to get this done. It was easier for me just to list the owners under the east half, and then we could get the comments from everybody on that basis.

Q. Is this standard operating procedure as far as you're concerned?

A. Well, more or less, yes, because you have to -- we have to at some point in time firmly make a proposal. Then we begin our negotiations with people who differ with us, yes.

Q. Then if I understand your testimony correctly, you're telling me that the basis for selecting a proration unit has nother to do with geological or reservoir engineering reasons but has to do with facility of the landman in identifying the --

A. Well, no, now in some cases, in this particular case it made no difference to our scientists because C & K's interest is the same regardless. It made no difference.

Where it is a matter of -- and at any rate,

the well location which the scientists select would not change regardless, and there on that, in this particular unit it made them no difference which way I stood it.

Q. I believe you also stated that when you heard the next day after you sent your September 10th letter from Mr. Latham, that C & K changed their position and agreed that a laydown unit in the south half of the southwest quarter would be a preferable proration unit. Would you give me the reasons that Mr. Latham expressed to you or the reasons C & K decided that a laydown unit was the preferable approach?

A. If we stand the unit up certain mineral owners on the west side would be deprived of a position in this well.

Beyond that, there is a dry hole in the north 40 acres of the east half.

We felt that it would not be a defensible position because of the dry hole and because of depriving these mineral owners of their rightful participation.

Q. These mineral owners in the east half of the southwest quarter would always have the opportunity to drill an offset well on the west half of that quarter section, would they not?

A. What -- I beg your pardon now?

Q. Assuming we have a stand-up unit, the owners

in the west half of the southwest quarter would always have the opportunity to drill an offset well to protect their acreage, would they not?

A. They could. It would seem rather foolish to me to have two wells when one well would serve the purpose.

Q. I suppose that --

A. That's my opinion and I am not an expert on what you're talking about.

Q. I believe that's the issue before the Commission today, so I guess we'll get on with it.

A. Other people can address that far better than me.

Q. I believe you also stated that it was C & K's intention to drill and complete the well this year; however, I note in reviewing the AFE attached to your Exhibit Five, that the estimated spud date is indicated as 12-1-82. The total depth date is 1-10-83, and the estimated completion date is 2-10-83. This doesn't correspond to your testimony. Which is correct, the AFE or your testimony?

A. The operations manager set up those dates for the commencement of the well to tie in with his schedule of drilling rigs. We could have, we still intend to, spend this money for these investors, and for these joined people, somehow this year. The tax people will determine how we go

about that. We are, in fact, able to spud the well.

Q. Then am I to understand from your testimony that the purpose for drilling the well or commencing the drilling of the well this year is for tax purposes of the investors in the well and no other reason?

A. Mr. Lopez, the reason that people spend money on drilling is primarily because of their tax situation, it has been my experience.

These individuals who own under this, Mrs. Moore, and the Cone heirs, Petroleum Corporation of Texas, Heritage of Tulsa, they might even wish we'd wait awhile if we don't go ahead and do it by the end of the year.

We would just be at pains to restructure the whole deal if we do not carry forward on this.

Q. Ms. Lebow, I believe you also testified that the various interest owners that you've indicated on your exhibit, except for Texaco and Yates, have agreed to join in the drilling of a well for which the south half of the quarter section is dedicated as the proration unit.

Do you have any reason to believe that the same interest owners would be unwilling to join in a proration unit that was comprised of the east half of that same quarter section but for the Latham, the Parks?

A. I don't know, I don't.

MR. LOPEZ: No further questions, Mr. Chairman.

MR. RAMEY: Any other questions of Ms. Lebow? She may be excused.

MICHAEL MOSLEY

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Mosley, would you please state your name and occupation?

A. My name is Michael Mosley. I'm employed by C & K in Midland, Texas, as a geologist.

Q. Mr. Mosley, have you previously testified before the Division as a petroleum geologist?

A. Yes, sir, I have.

Q. Pursuant to your employment by C & K as a geologist, have you done certain geological work with regards to drilling prospects in the Casey-Strawn Pool that's the subject of this application?

A. Yes, sir.

MR. KELLAHIN: Mr. Chairman, we tender Mr.

Mosley as an expert petroleum geologist.

MR. RAMEY: So qualified, Mr. Kellahin.

Q. Mr. Mosley, I hope I've numbered your exhibits the same way you have. Let's check the first one and see how close I got.

I'm up to Number Ten and I've labeled that your structure map on top of the Lower Strawn lime.

A. Yes, sir.

Q. So far, so good.

First of all, Mr. Mosley, let's have you tell us just a little bit about what you've attempted to depict on this structure map.

A. Yes, sir, this is a structure map contoured on top of the Lower Strawn lime, which --

Q. You'll have to speak up for me. I can't hear you.

A. Right. This is a structure map contoured on top of the Lower Strawn lime, which is the pay zone in both the Casey-Strawn and the East Lovington Field to the northwest. This is included in these exhibits to show the more or less regional setting of the Casey-Strawn. You'll see that the Casey-Strawn producing wells are sitting on top of a more or less north/northeast -- or east/northeast trending structural nose on the Lower Strawn lime.

The color code included, wells colored blue are produced from the Lower Strawn interval. The wells, other wells circled either penetrated or tested the Strawn, with Yeso production shaded in orange, and Abo production shaded in yellow, and San Andres production shaded in green, with the dry holes merely circled with the dry hole symbol.

Q. The C & K application requests a compulsory pooling of the south half southwest quarter of 27 for all the Pennsylvanian formations. I assume the Casey-Strawn is one of the Pennsylvanian formations.

A. Yes, sir.

Q. Are there any other of the Pennsylvanian formations that produce in the immediate area?

A. There have been shows but there is no significant production in the immediate area from any other Pennsylvanian formation.

Q. So the principal objective then is in fact the Casey-Strawn Pool.

A. Yes, sir.

Q. You've identified the proposed location by the double red circles?

A. Double red circles with the orange arrow pointing to it.

Q. All right, sir, what is this field off here

to the north and to the west, what's that?

A. That is the East Lovington Penn Field, which also produces from the Lower Strawn lime interval.

Q. Directing your attention back to the Casey-Strawn Field, Mr. Mosley, what is the spacing in that field?

A. These wells are drilled on 80-acre spaces.

Q. And they produce oil, do they not?

A. Yes, sir, and a significant amount of gas in most cases.

Q. All right. Could you give us a little of the background about the field, Mr. Mosley, by commencing, I guess, with an identification of the discovery well?

A. Yes, sir. The discovery well was drilled in the southeast quarter of Section 27. It is labeled 1 on that -- or No. 3, excuse me, on your structure map.

Q. It's the well in the southwest of the southeast of 27?

A. Right, it's 660 from the south and 1980 from the east of 27.

Q. All right, sir, what was the original proration unit assigned to that well, do you remember?

A. Let's see, originally it was, I believe, an east/west -- excuse me, let me get the --

Q. You don't remember?

A. I don't remember, no, sir.

Q. All right, sir, I'll ask you what, after the discovery well -- when was the discovery well drilled?

A. I believe in 1974, or early '75.

Q. All right.

A. I'd have to check.

Q. After the discovery well, what is the next well?

A. I believe it was the Mesa Knowles No. 4 Well. Correct me if I'm wrong there. Which was the immediate south offset in Section 34 to the discovery well.

Q. All right, the well in the northwest quarter of the northeast quarter?

A. Right.

Q. I see a 4 but I don't know which of those two wells is --

A. Okay, the Knowles, Mesa Knowles No. 4 Well is 660 from the north and 1980 from the east of Section 34.

Q. All right, so although the No. 4 is closer to the well in the northeast of the northeast, it identifies the well to the west.

A. That's right, would you repeat that one more time, please?

Q. The No. 4 identifies the immediate south

offset to the discovery well.

A. No, sir, No. 4 is the -- you see the orange lines connecting those wells? That is reference to cross sections later.

The No. 4 well is the well in 660 and 660 from the north and the east of Section 34.

Q. When did Mesa drill that No. 4 Well, do you remember?

A. I believe it was in early 1975.

Q. Do you recall when Mesa drilled the other well in the north half of northeast quarter of 34?

A. Yes, sir, the well 660/660 north and east of 34 is the Mesa Knowles No. 8, which was completed on 9-16-81.

Q. All right, the closest one to the northeast section line of 34 is the Mesa well drilled in '81.

A. Yes, sir.

Q. All right.

Is that the last producing well to be drilled in the field? From the Casey-Strawn?

A. From the Casey-Strawn, yes, sir, that was the most recent producing well.

Q. All right, tell us about this well symbol that's in the southwest of the southwest of Section 26.

A. Okay. That is a well which was just plugged about a week ago by H. L. Brown. That was the Wright Trust No. 1, I believe.

Q. Why was that plugged, do you know?

A. It came up about 130 foot low to the Knowles 8 Well. It had porosity present but it was low enough to the point they felt it was water bearing and Brown plugged it outright.

Q. Let me direct your attention then to the well in Section 27 just north of the proposed location and it has the dry hole symbol around it, what's that well?

A. Yes, sir, that is the C & K Petroleum Shipp 27-A No. 1 Well, which was drilled in '75 -- just a second.

Q. If the proration unit to be assigned to the well is oriented so it's an east half of the southwest quarter, will that dry hole be contained within that proration unit?

A. Yes, sir, it will.

Q. Let me direct your attention now to west of your proposed location, Section 28, where you have a yellow symbol. Tell me about that well.

A. That was the -- is the C & K Petroleum Shipp 28 No. 1, which was drilled in the spring of '82. It was -- encountered porosity in the Lower Strawn but it turned

out to be water bearing on test and we completed up-hole in the Abo formation.

Q. All right, sir, let's go on then to your Exhibit Number -- I'm sorry, it would be 11 for purposes of the hearing. I think it's your second exhibit in your packet. And I show it to be an Isopach of the proposed porosity in the Lower Strawn lime, is that the right one?

A. Yes, sir, it is.

Q. All right, that's Exhibit Eleven, then.

Again you have the same double circle for the proposed location in 27?

A. Yes, sir, the well symbols are identical in all these exhibits.

Q. Tell me about this exhibit, what does it show?

A. What we've done here is count up everything all the porosity in the Lower Strawn lime. There is some question as there's problems in the Casey-Strawn as to what is porosity and what isn't, but my interpretation here is everything I consider porosity in total porosity feet.

Q. Let's make sure I understand. This is a map of the total porosity?

A. Yes, sir, it's an Isopach.

Q. And you've looked at all the Casey-Strawn logs --

A. Yes, sir.

Q. -- and where there's a log indication of porosity you have taken the total interval and then mapped it on this?

A. Yes, sir, this is a total porosity Isopach of the Lower Strawn lime.

Q. Does the total porosity have any correlation to the productivity of the wells?

A. No, sir, it does not.

Q. What, if anything, is helpful about the exhibit, Mr. Mosley, to determine whether or not the proration unit ought to be oriented to the south half or to the east half?

A. This map gives me and my management an idea of where the thicks are. We get a feel of the trend. It's always nice to be able to drill on a porosity thick and with this map we have, in our opinion, narrowed down the trend of this thick.

It showed our proposed location to be in one of these thicker parts of the Casey-Strawn Field as far as total porosity. This exhibit shows that the south half of that southwest quarter is the thicker part of the field.

Q. Would you propose to locate the well in the north 40 acres of an east half southwest quarter proration

unit?

A. No, sir, I would not.

Q. You've indicated on here a green line that -- and a blue line that run parallel to each other, and it shows the symbol of O/W. What is that?

A. This is an oil/water contact that we have deduced for the field up here. This line was taken off the following exhibit and superimposed on this map. This intends to show where we think the productive part of the porosity and the non-productive part will be. Everything the blue -- you see they are dashed blue and gree, blue indicating water, green indicating oil. We feel that everything to the north and to the east of that dotted line is going to be water bearing; everything to the south and to the west is a chance of being -- producing hydrocarbons.

Q. Identify for us the wells on the exhibit that you found indications of an oil/water contact on. In other words, what are your control wells for the oil/water contact?

A. The main well which we've got this -- or deducted this from, water contact from, is the Shipp 34-A No. 1 Well, which is labeled "2" on this in Section 34.

Q. That's the immediate offset to -- south offset of the location.

A. The offset to the proposed location 660 from the north, 1980 from the west.

Q. Who operates that well?

A. C & K Petroleum.

Q. All right, who operates Well No. 3 to the south of that location?

A. C & K Petroleum.

Q. All right. And the only other operator in the immediate area is Mesa, and they have the other two wells in the north of the northeast of 34.

A. Yes, sir.

Q. All right. You used the No. 2 Well as a control, are there any other wells for control on the oil/water contact?

A. There's other wells that back it up but there is no other well that has given us the same information as the 34-A No. 1 has. That is the key well for this water contact at a datum of -7620.

Q. All right, sir, let's go, then, to Exhibit Number Twelve, which I show to be a structure of the Lower Strawn-- well, how is that one labeled, Mr. Mosley, to make sure I have it right?

A. Okay, this is a structure map on top of the first porosity encountered in the Lower Strawn lime. The

same --

Q. Just a minute, now, how is this different from the other exhibits that we've talked about?

A. Yes, sir. The first structure map was merely a structure map on top of the Lower Strawn lime. The second map was an Isopach of total porosity within this Lower Strawn lime. This map is a -- the datum we used, it was the first porosity encountered as you go down into the Lower Strawn lime. We took that as a datum, assigned it a subsea number, and used it as a mapping point for a structure map.

You'll see the same blue/green dotted line as on the Isopach. This is the map from which we took that line.

Q. What's the purpose of this map, Mr. Mosley?

A. This map was prepared to try to indicate the productive limits of porosity. We have porosity encountered in dry holes, as you can see, on this well, but this was used to try to narrow down and determine our sweet spots, or where we feel fairly reasonable of encountering hydrocarbons, as opposed to encountering water.

Q. We're obviously here today to help decide what the orientation is for the proration unit, Mr. Mosley. What, if any, assistance is this map in telling you as a geologist how you would propose to orient a proration unit

in the southwest quarter of this section?

A. By preparing this map, in my opinion, we have condemned the entire north 80 of the southwest quarter as being water bearing. I would have no interest or not recommend any activity in the north half of this quarter section.

Q. Let me ask you this with regards to nonconsenting working interest owners that does not elect to participate in the well. As you know, the Commission is entitled under the statute to grant a maximum penalty factor of 200 percent, or something less, or nothing at all.

In your opinion as a geologist, do you have a recommendation to the Examiner with regards to a penalty factor to be assessed against nonconsenting working interest owners?

A. Yes, sir, I would recommend a maximum risk factor on this well of the 200 percent, given that we have a dry hole to the immediate north, a dry hole in the Strawn to the -- to the west in Section 28. I consider this location to have a very good amount of risk to it.

Q. All right, sir, let's go to the cross sections, Mr. Mosley. The first one I show as Exhibit Number Thirteen is an A-A' cross section, running generally west to east. Is that what you have?

A. Yes, sir.

Q. All right, sir, why don't you tell us about this exhibit and what opinions and conclusions you can draw from it?

A. Yes, sir, this is a structural cross section which was hung on a subsea datum of -7400. It shows the relationship between the porosity for the Lower Strawn.

Q. Excuse me, you've got to speak up.

A. Okay. This is a structural cross section hung on a datum of -7400 subsea to show the relationship between the various wells on the section in the Lower Strawn.

You can see we have picked three tops on these wells, the top of the Lower Strawn lime, which is the pay in the Casey-Strawn and the East Lovington; the local marker, which we call the top of the Lower Strawn sand; and the top of the Atoka shale.

We have made some interpretations on this cross section by connecting up porosities. For my own purposes I've broken this up into three units, which are called upper, middle, and lower porosity, which are labeled and shaded here.

The oil/water contact of -7620 is drawn on this cross section. Everything you see shaded in green is what we are anticipating as oil column. Everything you see shaded in blue indicates we're in the vicinity of water.

Q. I'm curious in the Shipp 28 No. 1 Well. It's

the second well from the left on the cross section, identified by the number two. It's the well to the west. Can you explain to us why while this well appears to have reasonable structural position, that it was unable to produce at that location?

A. You'll see that we have extended the lower porosity and the middle porosity over through the Shipp 28 well to indicate that the porosity was present. When drilling this well we encountered a good drilling break and a slight hydrocarbon show in this lower porosity. We attempted to DST this. We set a packer, which immediately failed, and upon running logs we saw that we had a washout and some indication of porosity in this middle porosity zone.

We saw -- I saw nothing of it going as we drilled through it, no hydrocarbon shows, no drill breaks. We ran casing on this well and perforated the middle porosity first. It did not indicate at first that it was porosity. We treated it, it finally broke in -- broke down and took a treatment and made water with no show. We then squeezed that off. We went down to our lower porosity. All of our calculations and maps showed that we had some porosity in that oil column, but you can see that -- tell from the logs that strangely right at the oil/water contact everything above the oil/water contact tightened up on us after about 4 percent

porosity.

Once we got down in what we believe was a water column, we got reasonable porosity down there. We attempted, we perforated this, this very upper interval, which was the tight part, treated it, and we swabbed back nothing but water; no show.

We then abandoned the lower Strawn and went up and made a small oil well in the Abo.

Q. Is there anything you learned by the drilling of the Shipp 28 No. 1 Well that would cause you to change the way you have depicted the oil/water contact on your Exhibit Number Twelve?

A. No, sir, there's not. You can see that the middle porosity in the Shipp 28 was washed out on the caliper. This is a very common occurrence about the Casey-Strawn Field. The reason we have given that some of this porosity tends to wash out is what I'll refer to as a rock problem. The accepted answer -- the theory of why it does this is because porosity is present but is very poor permeability. A theory, when you drill through a zone like this, once you run a bit through it, that the pressures cannot equalize within the pores and it more or less explodes into the hole, bore hole, before getting a washout. This has been tested in another well, the Mesa Knowles No. 7, which is a dry hole in Section 34. It

tested tight on DST and they abandoned the well.

Q. All right, let's take a look at your north/south cross section, which is Exhibit Number Fourteen. Show us what happens when you cut through the field running from north to south. What do you find?

A. We find on these three wells, north/south, I do not see anything which I would call the upper porosity in the wells depicted on this cross section. We see the lower and middle porosity present in the Shipp 34-A No. 1 Well, which is where we originally deduced our oil/water contact. We feel that this proposed location will have all three porosity units present on it. We see that the dry hole in 27, the Shipp 27 No. 1-A, had lower porosity present, which was tested wet on a DST, and was subsequently abandoned.

You can see that both porosities are present in the Shipp 34-A No. 1 Well. The lower porosity was perforated, tested water, it was squeezed off, and then the very upper portion of the middle porosity was perforated and we made a very good oil well out of it.

Q. In your opinion, Mr. Mosley, why was the Shipp 21 1-A Well a dry hole?

A. 27 1-A?

Q. I'm sorry, that first well on the B cross section?

A. We had lower porosity. It occurred at the very base of the section, and was so far below the oil/water contact that it was totally water bearing, as indicated on our DST results, and then abandoned the well.

Q. In your opinion, Mr. Mosley, what orientation of an 80-acre spacing and proration unit would, in your opinion more closely overlie potential production in the Casey-Strawn Field?

A. That would be the east/west orientation, or the south half.

Q. Upon what do you reach that opinion that the south half orientation would be the orientation to more closely overlie potential production?

A. By combining our Isopach map of the porosity we see that the south half is roughly overlying what I believe to be the thick in the Lower Strawn porosity. The south half is, in my mind, the only oil productive part. I think everything in the north half of the southwest quarter is going to be water bearing from the information I have now.

Q. In your opinion what would happen if the Commission should approve an orientation where we would have an east half of the southwest quarter proration unit?

A. I'd have to bring -- we feel that one well in the Casey-Strawn adequately drains at least an 80-acre,

probably more than 80-acre. We feel that one well drilled at the proposed location with an east/west orientation would sufficiently drain the entire south half of the southwest quarter. If a well was stood up, we would -- could then be forced to drill two wells that would obtain us a net of the same reserves as the one well. I see no reserves in -- of oil or gas being contributed by the north half of the southwest quarter.

Also, we are currently drilling a well over in the southeast quarter. You can see the circle there, 660/660 south and east. That's the Shipp 27 No. 2 Well. That was drilled as a -- to protect our acreage from drainage because back in, I believe, the early part of 1981, Mesa went in, their Knowles 4 Well had originally been on an east/west proration, they filed and had that 80 acres made into a north/south, and then drilled the West Knowles No. 8 Well, which was completed in September of last year. It was a very strong well. It potentialed for 859 barrels of oil a day flowing.

So we were forced to come in and essentially drill a 40-acre spacing because of that Knowles 8 Well, to protect our acreage and our -- all of our investors and partners from drainage.

If another well was drilled in the 660/660 or thereabouts of the south and west of 27, we would have the

same problem with our acreage in the northwest quarter of Section 34, and since the north half of Section 34 is essentially drilled up, there is nothing in there to protect any of that from drainage now. We have the Shipp 34-A No. 1 and 2 present in the east half of the northwest quarter and if another well were drilled 660/660 south and west of 27, we feel that -- that it would adversely affect our production and reserves down in 34.

Q. Mr. Mosley, let me direct your attention to Exhibit Number Fifteen, which is a tabulation of production, and have you simply identify that for me.

A. Yes, sir. This is a production map of all the producing Strawn wells in the Casey-Strawn. Listed on here is production for the last month which our records carried, 9-'82, and a cumulative as of 9-'82, that is total production in oil and gas.

You see our Shipp 27 No. 1 Well in Section 27 has accumulated 366,584 barrels of oil and roughly a quarter of a -- 250-million Mcf of gas.

In roughly one year the Knowles No. 8 Well, which is the most northeasterly well in Section 34, has accumulated 166,325 barrels of oil and 140-million Mcf.

The production, well, this production for the Mesa Knowles No. 4 Well, which is the next well to the

west, has accumulated 556,969 barrels of oil.

Our records pool the Shipp 34-A No. 1 and 2 together. Together these wells have made 463,255 barrels of oil and 380+ Mcf gas -- 380-million Mcf gas.

Q. Mr. Mosley, were Exhibits Ten through Fifteen prepared by you or compiled under your direction and supervision?

A. Yes, sir.

Q. In your opinion, Mr. Mosley, will approval of C & K's application, including the provision for a south half southwest quarter spacing and proration unit be in the best interest of conservation, prevention of waste, and the protection of correlative rights?

A. In my opinion, yes, sir.

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

MR. RAMEY: Any questions of Mr. Mosley?

MR. LOPEZ: Yes, Mr. Chairman, I think we have two or three questions.

CROSS EXAMINATION

BY MR. LOPEZ:

Q. Mr. Mosley, I direct your attention to your Exhibit Number Eleven.

MR. LOPEZ: Did you introduce them, Tom? I have no objection to their introduction.

MR. KELLAHIN: I haven't moved for admission of them, Owen.

We would at this time move the admission of Exhibits Ten through Fifteen.

MR. LOPEZ: No objection.

MR. RAMEY: They will be admitted. Did you introduce your exhibits One through Nine?

MR. KELLAHIN: No, sir, I might as well do that now, too.

MR. RAMEY: They will be admitted, also.

Q. As I believe I understood your testimony, the basis for your oil/water contact line was dependent on the well that is 660/1980 from the west in Section 34, or what has been marked the number two well on the exhibit.

A. Yes, sir.

Q. I think this well has been identified as Shipp 34 --

A. A No. 1.

Q. -- A No. 1. Don't you think, or would you not agree with me that using only this well as a contact point, that you condemned a certain amount of acreage in the north half of Section 27 just based on the information ob-

tained from this well?

A. I feel very comfortable. Of course, all oil/water contacts are subject to fudging, either up or down or both ways, but I feel -- feel very comfortable with this point as an oil/water contact, and whatever acreage is condemned by this is in my mind validated by dry holes and/or production or structural position.

Q. I'd now ask you to turn to what you -- your Exhibit Thirteen, I believe.

A. Would you read them out, I don't have a number as such.

Q. It's the structural cross section A-A'.

A. Okay.

Q. I'd ask you to turn your attention to the number two well on that cross section, or the Shipp 28 No. 1.

A. Yes, sir.

Q. I'd like to -- to just see if you would agree with me that another explanation that might be valid with respect to what you've marked a possible permeability barrier, with respect to the middle porosity zone, is the fact that that zone could be in communication with the lower porosity zone, or the water bearing zone.

Could that not also be an explanation as to why there was an oil/water contact point?

A. Of course, anything is possible up here, but on testing these we did run tracer surveys in both perforations and to our management and our field personnel, people who I have the utmost respect in, they said they indicated no channeling either direction, or any significant direction from the perforations.

So I'm at ease with the fact we do not have any channeling or communication going on in these wells.

Q. So then what is your basis for the permeability barrier?

A. Mainly there is the explanation I feel most comfortable with. I know it is -- permeability barrier can be a catchall term in geology produced by anything going on, but we have documented the same thing in several wells around the field, which have the same -- exhibit the same characteristics. My colleagues, other geologists that are at C & K, have also over their years, which is 20 or 30 in most cases more than I have, saying that when you have an impermeable formation it tends to -- which I refer to as a rock problem -- that it does tend to washout,this characteristic you see here. So that somewhere between these two wells in this cross section, Shipp 27-1 and the Shipp 28 No. 1, something happens to the porosity, which I cannot really explain but I'm referring to as a possible permeability barrier.

Q. Okay, I think I just have one further question, and it applies to all your exhibits and the proposal of a laydown south half proration unit in Section 27, the southwest quarter.

I believe that you've indicated from your exhibits that structure moves down dip from west to east.

A. Yes, sir.

Q. If that's the case, then would not a well in the west half of that proration unit not only more adequately drain the south half if such were the proration unit designation, but also would be less likely to affect adversely the offset wells to the south in Section 34?

A. Which structure are you referring to? Are you referring to the structure of the --

Q. To the Strawn.

A. -- Strawn lime structure? The Strawn lime is a structure map on top of the lime. The porosity, as you can see by the cross sections, does not occur at a uniform depth into the Strawn lime. The porosity moves around very dramatically in most cases throughout the section. So actually, the Strawn -- the structure on top of the Strawn lime does not -- does not in my mind affect the porosity to any great degree as far as having any -- being high on the structure of the Strawn lime or low to the structure in the Strawn

lime. The position or datum at which the porosity occurs is the driving factor on this.

Q. And not the oil/water contact?

A. The oil/water contact, I'm assuming, is a uniform depth. We know in nature that does not always occur. Since we have no data to back that up, I am assuming that it is a, more or less, a uniform subsea depth.

Q. In other words, if we follow your testimony, how would you -- how would your well at the proposed location recover reserves up dip to the west in a south half proration unit?

A. You're referring to which map?

Q. Well, again, any of your exhibits, Ten, Eleven, Twelve, my question is how would a well at the location that's proposed by C & K efficiently drain reserves which you have testified lie up dip to the west in that same proration unit?

A. In my opinion somewhere between our proposed location here, circled in red on the maps, and the Shipp 28 No. 1 Well, which is colored in yellow, there is an imaginary line you're going to cross, which everything to the west is going to be nonproductive. In my mind I have that, well, somewhere up just about halfway between the two wells. As I stated before, I am not -- I would not anticipate the north half of this southwest quarter contributing any reserves,

hydrocarbon reserves, to the -- to the proration unit, or even any of the wells there, and I'm saying that one well drilled at our proposed location should adequately produce that south half of the southwest quarter. We are committing maybe -- we are drilling these on eighties. You want to drill these on forties, we'd be committing maybe 20 acres. In my mind I have about the very southwest quarter 40 acre section, maybe 20 acres of that as a general reference being nonproductive.

Q. Then if I understand your testimony, it's your opinion that in this southwest quarter only 60 acres are productive of hydrocarbons.

A. I can't say. I can't say what's going to produce and what's not going to produce. Somewhere between the Shipp 28 No. 1 and our proposed location is going to be a cutoff where it is not going to produce. It may be running right through our proposed location for all I know, but I'm assuming that that is going to be a commercial location where that is spotted.

Q. I assumed as much. As you testified and has been brought out in previous testimony, there's been a lot of readjusting going on around here and as we look at Exhibits Eleven and Twelve, although the Casey-Strawn Field is prorated on an 80-acre unit basis, it seems that we have a lot of 40-

acre offsets. As I understand earlier testimony, initially the southeast quarter was a laydown proration unit and that was changed at C & K's request to two stand-up units, and you are now drilling a well in the southeast of the southeast in 27.

A. Yes, sir.

Q. And as I recall the testimony in that earlier application to change the proration unit designation on the basis that it was facilitated was because it was common mineral ownership, and as I understand your testimony, if we are committed to a south half, or a laydown unit in the southwest quarter, that would fairly much preclude, if there were production, productive acreage to the north, of anyone ever draining that with an offset well to the north. Is that true?

A. Yes, sir.

Q. So might it not be more prudent to at least for the time being adhere to a stand-up unit and see what develops so that that would not preclude drilling an offset to the west?

A. Like we stated before, Mesa initiated the change in the proration units when they drilled the Knowles 8. They took an east/west proration unit in the Knowles 4 Well; made a north/south of it, and then drilled the Knowles

8 Well, which was a -- it was and still is an excellent producer.

This essentially forced our hand to drill a north offset to that to protect our acreage from drainage. We have one well there, the 27-1, which is now competing with two wells of Mesa's, the Knowles 4 and the Knowles No. 8.

Over in our proposed location for the B-1, we have one well competing with one well to the south.

If we were to go in and drill another well 660/660 south and west of 27, we would be draining, well, essentially draining unprotected -- we'd have unprotected drainage with that. There's no -- the north half of 34 is drilled up on proration spacing. There is nothing we could do to protect the other owners down in 34 from being drained.

We have gone as far as we can go in Section 34.

Q. Well, the proposed well, which is a direct offset to the 660/1980 from the west of Section 34 --

A. Right.

Q. -- and so I assume that would drain a direct offset to the west of that, if we had two stand-up units would also protect against drainage, would it not, if we had two wells? Wouldn't two wells be better than one?

A. They would be draining the people in 34, which is not, as far as I know, is nowhere near the same

ownership in 27 and 34 by any means.

Q. Well, you know, it's an interesting business, this. It seems to me Mesa started playing the game in the northwest quarter of 34 and C & K followed suit -- I mean the northeast quarter of 34, and then C & K followed suit in the southeast quarter of 27 by changing the proration unit designations from laydown to stand-ups. I assume, I'm not sure what the situation was with respect to Mesa, but if there's common mineral ownership, that game can easily be played, but as we've indicated in previous testimony with C & K, we do not have common mineral ownership in the southwest quarter. so once we're committed, we don't have a chance to replay the game, don't you agree?

A. Well, I wouldn't say there's no chance of it; any deal can be struck on about anything, but that is an assumption.

Q. You heard Ms. Lebow's testimony that it makes no difference to geologists and engineers how the proration units are designated so long as a deal can be struck. Do you agree with her statement?

A. True, imaginary lines have very little affect on geology, so it does not change geology any.

MR. LOPEZ: I don't believe I have any further questions.

MR. RAMEY: Any further questions of this witness? He may be excused.

MR. KELLAHIN: Mr. Jack Rose.

JACK ROSE

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Please state your name and occupation?

A. My name is Jack Rose. I work for -- I'm a petroleum engineer for C & K Petroleum.

Q. Mr. Rose, have you previously testified before the Oil Conservation Division as a petroleum engineer?

A. Yes, sir, I have.

Q. And have you made an engineering study of the Casey-Strawn Field with regards to the establishment of a proration and spacing unit for the well that's the subject matter of this application?

A. Yes, I have.

MR. KELLAHIN: Mr. Chairman, we tender Mr. Rose as an expert petroleum engineer.

MR. RAMEY: He's so qualified, Mr. Kellahin.

Q. Mr. Rose, let me direct your attention to one of Mr. Mosley's exhibits. For convenience, I think we'll just pick Exhibit Number Twelve, which is the structure on the total Lower Strawn porosity. Do you have that exhibit?

A. Do you mean the top of the first porosity?

Q. Yes, I'm sorry.

A. Okay, yes.

Q. Based upon your studies and familiarity with the Casey-Strawn Field, Mr. Rose, do you have an opinion as to how you would recommend the 80-acre proration unit be oriented in the southwest quarter of Section 27?

A. Yes. I feel like it should be laid down in an east/west direction, the south half.

Q. What are the reasons for that opinion, Mr. Rose?

A. Previous testimony, our belief that, due to Mr. Mosley's testimony that the north of the southwest quarter is unproductive. He did testify somewhat to the drainage. I have done drainage calculations and I feel like one well in the south -- south half of the southwest quarter will drain 80 acres sufficiently, at least, if not more.

We feel like the orientation of these proration units got out of hand in the northeast quarter of Section 34 and the southeast quarter of Section 27. We did

not wish everything was laydown when everything was started out there. Everything was progressing on laydown. The West Knowles No. 4 was stood up, changed from a laydown to a stand up in order to drill the West Knowles No. 8. Our reaction to that well was to stand up our proration unit in the -- on the Shipp 27 No. 1. That was required in order to drill a well to protect drainage from the West Knowles 8.

Q. Do you see any reason to continue that practice with regards to the west half of the two sections?

A. No, I do not. I feel like it was an unfortunate situation at the time.

Q. Let me direct your attention to your statement that you have done some drainage calculations and have you identify for us what is marked as C & K Exhibit Number Sixteen, Mr. Rose. Is that a document or exhibit that you prepared?

A. Yes, it is.

Q. Would you go through that document and describe for us what you did and what conclusions you draw after making the calculations?

A. What I was trying to do with this exhibit is trying to determine in my own mind what the drainage in the Casey-Strawn area might be. We primarily do this on a volu-

metric procedure. The equation that I've presented up there is well known in literature and I've solved that equation for the drainage acreage, and one of my problems in trying to determine something that would be defendable, since log calculations are a primary source of net feet of pay, a lot of the parameters to go into this equation, I felt like logs are very interpretive by their nature, several people can look at the same log and come out with something different.

So in order to eliminate interpretation, what I did was I went through the logs and assigned maximum and minimum values to all these parameters.

If you'll notice there, I did not include the Shipp, or the West Knowles No. 8. The primary reason for not including the West Knowles No. 8 was due to its early-- it's only an infant in its producing life so far, and the projection of ultimate reserves is going to be much more questionable in that case and would affect the drainage calculations to a greater extent. So I left out the West Knowles No. 8, not for any subversive reason or anything.

The -- what I've done here is I've put the range of my parameters that I've gotten from either logs or literature or our fluid properties for each of the wells that we have recovered sufficient reserves to make a reasonable estimate of the ultimate recovery, and what I did after

that is not -- what I've done is I've substituted mathematically into this equation the minimum numbers in the numerator and the maximum numbers in the denominator, irregardless of the relationship of that minimum number to the maximum number; for example, on the West Knowles 4 we have a minimum porosity of 6 percent and we have a minimum porosity of 12 percent. I'm not necessarily saying by putting the minimum numbers in the numerators of these equations and the maximum numbers in the denominators that that 6 percent corresponds to the 12 percent water saturation. I'm just trying to come out to an absolute minimum that you could get from the log calculations that we could come up with, or the log interpretations that were available to us.

And the results of those four equations, or those four wells are depicted on this exhibit and you can see they range from 70 acres up to 86 acres, and again, I want to emphasize that I do not feel like this is the minimum drainage or the drainage -- I'm not representing this as the drainage. I feel like it is the absolute minimum it could be, and I feel that it's probably greater than this figures significantly.

Q. If I understand what you're saying, Mr. Rose, dispite what's happened in the east half of the two sections, there is no need as a practical matter to try to

develop this pool on 40-acre spacing.

A. That's correct.

Q. And your opinion that using very conservative numbers are a conservative way to make the calculations and at the very least the wells that you've tabulated in the drainage calculation are going to drain in excess of 70 acres and probably as a practical matter are going to drain much more than that.

A. Correct.

Q. In your opinion as a petroleum engineer, Mr. Rose, would you recommend to the Commission that a proration be oriented where it was stood up in the east half of the southwest quarter for this well?

A. I do not feel like it should be stood up, primarily on, again, our previous testimony. I feel like the north half is nonproductive. Again I realize that is interpretation.

The problem I see with standing the proration unit up in the southwest quarter of Section 27 is again it relieves a possibility to drill a well, or almost requires the drilling of a well in the southwest of the southwest quarter, which again, as we've stated earlier, would require us to come in in the northwest of the northwest of 34 to protect our investors and different interest owners within

that area.

I feel like Texaco has said, or stated in their cross examination, or led us to believe, if we stand up we are precluding the drilling of a well if they claim that there is productive acreage in the north half. They say that by laying us down we are precluding the drilling of a well to drain that north half. I do not feel like that is the case. We ourselves would not drill that well because of our interpretation.

Texaco, if they feel like they -- that productive in the north half of the southwest of 27 is productive, then they can lay down a proration unit at that time and drill a well on the north half of the southwest quarter, and it would not bother the northwest quarter of Section 34.

Q. Was Exhibit Sixteen prepared by you, Mr. Rose?

A. Yes, it was.

MR. KELLAHIN: We move the introduction of Applicant's Exhibit Sixteen.

MR. RAMEY: Exhibit Sixteen will be admitted.

CROSS EXAMINATION

BY MR. RAMEY:

Q. Mr. Rose, will you please tell me where these

wells are located? I'm having a lot of trouble following you if I don't know where any of the wells are.

A. Okay, you're referring to my exhibit on the drainage calculations?

Q. Yes. Yes, the four wells.

A. Okay, if you start in Section 34, the most northeasterly well, which is labeled as number four, is the West Knowles No. 8, and is not included in these calculations.

The Shipp -- the only producing well in Section 27 is the Shipp 27 No. 1; the direct offset to that well direct south offset to that well is the West Knowles No. 4. The direct west offset to the West Knowles No. 4 is the Shipp 34-A No. 1. And the direct south offset to the Shipp 34-A No. 1 is the Shipp 34-A No. 2.

Q. In one of Mr. Mosley's exhibits, I think it's Number Twelve, there was a well in the southeast of the northeast (inaudible)

A. Southeast of the northeast of which section?

Q. Of Section 34.

A. Southeast of the northeast, no, there should not be.

(Thereupon a discussion was had off the record.)

MR. RAMEY: Any other questions of the wit-

ness?

MR. LOPEZ: Yes, Mr. Examiner.

CROSS EXAMINATION

BY MR. LOPEZ:

Q. Referring to your Exhibit Number Sixteen, just assuming that your calculations are correct that one well will adequately drain an 80-acre unit, does the well drain a radial or circular extent from the wellbore or does it drain acreage in an 80-acre horizontal configuration?

A. It will drain acreage in the area of least resistance to flow whatever that is within the reservoir.

Q. Well, in that connection would you agree that two wells at standard locations in the southwest quarter of Section 27 would more effectively drain the reservoir underlying the quarter section than one?

A. Depends on where those wells were located.

Q. Well, assuming they're located in standard locations.

A. Okay, if we drill our well at the proposed location, the proposed location that we have indicated on the map, again our interpretation, we feel like it will drain the south half of the southwest quarter. We do not feel like the north half is productive.

Q. Well, let me ask you the same question I asked Mr. Mosley. How would a well located on the east side of the south half oriented proration unit effectively drain reserves up dip to the west?

A. The up dip is a projection on the cross section. Again, I'm not a geologist; I don't pretend to be. We don't know what that porosity does between those two wells. Ours is an interpretative drawings; we feel like, if you'll look at the cross section A-A', I'm not sure of the exhibit number. Tom?

MR. KELLAHIN: Thirteen.

A. Exhibit Number Thirteen, I don't think you are necessarily looking at up dip drainage. You might be, the way we have it interpreted in the upper porosity, but in the middle porosity, which is the main pay in the area, it looks to be fairly flat to me.

Again, I'm not a geologist.

Q. Well, Mr. Rose, going back to my earlier form of the question, assuming that Texaco agrees with you that a substantial portion of the north half of the southwest quarter is unproductive, therefor a well drilled in the north half would not be an economical venture, and also assuming that a well drilled at your location comes in as a good well, as projected by C & K, would you agree with me that an offset

well to the west, or at 660 from the south and west of 27, would result in more effective and efficient drainage of the southwest quarter of the section and reserves in place?

A. In a technological sense it might recover some additional reserves from that standpoint. It depends on the interpretation again between those two wells. I don't think that's sufficient evidence to put a well down in the southwest of the southwest.

The other consideration is an economic consideration here. The incremental reserves you would recover by putting a well down there over a well, a single well where we have it proposed now, the incremental reserves versus the additional money spent would be very minimal, I think.

True, that well would cover -- recover reserves and it would compete for the other one, so when you drilled it, it's going to look good, but I think you can do the same, essentially the same, by drilling one well at that location. The reason we didn't go that direction with the original well was due to the sketchiness of this 28-1 and we don't know where that barrier occurs or whatever it is that is happening in the 28-1. For all we know, it could be, like Mike said, could be right at our well. We don't believe it is, and then again, if you drill a well there in the southwest of the southwest, then you again have a problem of drain-

age of the northwest of the northwest in Section 34, and we don't feel like we need another well there. We're essentially going to be drilling -- set off another chain reaction in spacing these wells on 40 acres when I've already testified that they can drain at least 80 acres.

Q. Well, a determination as to whether an offset well in the southwest of the southwest should be drilled cannot be really, truly determined until the results of the well drilled in the proposed location are ascertained, is that correct?

A. It might give you some additional information. It may not. We can't make that determination now, but if you believe, like we do, that the north half is unproductive, again you have two stand-up proration units, both half productive.

Q. Well, essentially isn't what you're saying, is that you would rather preclude the drilling of two wells in the southwest quarter in order to protect your production in the northwest quarter of 34 and with total disregard for the correlative rights of any interest owners in the north half of the southwest quarter of 27.

A. Correlative rights to what, is what my question would be?

Q. Assuming that your interpretation is incor-

rect and that there is some production in the north half of the southwest quarter.

A. As I said before, a south -- an east/west orientation on the south half proration unit would not preclude owners in the north half from putting together a unit for a north half well; if you feel like it is productive, then that would be your option at that time.

Q. But if there is some reserves, let's say the north half of the north half of the southwest quarter is condemned, wouldn't it be more prudent to keep the door open for the drilling of two wells in order to drain whatever reserves may lay in the north half -- or lie in the north half of the southwest quarter, rather than preclude it by (inaudible) it to a south half proration unit?

A. For two reasons I don't believe that that's -- that's true. If you are in it, in the east/west direction on the south half, you are not precluding the drilling of a well in the north half if somebody feels like -- if at a later time the interpretation comes around that that is productive, an east/west north half proration unit could be formed for the drilling of the well in the north half of the southwest quarter.

If we lay down that proration unit, it will also prevent the situation that I described earlier where we

go to a 40-acre spacing. So I don't feel like laying down the east/west proration unit in the south half, I do not feel like we're precluding the drilling of another location if somebody feels like the north half is productive, but I think we are precluding waste as far as an economic situation arises when we'd have to drill offset wells in 34, which we don't feel like we need.

Q. We understand each other.

MR. RAMEY: Any other questions of Mr. Rose? He may be excused.

MR. KELLAHIN: Mr. Latham.

E. L. LATHAM, JR.

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Latham, would you please state your name and occupation?

A. E. L. Latham, Junior, and I'm an independent operator, and I drill wells. I'm an operator of wells at the present time and I participate with other operators as a non-operator.

Q. Mr. Latham, have you participated as a working interest owner in wells that have been drilled in the Casey-Strawn Field, as we've been discussing this afternoon?

A. Yes, I have, and also the wells back in Section -- in the southeast quarter of Section 28. Mr. Barton and I participated in the Harvey Yates well and the Shipp 28 No. 1, the C & K Well 27-1, the discovery well, and also the dry hole, the 27-A No. 1.

Q. And you have interest in the Mesa wells in 28 and 34, don't you?

A. That's a royalty interest.

Q. I see. So you and Mr. Barton have participated as a working interest owner or royalty owner in the wells from the inception of the discovery well on down to the present.

A. That's true.

Q. Would you describe for us, Mr. Latham, what has been the history of development of the field insofar as the proration units have been oriented?

A. All the proration units, beginning in 1975 up until February, 1981, were established on east/west proration units, and on I believe it was February the 2nd, 1981, Mesa revised the proration units in the northeast quarter of Section 34 and -- but prior to that time, the six years pre-

vious, all the proration units were east/west.

Q. Based upon your interest in the Casey-Strawn Field, Mr. Latham, to your knowledge have there been any other occurrences in which the southwest quarter of Section 27 was ever the subject of any Commission pooling order?

A. Yes, it was, in 1975, Order No. 6 -- it wasn't order number, it was Case Number 5509, the south half of the southeast -- southwest quarter of Section 27 was pooled, and at that time Texaco's interest was exactly what it is today and they did not protest any pooling of that interest at that time.

Q. Mr. Latham, I show you what I've marked as Exhibits Seventeen and Eighteen and ask you if you can identify those pooling orders?

A. Yes, I can.

Q. Is one of those orders the order to which you just made reference?

A. Yes. Case Number 5509, which is Order No. R-5041, was a compulsory pooling of the south half of the southwest quarter of Section 27.

Q. Was there a companion order for the north half of that quarter section?

A. Yes, there was. That was Case 5510, that was Order No. R-5042, and that compulsory pooling was of the

north half of the southwest quarter, and that's where the Shipp 27-A No. 1 Well was drilled as a dry hole.

Q. Would you describe for us what yours and Mr. Barton's interest is in the southwest quarter of the southwest quarter of Section 27?

A. That's where the majority of our interest is, in the southwest quarter of the southwest quarter.

We acquired this interest prior to 1975, in fact, in 1974, before any wells were ever drilled in the Casey-Strawn Field. We're not Johnny-come-lately, so to speak, in trying to maneuver into position after the field had been discovered. We were there previous to the first well.

Q. What efforts, if any, have you made in the past to have a well drilled that's dedicated to the south half of the southwest quarter of 27?

A. In early 1976, it was in March, we contacted Enserch -- Lone Star, which was Enserch, and at that time C & K had returned all the farmout acreage to Lone Star, and they were the majority leasehold interest in the southwest quarter, and their land department agreed with us that a well should be drilled dedicated to the south half of the southwest quarter of Section 27, and they recommended that to their management but their management didn't agree and we couldn't

get a well drilled.

Q. After that, when's the next occasion that a well was proposed or planned for the southwest quarter of this section?

A. Well, that was when C & K proposed drilling one at the present location but standing the proration unit north/south.

Q. And what, if any, response did you make to C & K with regards to that proposal?

A. I objected to that proposal.

Q. What were the reasons for your objection, Mr. Latham?

A. Because we had paid our money in drilling the Shipp 27-A No. 1, which is a dry hole, and we felt like that condemned that 40 acres as being nonproductive, and all the other proration units for six years had -- previously the history has been east/west proration units; therefor, we felt like the best prospect for a commercial well would be the south half of the southwest quarter.

And by the way, when we proposed the location to Enserch in 1976, we owned the Hightower leases at that time, which is what Yates now has. We could have proposed a north/south proration unit because our interest was identical. It didn't matter to us which way, we had the same in-

terest either way, but due to the fact of the dry hole that we had drilled in the 27-A No. 1, and condemning the north half of the southwest quarter, we proposed, and do today, the south half of the southwest quarter.

Q. If the Commission should disapprove the south half southwest quarter and conversely approve Texaco's request for the east half of the southwest quarter, Mr. Latham, what, if anything, will you then do?

A. Well, under those circumstances I would have to drill a well in the southwest quarter of the southwest quarter, or cause one to be drilled, and that would, in my opinion, would be an unnecessary expense. In reality it would be putting the field on 40-acre spacing.

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

MR. RAMEY: Any questions of Mr. Latham?

CROSS EXAMINATION

BY MR. LOPEZ:

Q. Mr. Latham, I don't suspect that in fact the -- with regard to the Latham interests are increased from .26 percent to almost 13 percent by virtue of the orientation from the east half to the south half proration unit enters into your opinion as to how you'd like to see this proration

unit to be designated.

A. Well, naturally that would, but the proration unit to the north has been condemned.

Q. Well, on what basis do you state that the dry hole condemns the entire 40 acres?

A. Why does it condemn it?

Q. Yes.

A. Because it was wet and it was a low well. It's been testified here today that -- that that's a nonproductive well.

Q. But do you have any geological information available to you that would indicate that that dry or wet well, as we'll describe it, condemns the entire northeast of the southwest quarter?

A. Well, I have the logs and I have the results and since we were participants in the well, you would have to say that from all expert testimony here today that that was obviously a dry hole.

MR. RAMEY: Any other questions of Mr. Latham?

REDIRECT EXAMINATION

BY MR. KELLAHIN:

Q. I'm confused by something you said, Mr. Latham.

The dry hole in the north of the location, whatever it may be, in the northeast of the southwest quarter, that was subject to a pooling case and that well was drilled, what did you say Texaco's interest, if any, was in that first well?

A. That was 22 percent; same as we're proposing today in the south half.

Q. Did they participate in the drilling of that well or did they go nonconsent, do you recall?

A. They participated in the drilling of that well.

Q. To the best of your knowledge, did they object to that well being plugged and abandoned?

A. They did not.

MR. KELLAHIN: No further questions.

MR. RAMEY: Any other questions of Mr. Latham? He may be excused.

We will take a fifteen minute recess.

(Thereupon a recess was taken.)

MR. RAMEY: The hearing will come to order. Mr. Kellahin?

MR. KELLAHIN: Mr. Chairman, I'd like to move the admission of Exhibits Seventeen and Eighteen, I believe.

MR. RAMEY: Exhibits Seventeen and Eighteen will be admitted.

MR. KELLAHIN: That concludes our presentation.

MR. RAMEY: Thank you, Mr. Kellahin.

MR. LOPEZ: Mr. Chairman, I'd like to call our first witness, Mr. Tom Bryla.

TOM BRYLA

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

DIRECT EXAMINATION

BY MR. LOPEZ:

Q. Would you please state your name and residence, by whom you're employed and in what capacity?

A. My name is Tom Bryla. I work for Texaco in Midland, Texas. I'm a member of the Permian Basin Landman's Association and Associate Member of the American Association of Public Landmen.

I work in the capacity in the land department a combination promotional man handling Texaco acreage, and dealing again with land contracts.

Q. Have you ever previously testified before

this Commission and had your qualifications accepted as a matter of record?

A. No, I haven't.

Q. Will you then briefly describe your educational background and your employment (inaudible.)

A. Certainly. I have worked two years in Texaco. Prior to starting with Texaco I graduated from law school at Texas Tech University. I also graduated from Texas A & M in environmental design.

Q. Are you familiar with the cases being before the Commission today, Case Number 7730, as --

A. Yes.

Q. -- well as the application of Texaco for forced pooling, designated as Case Number 7762?

A. Yes, I am.

Q. And with the lands that are the subject of this hearing? Or to these hearings?

A. I'm sorry?

Q. Do the lands that are the subject in each of the cases fall within your area of jurisdiction as a landman for Texaco?

A. Yes, it has.

MR. LOPEZ: Are the qualifications of the witness acceptable?

MR. RAMEY: Yes, they are, and would you spell your last name, please?

A. Yes, sir, B-R-Y-L-A.

Q. What is it that Texaco seeks in Case Number 7762?

A. Okay. Texaco seeks an order pooling all the mineral interests through the Pennsylvanian formation underlying the east half of the southwest quarter of Section 27, Township 16 South, Range 37 East, in the Casey Field, to be dedicated to a well to be drilled at a standard location thereupon.

Q. Would you now turn to what's been marked as Exhibit Number One and identify it?

A. Exhibit Number One is a Texaco land map, indicating the Texaco interest involved in the leasehold that we're currently talking about here at this particular Commission hearing.

The red line indicates the east half of the southwest quarter that we're seeking to have dedicated a proration unit. The yellow just outlines Texaco acreage in that leasehold in general.

Q. Now would you explain for the Commission the background, as you understand it, between C & K and Texaco with respect to negotiations affecting the orientation of the

proration unit in the southwest quarter of Section 27.

A. All right.

Q. And in connection therewith I'd ask you to refer to what's been marked Exhibit Number Two.

A. Exhibit Number Two is a letter from C & K Petroleum dated September 10th, 1982, which had been admitted in evidence already, which we received September 13th of 1982.

It requests that Texaco join or farmout on a well in the east half of the southwest quarter of Section 27, 16 South, 37 East, in Lea County.

It was a proposal to drill an 11,800 foot Strawn test to be located 1980 from the west line, 660 from the east line.

The particular item was sent, I believe, through the mail and it was originally proposed to us in the manner as presented without any other oral conversation or phone call.

The thing, the only thing that was added to this that is not in the actual letter, that we were asked to rush this thing in a more prudent manner than any other normal deal, because there was a problem with the Yates leasehold expiring, wanted to have it spud by October 15th.

So that is the basic background as far as original proposal in writing to Texaco.

Subsequent to that, -- I'm sorry, it was also a matter of the fact that they -- it was going to be brought before the oil and gas commission for hearing September 29th to have the proration unit designated and the forced pooling to be had on the east half of the southwest quarter for the Shipp 27-B No. 1.

Subsequent to that time we were told orally over the phone, and I'm thinking it was either the last week of September or the first week of October, I don't have copious notes on that so I can't verify that, I have some dates to go and bring it down to that general period, when I'd conversed with Mr. Louis Torrance, not Ms. Lebow, Louis Torrance being the land manager, I believe it is, at C & K Petroleum. He informed me that the proration unit was going to probably be changed to the south half of the southwest quarter and what was Texaco's feelings on that, and up to this point what we'd done was our standard procedure in these things. Before we do anything we send them down to the geological people, let them evaluate the particular proposal, let them give us an idea what they think it is, so the land department can make a more informed decision as to what they want to do as far as the land standpoint.

So at this time we had not got that information back from geological; they were still evaluating it, so

I couldn't answer that question. I said, at this time I don't know what we're going to say about having the south half of the southwest quarter. It was being evaluated on the east half southwest quarter. So I notified our people that we needed to change that.

So at that time I gave no word whatsoever, one way or the other, as to what we planned to do; just said it was being considered.

We had a meeting the 7th of October to discuss that particular deal and we were concerned about the time schedules here, and, of course, Yates having a problem. We did want to go ahead and accommodate everybody if possible. But we still hadn't had quite enough time to look at it, and we did want to approve another well that was in the area, so we -- the meeting, basically, the part that's important to me, was I was told if possible, was see if C & K would want to go ahead and delay drilling the 27-B 1 for a little bit until we could go ahead and decide what we wanted to do on this.

So sometime after October 7th and prior to October 12th, I talked to Mr. Torrance again and let him know that we would like to go ahead and delay for a short time if at all possible. He said that he didn't particularly want to wait on it, as I recall, but that nevertheless, would we

consider it anyway, the way it is, and we could always get back to them.

So what I'm saying is that at this point we still had not agreed any well on that particular location; it was still being considered and we had not made a decision one way or the other as regards the east half southwest quarter.

The thing that came to head finally was that we were -- we were given some information from our geological staff sometime prior to November 4th, which is when I delivered a letter which Ms. Lebow referred to, whereby Texaco notified C & K that we would not be able to go along with a south half proration unit, our logic being that we wanted to protect ourselves for possible offset locations; that we didn't feel that generally speaking, that if it was a change of ownership, as it was indicated, across from the east half to the west half, that the west half, if nothing else, we do not feel it should have as large an interest in the east half as far as any kind of production, and therefor, we thought it was still justified to go ahead and include the dry hole. In other words, we wanted the 80-acre proration unti still to the east, the logic still being that, although possibly without a doubt part of the north half is condemned, how much is in question. Certainly if there is something to the west, if we were to go ahead and put it in a south half proration unit, we would

preclude ourselves from drilling another well without having another Commission hearing.

So we wanted to protect ourselves by keeping the west half open without any problem of having a change of proration unit, and since there was a variation of mineral owners, we thought it would be better to stop it now; in other words, keep it on the east half, than it would be allow a meeting with the Commission to set a proration on the south half and then have to go back and change it through a bitter fight of some sort.

So we did decide at that point we wanted to stick with the east half southwest quarter. C & K was notified verbally probably a day before November 4th, and on November 4th we did indeed deliver a letter, which Ms. Lebow mentioned, which stated our opposition to the south half proration unit, and that was basically where we stood at that point.

We did talk to Yates prior to that. Yates also was upset for several reasons, none of them quite clear. They have both got a geological standpoint where they would like to have a --

MR. KELLAHIN: I'm going to object to this --

A. I'm sorry. I'm sorry.

MR. KELLAHIN: -- man saying what Yates may

have -- this testimony as to what Yates may have said.

A. Fine, I'll drop that part of it.

Q. Okay. I'll now ask you, Mr. Bryla, to refer to what's been marked as Exhibit Number Three and describe it.

A. Exhibit Number Three is merely a breakdown of Texaco's interests in that particular section, in Section 27. The entire section is broken down into quarters and the southwest quarter is broken down into west half and east half.

Our mineral interest is both in a fractional amount, 329/1920 on the west half, and also percentage if you break it down, and also on the east half 553/1920, which equals 28 percent on the east half.

Q. Okay, now I'd ask you to refer to what's been marked as Exhibit Four and ask you to identify it and describe it.

A. Okay. Exhibit Number Four is a letter from C & K, which is dated October 22nd, received by Texaco October 25th, which formally let us know that the interests were changing, who they were that they were changing with, Barton, Latham, Yates, and Texaco, and also Ann Morris changing to go with the title opinion.

The letter, it was to notify us that the 80 acres being dedicated would be south half of southwest quarter, and an AFE, and no waiver sent along with that particular let-

ter.

The interests that were included with that letter are more detailed than the original proposal, so in that sense it is certainly more significant; we now have more information as to whose interests were involved.

Q. Is Texaco's mineral interest diluted by orienting the proration as a south half unit as opposed to the east half unit?

A. Yes, it is. The east half, by itself without including any other acreage, we have an interest of 28.02 percent, that figure being truncated after three decimal places as I mentioned on Exhibit Three.

If you go and lay a south half proration unit on that particular quarter section for that well 27-B-1, what happens is we have to average it together and our interest then becomes instead of 28 percent, 28.8, it becomes 22.968750 by the exhibit of the proposal, which we're now on Exhibit Four.

So our interest is reduced by about, if you were to look at it, I'm assuming, not getting too technical, too close, 5.8 percent, almost 6 percent.

Q. Is the Yates unit diluted or reduced in a like amount?

A. Yates, yes, Yates drops from the original

proposal, I believe they had 13.6 percent by prior -- the Exhibit Number Two, there's a reference to it, Yates was originally listed as 13.33 percent. Their interest now drops as per this letter, the new proposal, the south half, down to 6.667 percent, or 6-2/3rds per cent, so they drop approximately 6-1/2 percent, also, a little more -- a little less than that.

Q. Does the fact that there is varying mineral ownership rather than a common mineral ownership in the southwest quarter of Section 27 affect your opinion as to the importance of properly designating the orientation of the proration unit at this time?

A. I'm not sure I understand the question, but if you mean from the standpoint that first off from a business end of it that Texaco loses interest, yes, it does make a large difference, and if you look at it from the standpoint that this was based on geologic information that the land department based its recommendation on that the west half would be at a different level, the east half, the location of the 27-B-1 is low to the west half and --

Q. Excuse me, I don't think you did understand the question.

A. I don't -- I probably --

Q. Does the fact that there's not common mineral ownership under the southwest quarter of the section affect

your thinking as to whether it would be possible to re-orient the proration unit, the 80-acre proration unit, to a stand-up basis once a well is drilled dedicating a south half proration unit --

A. Well, I'm assuming you're talking about then, is the difficulty in getting the proration unit changed?

Q. Yes.

A. There's certainly going to be some difficulty. The southeast quarter, which was recently changed, it is mentioned in prior testimony, involved the common interest, common mineral interest, and there was no difference in changing from a south half to a west half and east half on the southeast quarter, and I'm referring now to the 27-B-1 but the 27-B-2. This case is not the same; it's unique in that the west half and east half do have varying mineral interests. They are not the same. You are going to have some problems resolving that and you are going to have people who are now settled in their position and they don't want to change their position, any number of things that will involve a more detailed hearing, I'm assuming.

Q. If C & K's application is denied and Texaco's application in Case 7762, which is rescheduled for further hearing on December 16th is granted, is Texaco prepared to commence drilling the well before the end of calendar year

1982?

A. Well, --

Q. Located at the designated location with the east half of the southwest quarter --

A. Yes, that has been made clear --

Q. -- dedicated to it?

A. -- Texaco would indeed drill the well 1980 from the west, 660 from the south, the present location, in other words, if the proration unit is designated the east half before the end of the calendar year; they could spud.

Q. Has Yates agreed to join you in this?

A. Yes, Yates has verbally committed themselves to join us in this particular venture.

Q. And if the drilling of this well is successful, would Texaco be prepared to thereafter within a reasonable time commence the drilling of an additional offset well with the west half of the southwest quarter dedicated to that well?

A. I'm assuming -- you mean after looking and taking an educated look at the information we gather from this well? I don't know if Texaco would commit to another well at this time on the west half, the reason being that we'll get more information when this well is drilled. I don't think it would be a reasonably prudent operator who would

say now, considering the risks involved, that we would want to drill a well on the west half yet, but it's something we'd want to keep as a viable option, that if this well does indeed and we get the information that we think tells us this will be a good location, that we want that west half location protected so that we can drill it if we want to; so that somebody can drill it.

Q. And assuming that this doesn't come in and indicates that it wouldn't be prudent to drill an offset well, obviously management wouldn't care to -- well, you don't know that --

A. I'm not sure on that one.

Q. Okay. Were Exhibits One through Four prepared by you or under your supervision?

A. Yes, they were.

MR. LOPEZ: At this time I'd like to offer Texaco's Exhibits One through Four.

MR. RAMEY: Texaco Exhibits One through Four will be admitted.

Any questions of the witness?

CROSS EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Bryla, --

A. Yes.

Q. Would Texaco be objecting to C & K's application if it would result in an increase in Texaco's interest as opposed to a decrease?

A. That would depend on the second location well again. I see what you're getting at and I will grant you that as a matter of economics it is certainly something to bear in mind. But that is not the case in this case.

The case here is that we have an offset location we do want to protect, and indeed our interests are diluted going to the west half, and it's something that is to be considered, but what you're speculating now is not the case.

Q. Are you telling me it doesn't matter that Texaco's interest is reduced by 6 percent?

A. It certainly matters as a business decision, as everybody here has indicated, both sides. The primary interest, the thing -- you could go and argue from the standpoint right off the bat, as a business decision that you'd want to go ahead and keep it on the east half, if you like. Anybody in their right mind would consider that as a viable, logical thing to look at, but in addition to that, we do have geological matter which will be presented after my presentation, which to us indicates that there should be a pro-

tection of that west half as another location.

Q. Are you telling me that you would join C & K if your interest was increased; because it's being decreased by 6 percent you want to orient it to the east half proration unit?

A. I'm afraid you're going to have to say that a little clearer. I'm not following your logic exactly, or something.

If our interest were to increase by laying a south half, in other words, would it make a difference to us and we'd then go along with a south half proration unit?

Q. That's what I asked.

A. That is not something we've considered at this point because that is not the case at this time. We haven't considered that at all.

MR. KELLAHIN: I have no further questions.

MR. RAMEY: Any other questions of the witness? He may be excused.

MR. LOPEZ: Call Mr. Horvath.

EDWARD HORVATH

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

DIRECT EXAMINATION

BY MR. LOPEZ:

Q. Would you please state your name and where you reside?

A. My name is Ed Horvath. I reside in Midland, Texas; employed by Texaco. I'm a development geologist.

Q. Mr. Horvath, are you familiar with the subject matter of these two cases before the Commission today?

A. Yes, I am.

Q. Have you previously testified before the Commission and had your qualifications as a petroleum geologist accepted and made a matter of record?

A. Yes, I have.

MR. LOPEZ: Is the witness considered qualified?

MR. RAMEY: Yes, he is, if he'll spell his last name, please.

A. H-O-R-V-A-T-H.

Q. Mr. Horvath, I'd ask you to refer to what's been marked as Exhibit Number Five and identify it, please.

A. Exhibit Number Five is a structural map contoured on top of the Strawn lime. It shows production to the left, or to the west, from the Lovington East Penn Field and to the right, to the east, from the Casey-Strawn Field.

The contour interval is 100 feet. The scale of the map is one inch equals 2000 feet. The contours start from the left, to the west, at -7100, dipping to the northeast on a structural nosing going across the Casey-Strawn Field down to a -7600.

Wells that have produced from the Strawn are shown in red. The wells that have penetrated the Strawn but are not producing from the Strawn are indicated by black arrows.

The red lines which go across there, as you can see, indicate a pathway or a fairway of porosity from the Lovington East Penn Field to the Casey-Strawn Field, as designated, porous carbonate within it, non-porous carbonate outside of it, so this is a zone or a pathway of porosity.

The lines of cross section, there are three that I have shown on here, they'll be shown as exhibits coming up. Line A-A' shown in this pink -- well, let's call it a pink tape on this one, starts from the southwest, progressing across to the east. B-B' starts from the northwest, cuts across the Casey-Strawn and goes to the southeast. C-C' is the one in green tape going across from west to east.

Q. Now I'd ask you to refer to what's been marked as Exhibit Number Six and ask you to identify it.

A. Six. Exhibit Six is a cross section A-A', that you have just looked at on the previous one, which is the cross section from the southwest across to the east, and this is a large one. Now which is the best way to show this?

Q. I guess everybody can unfold it there.

A. I myself will have to have some place to spread this out so I can look at it.

How about spreading it down this way? Can you read it like that?

Q. Yeah, that's fine.

A. Okay. This is a structural cross section on top of the Strawn lime. The vertical scale, as you can see here, is one inch is equal to 50 feet. The horizontal scale is one inch equal to 200 feet. The datum is -7300. The top of the Strawn has been shown going across this direction. Again we start off with a well that -- a dry hole, which is tight, to the southwest by the Lovington East Penn Field, go across a location that we recently drilled, the Texaco No. 1 Lee Carter, and we come into three wells to the east which are completed in the Casey-Strawn Field.

DST's have been shown colored in green. Perforations are shown in red. The upper zone of porosity, which is colored in red, this is the zone which is producing in these three wells. It comes across the well, which during

drilling operation they had a drilling break. A DST was attempted, the packer failed, but we did recover oil and oil and gas cut mud. This would look like a good zone.

A lower zone in which we also had porosity which was not tested, but this lower zone, which then comes down across to the next well, which perforated and swabbed water, and we see it going up on the east.

So there are two zones I show compared to the previous discussion of three zones.

Again there's a little map down into the corner and I show the areal distribution of the two zones. The red shows the pper zone of porosity and the blue zone shows the lower zone of porosity, an areal distribution with the cross section across it.

The next cross section --

Q. Which has been marked as Exhibit Number Seven.

A. This again is a structural cross section with a datum of -7300 feet. It is a northwest and southeast cross section going across the Casey-Strawn Field. It has been shown by this red tape on the first exhibit or it can be shown by looking down into the corner.

The Strawn, top of the Strawn lime has been picked and is shown as we go across through here. The verti-

cal and of course the horizontal scale are the same as on the previous exhibit.

We start off with this Burton Well, which is a dry hole in the Strawn, no DST's and a tight lime outside the zone of porosity. We go to the C & K Shipp 28-A-1, which was discussed previously, which had porosity but was water bearing. We come to two wells in the Casey-Strawn which had upper zone which is producing, which has been colored in red. Again DST's are shown in green. Perforations are shown in red.

We go to two other wells which are not completed in the Strawn.

This is a very interesting well. In fact, it showed the zone of porosity down around, a little up above 11,400.

Q. Would you please identify the well?

A. The name of the well is the Mesa Knowles No. 7 Unit, which is a dry hole, as shown on our map, line of cross section.

There is a zone of porosity shown but on the caliper side there's a huge washout. A DST across that zone recovered no fluid, no oil, no water, so evidently it is a washout and not true porosity. So therefor, based on that, I'd want to continue that upper zone of porosity down to that

well.

As previously discussed, on the C & K Shipp No. 1 in Section 28, that zone of porosity I do not believe belongs there because of a washout, huge washout on the caliper. Previously it was called a permeability barrier. I'd say it's a loss of porosity.

Therefor, my zone goes from this well to this well; there's only production from these two wells.

The lower zone was perforated and tested water in this one, tested water in this one.

Q. When you say this one, you're going to have to identify the wells.

A. Okay, we tested water in the C & K Shipp 28-1, the C & K Shipp 34-A No. 1; both have water into it.

So there's two zones again, upper zone in red, the lower zone in blue.

Again, the areal distribution, the little maps in the corner, show where the upper zone of porosity is and where the lower zone of porosity is.

Q. Okay. Now I'd ask you to refer to what has been marked Exhibit Number Eight and ask you to identify this.

A. Okay, Exhibit Number Eight again is a structural cross section. It's an east/west cross section primarily in two previous wells which did not complete in the

Strawn. They tied in a new well, which is the Shipp 27-A No. 1 to the north of our proposed location and back into the discovery well, the Shipp 27 No. 1.

Again this shows a datum of -7300. It shows the connection with the top of the Strawn. DST's are shown in green; perforations are shown in red. Again the upper zone comes in through here, completed. The blue zone, the lower zone as we've seen before in the Shipp 28 No. 1, and also it is this lower zone which has the fluid into it, which is in the Shipp 27-A No. 1.

Again the areal distribution is shown. The red shows the upper zone of porosity; the blue shows the lower zone of porosity.

Q. In your analysis of the logs of the wells reflected in the cross section exhibits, have you formed an opinion as to whether or not there are recoverable reserves underlying the north half of the southwest quarter of Section 27?

A. In the north half we could probably rule out where that No. 1-A was drilled, which was water bearing, which probably only occupies 20 acres. That is the most I can take out is that 20-acre portion of it.

I may continue my line across, also, to rule out the west portion of it, so there would be a line as

shown on my previous maps that would go across the northern part of it, but not rule out the whole 80 acres.

Q. So is it your opinion that -- that 40 acres of the north half are probably unproductive and 40 acres are possibly productive?

A. Yes, that is my opinion.

Q. Is it your opinion that denial of C & K's application in Case 7730 and the granting of Texaco's case 7762 is in the interest of the prevention of waste and the protection of correlative rights?

A. Granting to Texaco, yes, by giving us two possible locations in there for drilling compared to only one as proposed by C & K.

Q. And why would the factor of having the ability to drill two wells rather than one be in the interest of prevention of waste and protection of correlative rights?

A. I believe by drilling that one location, 1-B, that all that would be drained would be the east portion of that southwest section up to where that dry hole is.

The -- as shown on my structural map, it comes in higher structurally to the southwest, so therefor you would have to drill a well over into the southwest corner or otherwise you could not drain by drilling that one well.

Q. Would it also preclude the drilling of -- if

the proration unit was oriented as C & K is requesting, a lie down unit, would, in your opinion, a prudent operator be inclined to drill a well in the north half at an orthodox location?

A. No, a prudent operator would not drill in the north half.

Q. Is it your opinion that the failure to do so would result in the inability to drain whatever reserves, you testimony, I believe, 40 acres worth of reserves in the north half of that quarter section?

A. Will you state that again? By drilling --

Q. Would a prudent operator be precluded from drilling a well at an orthodox location in the north half, in your opinion, thereby denying him -- or denying the mineral owners the recovery of 40 acres worth of reserves in that northern half?

A. I believe if a well could be drilled in the northern half you may get some oil but it may not be economical.

Q. I would like you to refer to C & K's Exhibit Number Eleven and from -- ask if you agree with the contour map as reflected thereon?

A. The well that they show on here, of course they have no information onto it, but in Section 33 our Lee

Carter Well, which is shown, has a circle, which would be 660 from the east line and 1980 from the north line, shows an Isopach, I believe this is an Isopach of zero on here, and this is not true. This is erroneous information. Maybe it was interpreted that way because no information was available, but this is not true interpretation.

Q. Well, what is the correct information, if available, since I guess you had worked the well in question?

A. Looking quickly on the log onto it, there would be 18 feet, 14 feet, 10 feet, five feet, so it would be 18, 28, 38, 42, almost 49 feet of porosity compared to zero as shown.

MR. RAMEY: Which well is that?

A. That is a recent well of ours, the Lee Carter. It is in Section 33, 660 from the east line and 1980 from the north line. On this exhibit it's shown as a little circle in there.

Q. Now, the exhibit you're referring to is C & K's Exhibit Number Eleven, I believe.

A. There's no number so I don't know.

Q. So the record reflects that correct identification.

Were Exhibits Five through Eight prepared by you or under your supervision?

A. Yes, they were.

MR. LOPEZ: At this time I'd like to offer Texaco's Exhibits Five through Eight.

MR. RAMEY: Texaco Exhibits Five through Eight will be admitted.

Any questions?

MR. KELLAHIN: Yes, Mr. Chairman.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q. Mr. Horvath, do any of your three cross sections show a log of the Texaco well that you've recently drilled in Section 33?

A. No, there is a cross section with the projected points on it, but this cross section was prepared prior to the logging of that well, which would be A-A'.

You see I have a DST shown on there and I showed two zones of porosity, at least, on there. That was the best information I had at the time of preparing this cross section.

Q. You said that there were log indications of about 49 feet of porosity?

A. Porosity, yes.

Q. Did you complete this as a producing well?

A. We are probably completing it now. As of last Friday probably casing was being set and, yes, this will be completed in this.

Q. When you say you're running casing, do you know whether or not it's an economic well at this point?

A. It should be. It came in structurally high to everything around it.

Q. But there've been no potentials taken on this well.

A. No, we had a DST, though, up above, which indicated oil.

Q. Do you have a log on that well that I might see?

A. Yes, I do. I have a --

Q. Mr. Horvath, do you have a copy of C & K's Exhibit Number Eleven that you were just talking about?

A. Yes, I do. Is this what it says, total Lower Strawn Porosity; I'm assuming this is the same thing we were looking at?

Q. Now this was an effort by Mr. Mosley to show the Lower Strawn porosity. Where are you picking the porosity? At what depths in your well, Mr. Horvath?

A. Compared to my line of cross section or compared to what happens on the log?

Q. Well, where it occurs on a log.

A. If you -- well, I don't have a log in front of me again. Go back to your original question again.

Q. Yes, sir, you've indicated certain, at least four intervals of porosity.

A. Porosity, yes.

Q. 18, 14, 5, and 10.

A. Yes.

Q. I'd like you to show us on one of your logs exactly where you've picked that porosity.

A. On my cross section or on a log?

Q. Wherever it will show the depths of them.

A. Well, you're going to have to look at the log with me. I only have one set, which you have completely.

MR. LOPEZ: Maybe we should mark this Exhibit Nine-A.

A. This is one log that we have. Let's see, what's the best way to do this?

Q. I think we can make it real easy if we could just stamp it after you testify.

A. Okay.

Q. And if you'll take a moment now and use a pen and simply circle or indicate in whatever fashion you like, those areas where you have picked porosity.

A. Okay.

Q. All right, sir?

A. All right. Do you have the other log also?

Q. Yes.

A. Thank you.

MR. LOPEZ: So the Commission could see it, too.

A. The top of the Strawn came in pretty close to what I have on that structure map. I think it came in about 20 feet lower compared to the structure map I submitted at the -- our first exhibit.

The zones of porosity that we see up near the top portion, going down through -- there's a zone of porosity here, one through here, one through here, and there's also a lower one down through this portion of it.

The DST that was taken only covered the uppermost portion of it.

Q. All right, Mr. Horvath, if you'd return to your seat, let me ask you some questions.

A. Okay.

Q. Look at C & K's porosity Isopach in Section 33 and if you'll find the location of the Texaco well, just to the south of the Texaco well Mr. Mosley has drawn a zero contour line.

A. Yes.

Q. Do you find that?

A. Yes, I do.

Q. Just to the north of that line, then, is what appears to be the -- it's contoured on 50 foot intervals so the next line then is going to be at the 50-foot, all right, sir?

A. Okay.

Q. Now, if we honor the porosity you've given me of some 49 feet, the effect on this exhibit, is it not, is to simply take the 50-foot contour line and move it to the south and to the west?

A. Just open it up.

Q. It opens it up, does it not?

A. That's true, which is our original interpretation by showing the porosity coming over in this direction.

Q. All right, sir, and if you continue that analysis on up to the south half of the southwest quarter, it does nothing but improve the potential for porosity in the southwest of the southwest of that section, does it not?

A. That's true.

Q. All right, sir. All right.

Now, in looking at each of your cross sections here, you have drawn in the left corner of each of them

in one case in red and the other blue, what you believe to be the extent of porosity both in the Upper Strawn and in the Lower Strawn.

A. Let's call it Strawn porosity but an upper zone and a lower zone.

Q. Upper porosity zone and lower porosity zone.

A. Right.

Q. And it would appear from a quick glance of -- of your shading that on each of those cross sections for both the upper porosity and the lower porosity, that in each instance the south half of the southwest quarter of Section 27 appears to have more porosity potential than would the north half of that quarter section.

A. That is true.

Q. In addition you told me that as a prudent operator you could not recommend to Texaco that there was any location in the north half of the southwest quarter that you would recommend be drilled.

A. Economical well.

Q. All right, sir, that's all we're interested in drilling, I hope.

A. That is true. You can drill a well and make a well but not economically.

Q. All right.

A. All right.

Q. Now, if all those things are true, then, Mr. Horvath, the only thing accomplished by orienting the proration unit so that there's an east half of the southwest and a west half of the southwest --

A. Yes.

Q. -- would be to give Texaco credit for nonproductive acreage in the proration unit.

A. You would have two units which may be approximately 60 acres, but then you notice that a similar thing happened down where the Mesa wells have been drilled. You have a producing well and you have a dry hole within the same 80-acre proration unit. This is not the first time that has occurred, however. A very similar situation.

Q. The basic statement I have made to you is correct, is it not, Mr. Horvath?

A. Go back to your statement again.

Q. All right, sir, I said a proration unit that includes any portion of the north half of the southwest quarter, whether, in particular regard, the east half of the southwest quarter, you are going to dedicate to it acreage which you know is nonproductive.

A. It can have oil in it, though. I didn't say not be productive. I said it will have oil in it.

Q. You said that there was a potential for condemning 20 acres.

A. Because of the dry hole, yes, in the northeast of the southwest.

Q. And if we orient that so it's a south half of the southwest quarter, then I don't see any of your exhibits that show me that any portion of the south half of the southwest quarter is going to nonproductive.

A. Say that again, now, I got lost somewhere in that statement.

Q. You told me that there's a portion of the northeast of the southwest with a dry hole in it --

A. Uh-huh.

Q. -- that's not going to be productive --

A. Uh-huh, because of the dry hole.

Q. It's condemned by the dry hole.

A. Dry hole, that's true.

Q. All right, sir. And in looking at your exhibits, I don't see anything here, unless you can point it out, that shows that there is some portion of the south half of the southwest quarter that is going to be condemned. You condemned 20 acres out of a 40-acre tract with the dry hole.

A. I condemned 20 in the northeast and condemned 20 out of, say, northwest out of the southwest.

Q. All right, sir, what portion of the southwest of the southeast -- I'm sorry, southwest of the southwest, or of the southeast of the southwest?

A. Have I condemned?

Q. Yes.

A. Nothing.

Q. All right, sir.

A. But I'm showing that there's a structural advantage by going to the south -- to the west; you cannot drain it by laying your 80 down.

Q. All right, you're telling me they ought to move the location farther to the west.

A. Or drill two different wells. Drill the well that you have now;based on that information leave yourself open and be able to drill a well in the southwest of the southwest; don't condemn it at this time.

Q. Have you made any calculations or studies with regards to the drainage patterns in any of the wells --

A. No, that's not -- that's out of my field. That's under engineering.

Q. That's an engineering problem, is it not?

A. Yes, it is.

Q. All right, sir. There are a couple of examples of this, Mr. Horvath, but let's take Exhibit Number

Seven, and looking at your blue drawing of the lower porosity, the dry hole in the northeast of the southwest quarter --

A. Looks like I may have to also be looking because I do not have --

Q. All right, sir.

A. Okay. Yes.

Q. It's the dry hole we've been talking about.

A. On the line of cross section you'll notice that there is porosity. It tested water out of that lower portion of it.

Q. That's why you honored it on your map --

A. That's right, that is true.

Q. --to show porosity. All right.

A. That is true. That is a true statement.

Q. All right. In addition I believe your map shows that the well in 28 out of the southeast quarter --

A. The most recent well, yes.

Q. Yes, sir. Some of those you have honored, I believe, with porosity values on your map.

A. The lower zone, yes, with porosity, but the upper, no, because of that washout on that caliper side. I said that is not a true zone of porosity.

Q. Neither one of those wells has produced from those zones, have they?

A. No, it's a water bearing area.

Q. So --

A. But there is a possibility as you go to the west it will become productive.

Q. So the indication of porosity doesn't necessarily indicate productivity, does it?

A. Not in this area but over further where our well is, there's a good possibility. All right?

MR. KELLAHIN: I have nothing further.

MR. RAMEY: Any other questions? He may be excused.

MR. LOPEZ: I'd call now Mr. Woliver.

JEFF M. WOLIVER

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

DIRECT EXAMINATION

BY MR. LOPEZ:

Q. Would you please state your name and where you reside?

A. Yes, my name is Jeffrey M. Woliver and I reside in Midland, Texas.

Q. By whom are you employed and in what capa-

city?

A. I'm employed by Texaco, Incorporated as the Midland Division Operations Engineer.

Q. Are you familiar with the application in Cases 7730 and 7762?

A. Yes, I am.

Q. Have you previously testified before this Commission and had your qualifications as a reservoir engineer, petroleum engineer, accepted as a matter of record?

A. Yes, I have.

MR. LOPEZ: Is the witness considered qualified?

MR. RAMEY: He is considered qualified.

Q. Mr. Woliver, I would ask you to refer to what has been marked as Texaco's Exhibit Number Nine and ask you to identify it.

A. Yes, sir. Texaco's Exhibit Number Nine is a general area map of the Casey-Strawn Field. As shown on the map, the wells that produce from the Strawn are indicated by the shaded in circles.

In the margins on this map I have a number scheme that I would like to explain: That the first number in the top is the barrels of oil per day produced from this respective well; the second number is the barrels of water

produced per day, and the last number being the GOR for the well.

In the denominator, or in the bottom of the scheme, we have the cumulative production through 1981, and that is presented in thousands of barrels of oil.

The last number is what I have determined to be the ultimate recovery from each respective well, and it is again presented in thousands of barrels of oil.

I'd like to point out on this exhibit that the offsetting wells to the subject location, that is the Shipp 27 No. 1 and the Shipp 34-A-1, have cumulative recoveries through 1981 of 349,000 and 224,000 barrels, respectively. Their ultimate recoveries I determined to be on the order of 500,000 barrels of oil. That leaves a remaining reserves of 157,000 barrels for the Shipp 27-1 and 271,000 barrels for the Shipp 34-A-1.

Looking at those remaining reserves, the average of those two reserve numbers, remaining reserves for the two offsetting wells, is 214,000 barrels, which later on I will use in my opinion conservatively to generate some economics associated with drilling a well at the proposed location.

Q. Okay. I'd now ask you to refer to what's been marked as Exhibit Number Ten and ask you to explain it.

A. Yes, sir. Exhibit Number Ten is a cost estimate of the cost to drill and complete the well in the Casey-Strawn Field. I would like to mention, as Ms. Lebow mentioned earlier, the drilling costs have been reduced substantially in the last several months, and this is reflected in this cost estimate.

The cost to -- the cost associated with drilling and completing a well in the Casey-Strawn Field we have estimated to be just under $1-million.

Q. And I believe you testified that the reason for this is that drilling costs have decreased substantially in recent months.

A. Yes, sir, that is true. I think that Ms. Lebow mentioned something on the order of $1.3-million. Our original estimate on some work that we've done out there is also on the order of $1.3-million, but as the drilling activity has slowed down, an operator does no longer have to pay in most instances move-in costs and the actual cost of drilling has been reduced substantially; in some cases almost half.

Q. I think it's Ms. Lebow.

A. I'm sorry, Ms. -- what did I say?

Q. Lobo.

A. I'm sorry.

Q. I'd now ask you to refer to what's been marked Exhibit Number Eleven and identify that, please.

A. Yes, sir. Exhibit Number Eleven are some economics that I have generated after Federal income tax for a well at the proposed location. I've indicated here what I've estimated to be the tangible drilling costs, the intangible drilling costs, and then the reserves that I spoke to when I talked about my first exhibit of the average of the two offsetting remaining reserves, offsetting wells' remaining reserves of 214,000 barrels.

I have conservatively assumed that the lifetime GOR for a well out there will be 1000 cubic feet per barrel and then the -- therefor the associated gas reserves ends up being on the order of 214-million cubic feet.

From decline curve analysis I have determined that the project life for these reserves will be on the order of 24 years and plugging into our economics, the economics generated from these drilling costs and associated reserves results in a payout of 2.11 years; a present worth net profit of over $2-million; a present worth index of 3.11 and a discounted cash flow rate of return of just over 46 percent.

These are good economics for a well at this depth and this is very much a drillable location.

Q. Now I believe, Mr. Woliver, you stated that

in your opinion as a petroleum reservoir engineer the estimate of 214,00 recoverable barrels of oil underlying the proposed location is conservative.

A. Yes, that is my opinion.

Q. And the reason that you believe this estimate to be a conservative one is because of the information ascertained from the two direct offset wells.

A. Yes, it becomes conservative because it assumes any oil prior to -- prior to now has been drained. In other words, we're just looking at the remaining reserves out there.

Q. If, and I assume to some extent C & K must agree with you or they wouldn't be proposing to drill the well at the location, if things are as you represent them to be, what is your opinion about the recoverable reserves under an offset well drilled directly to the west of the proposed location with a west half southwest quarter dedicated to such a well?

A. Well, first of all, I would like to say that at this time it is -- I would not like to speculate to the amount of reserves that I could assign to a well in the west half of that quarter section until the drilling of the well in the east half, or at the proposed location.

Upon drilling the well at the proposed loca-

tion, if it came in as good or not even as good as the other wells in the area of the field, and maintained that production similar to the wells out there, currently out there, then I would have no problem in recommending to my management that we need to drill a well to the west. So it would be a drillable location, also.

Of course that is based on the proposed location, a well at the proposed location, being -- coming in relatively -- relatively good.

Q. You heard Mr. Horvath's testimony. Do you agree that a well drilled at the proposed location will have difficulty draining reserves underlying the southwest of the southwest in Section 27?

A. Just a second, the southwest of the southwest, yes.

Q. Why?

A. First of all, as Mr. Horvath has indicated and shown in his -- in his structural interpretation, which I believe the geologist with C & K will agree, that you move up dip as you move to the west of the proposed location. I, personally, do not know how you can drain oil up dip from a well down dip completely. I don't know how you can do that, and therefor, in my opinion a well in the east half of the subject quarter section cannot drain the area of the

west half of that quarter section if indeed, to the extent that a second well can, if indeed the drilling of the proposed well gives us an indication that we do have productivity over in that part of the field.

I would like -- I would like to point out that this is a strange field and very hard to say what's going to be a good location and what is not going to be a good location, but I think there's several examples where you -- it gives you the indication that you should not disqualify acreage until you have drilled a well on there.

A perfect example is the C & K Petroleum 34-A-2. It is directly offset by a dry hole in the Strawn and it is a well that I have figured will -- it has currently put into the tanks 200,000 barrels of oil, and I figured the ultimate for that well on the order of a half -- just over a half a million barrels of oil, and it is directly offset to a dry hole.

Q. Is it your opinion that denying of -- that the denial of C & K's application in Case 7730 and the granting of Texaco's application in Case Number 7762, is in the interest of the prevention of waste and protection of correlative rights?

A. Yes, it is.

Q. Were Exhibits Nine through Eleven prepared

by you or under your supervision?

A. Yes, they were.

MR. LOPEZ: At this time I would like to offer Texaco Exhibits Nine through Eleven.

MR. RAMEY: Exhibits Nine through Eleven will be admitted.

MR. LOPEZ: I guess I might as well also offer Exhibit Nine-A.

MR. RAMEY: Exhibit Nine-A, whatever condition it's in, will be admitted.

Any questions of the witness?

MR. LOPEZ: I have no further questions.

MR. KELLAHIN: Mr. Woliver, it pains me, but I don't have any questions.

MR. RAMEY: The witness may be excused.

Do you have anything further in this case?

MR. LOPEZ: No, Mr. Ramey.

MR. RAMEY: Do you have statements you want to make? Mr. Woliver, you may be excused.

MR. LOPEZ: As the Commission is well aware, it is delegated the duty of administering the statutes for the prevention of waste and the protection of correlative rights.

I believe that the testimony here today has

amply demonstrated that if C & K's application is -- for an orientation of the south half laydown unit in the southwest quarter of Section 27 is granted, that because of the varying mineral interest ownership in the southwest quarter of Section 27, that to alter the proration units to stand-up eighties would virtually be impossible.

I think the evidence has shown that there is indeed existing potential reservoir production underlying at least a substantial portion of the north half of Section 27 that would not be drilled at a standard location if the proration units were going in as laydowns.

I think that it is clear from C & K's testimony that they feel compelled to disregard the correlative rights of the interest owners in the north half quarter -- north half of the southwest quarter, as well as disregarding the waste that would ensue therefrom in order to protect their own interests in the offsetting acreage to the south of the southwest quarter of Section 27.

I believe that the evidence has shown that the Casey-Strawn Field is indeed a strange field; that the practice has been to reorient the 80-acre proration units from liedown to stand-up; that there does indeed exist in the section to the south an occasion that is quite similar to the one at hand, where there is an 80-acre proration unit

dedicated to a producing well where to the south of it in the same proration unit there exists a dry hole.

I believe that the Commission really has no alternative but to keep the door open for an offset well to be drilled offsetting the proposed location.

Texaco has stated that it is ready, willing, and able, and Yates has assured us the Commission should receive written assurances very shortly, that they will join in the well that Texaco would propose to drill at the proposed location, except that we would dedicate the east half of the southwest quarter rather than the south half.

Aside from that I can't amplify much on the proposal presented here today.

MR. RAMEY: Thank you, Mr. Lopez.

Mr. Kellahin?

MR. KELLAHIN: Mr. Chairman, at some point in the afternoon one of the Texaco witnesses said that Texaco's correlative rights were going to be damaged if this was oriented to the south half as opposed to the east half, and I have waited patiently all afternoon to find out how their correlative rights were going to be damaged, and I have yet to hear it.

I think this is as easy a case as you're going to see. What Texaco wants us to do is to take acreage

that they admit that they don't want to drill; that a portion of which is condemned by a dry hole; that want us to take that acreage, that nonproductive acreage that's already been condemned, and assign it a value so that they can participate in the production derived from this well.

I think that's outrageous. Mr. Latham has sat patiently by all these years waiting for somebody to develop his acreage. The evidence of both geologists here support the proposition that the best acreage is in the south half of the southwest quarter. It doesn't matter to C & K, their interest doesn't change however you turn it, but I think it's a fundamental error to take nonproductive acreage when there is available productive acreage that can be dedicated to this well.

We've established for you that one well is certainly capable, using the most conservative values as an engineer, to drain an 80-acre proration unit. If I understand Texaco's position, they think we may be structurally low in our location. That doesn't justify putting north half acreage into this proration unit. It might require us to come back and drill a second well in the south half after we've completed the first well. Why should they have a bigger share when all they have to do is to give us acreage that has already been condemned? I believe the answer is clear. They have no right,

their correlative rights are not damaged.

We ought to be allowed to drill the south half and dedicate that as a proration unit to this well.

Thank you.

MR. RAMEY: Thank you, Mr. Kellahin.

Does anyone have anything further to add in Case 7730?

If not, we'll take the case under advisement and the hearing is adjourned.

(Hearing concluded.)

# C E R T I F I C A T E

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

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