

1 STATE OF NEW MEXICO
2 ENERGY AND MINERALS DEPARTMENT
3 OIL CONSERVATION DIVISION
4 STATE LAND OFFICE BLDG.
5 SANTA FE, NEW MEXICO

6
7
8 10 October 1985

9 EXAMINER HEARING

10 IN THE MATTER OF:

11 Application of TXO Production Cor- CASE
12 poration for compulsory pooling, 8719
13 Lea County, New Mexico.

14 Application of Pennzoil Company CASE
15 for compulsory pooling, Lea County, 8727
16 New Mexico.

17 BEFORE: Gilbert P. Quintana, Examiner
18
19

20 TRANSCRIPT OF HEARING

21 A P P E A R A N C E S

22 For the Division: Maryann Lunderman
23 Attorney at Law
24 Legal Counsel to the Division
25 Energy and Minerals Dept.
Santa Fe, New Mexico 87501

For the Applicant: David R. Vandiver
Attorney at law
DICKERSON, FISK & VANDIVER
Seventh and Mahone, Suite E
Artesia, New Mexico 88210

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For Pennzoil Co.:

W. Thomas Kellahin
Attorney at Law
KELLAHIN & KELLAHIN
P. O. Box 2265
Santa Fe, New Mexico 87501

For Texaco, Inc.:

Ken Bateman
Attorney at Law
WHITE, KOCH, KELLY & McCARTHY
220 Otero Street
Santa Fe, New Mexico 87504

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REPORTER'S NOTE: This hearing is a continuation of Docket Number 30-85 which is held on 10 October 1985.

MR. QUINTANA: Good morning.
We'll continue the hearing for Docket Number 30-85.

This morning we're going to call two cases and consolidate them for purposes of testimony.

We'll call this morning Case 8719 and Case 8727.

MS. LUNDERMAN: Case 8719, application of TXO Production Corporation for compulsory pooling, Lea County, New Mexico.

Case 8727, application of Pennzoil Company for compulsory pooling, Lea County, New Mexico.

MR. QUINTANA: Are there appearances in this case?

MR. VANDIVER: Mr. Examiner, my name is David Vandiver, Dickerson, Fisk, and Vandiver, Artesia, New Mexico, and I'm appearing on behalf of the applicant, TXO Production Corporation.

I'll have at least three and possibly four witnesses.

MR. QUINTANA: Are there other

1 appearances in the case?

2 MR. KELLAHAN: If the Examiner
3 please, I'm Tom Kellahan of Santa Fe, New Mexico, appearing
4 on behalf of Pennzoil Company, and I anticipate that I'll
5 have three witnesses.

6 MR. QUINTANA: Are there other
7 appearances besides these?

8 MR. BATEMAN: Mr. Examiner, I'm
9 Ken Bateman, White, Koch, Kelly, and McCarthy, appearing on
10 behalf of Texaco.

11 MR. QUINTANA: Any witnesses?

12 MR. BATEMAN: No.

13 MR. QUINTANA: Will all witnes-
14 ses stand at this time and be sworn in?

15

16 (Witnesses sworn.)

17

18 MR. VANDIVER: Mr. Examiner,
19 there is a mistake in the publication in Case 8719.

20 It describes in two places
21 southwest quarter northeast quarter of Section 4, Township
22 17 South, Range 37 East, and it should be southeast quarter
23 northeast quarter of Section 4.

24 That's on the third line and
25 the sixth line and then elsewhere in the publication it cor-

1 rectly describes east half northeast quarter.

2 MR. QUINTANA: That is correct?

3 MR. VANDIVER: Yes, sir.

4 MR. QUINTANA: It will have to
5 be readvertised, then, but we'll go ahead and hear testimony
6 and (inaudible.)

7 MR. KELLAHIN: Mr. Examiner, a
8 comment on behalf of my company with regards to the typo-
9 graphical error. It is obviously a typographical error. We
10 certainly were not confused by that error. We intend to --
11 we want to present our case today and not have to come back
12 on the 23rd of October, so we'd like to hear both cases to-
13 day and come back.

14 MR. QUINTANA: We'll do that
15 and we'll still readvertise it and I will -- I will recall
16 it again in October just in case there's somebody else that
17 wishes to present something.

18 If you present all your testi-
19 mony today, that will be fine and you will not have to re-
20 turn. We'll just leave the docket open.

21 Mr. Vandiver, you may proceed.

22 MR. VANDIVER: Thank you, sir.

23

24

25

1 JEFF A. BOURGEOIS,
2 being called as a witness and being duly sworn upon his
3 oath, testified as follows, to-wit:
4

5 DIRECT EXAMINATION

6 BY MR. VANDIVER:

7 Q Would you state your name, please, sir?

8 A My name is Jeff Bourgeois.

9 Q And what's your occupation and by whom are
10 you employed, Mr. Bourgeois?

11 A Petroleum landman with TXO Production
12 Corporation.

13 Q You testified before the Oil Conservation
14 Division yesterday, is that correct?

15 A Yes.

16 Q And your qualifications as a petroleum
17 landman were accepted at that time?

18 A Yes, they were.

19 MR. VANDIVER: I would tender
20 Mr. Bourgeois as an expert petroleum landman, Mr. Examiner.

21 MR. QUINTANA: Yes, he's con-
22 sidered an expert petroleum landman.

23 Q Mr. Bourgeois, you're familiar with the
24 application in Case 8719?

25 A Yes, I am.

1 Q What is the nature and purpose of TXO
2 Production Corporation's application?

3 A TXO seeks in this order an order pooling
4 all mineral interests from the surface to the top of the
5 Strawn formation to form a standard 40-acre proration unit
6 in the southeast quarter of the northeast quarter of Section
7 4, Township 17 South, Range 37 East, and also to pool our
8 mineral interest from the top of the Strawn formation
9 through the base of the Strawn formation to form a standard
10 80-acre proration unit, being the east half of the northeast
11 quarter.

12 I'd like to point out that this 80-acre
13 proration unit is considering the case of Pennzoil Company
14 heard before the Examiner on September 11th for new field
15 rules to be dedicated to their proposed Shipp Strawn Field,
16 taking that into consideration.

17 Also we wish to have considered the cost
18 for drilling and completing TXO's Grisso No. 1 Well, the TXO
19 Grisso No. 1 Well, and seeks charges for supervision, desig-
20 nation of TXO as operator, and a charge for risk involved in
21 drilling this well.

22 Q What is the location of TXO's proposed
23 Grisso No. 1 Well?

24 A TXO's location is 2310 feet from the
25 north line and 660 from the east line of Section 4.

1 Q You referred earlier to the special pool
2 rules sought by Pennzoil and that was in Case 8696, is that
3 correct?

4 A Yes, I believe that is the proper case
5 number.

6 Q And as far as you know, no order has been
7 entered in that case, is that correct?

8 A Not to my knowledge.

9 Q And the purpose of TXO's application in
10 this case is to pool in addition from the surface to top of
11 the Strawn, to also pool the Strawn formation with respect
12 to the southeast quarter northeast quarter in the event the
13 special pool rules are not adopted.

14 A Yes, that would be correct.

15 Q Mr. Bourgeois, if you will refer to
16 TXO's, what's been marked for identification as TXO's Exhi-
17 bit Number One, and describe for the Examiner what that is.

18 A Exhibit Number One is a land plat showing
19 the proposed location of the Grisso No. 1 Well circled in
20 red. The proposed 80-acre proxation unit is outlined in
21 yellow.

22 Q And what the objective depth of your pro-
23 posed well?

24 A Projected depth is to test the Strawn
25 formation at approximately 11,500 feet.

1 Q Are there any other Strawn, any other
2 wells producing from the Strawn formation in proximity to
3 your proposed location?

4 A Yes. Pennzoil's Vierson No. 1 Well, lo-
5 cated in the northeast quarter southeast quarter of the same
6 section.

7 Q Do you know the location of that well?

8 A Yes, sir. I believe that is 2130 feet
9 from the south line and 660 feet from the east line.

10 Q Mr. Bourgeois, if you would refer to Ap-
11 plicant's Exhibit Number Two and describe what that is.

12 A Exhibit Number Two are copies of corres-
13 pondence to the working interest owners and mineral interest
14 owners in the northeast quarter of Section 4, seeking their
15 participation or lease to support our Grisso No. 1 Well.

16 Q By the way, if I could ask you, Exhibit
17 Number One was prepared by you or under your direction and
18 supervision?

19 A Yes, it was.

20 Q And Exhibit Number Two consists of let-
21 ters prepared by you --

22 A Yes.

23 Q -- or under your direction and supervi-
24 sion.

25 What interest does TXO Production Corpor-

1 ation own in the east half northeast quarter of Section 4?

2 A The interest appears to be roughly 6.2
3 percent.

4 Q Does TXO control any other interest in
5 that 80-acre tract?

6 A TXO has an agreement with the APCOT-FINA-
7 DEL Joint Venture to where when we go buy leases and new
8 prospects, APCOT-FINADEL has a right to purchase an assign-
9 ment of 25 percent of that leasehold, so TXO/FINA interest
10 in this tract would be a little over 8 percent and we have
11 in seeking the participation of working interest and mineral
12 interest owners of this tract have run across a situation
13 where one or two parties have consented to our location and
14 many other parties are sitting on the fence, if you will,
15 awaiting the outcome of this hearing.

16 Q So there's -- there's another --

17 A Yes.

18 Q -- proposed location in the 80-acre
19 tract?

20 A Yes.

21 Q And there are there are other interest
22 owners in that 80-acre tract who have not agreed to pool
23 their interest.

24 A This is correct.

25 Q And there -- they haven't refused, is

1 that correct? They haven't refused to join; they're just
2 awaiting the outcome?

3 A Some have not refused to join, while
4 others, in the obvious case, Pennzoil is in support of their
5 proposed location.

6 Q If you could refer to what's been marked
7 for identification as TXO's Exhibit Three and describe what
8 that is.

9 A Exhibit Number Three is a copy of TXO's
10 proposed Authority for Expenditure for drilling and
11 completing of our Grisso No. 1 Well.

12 Dry hole costs are roughly \$450,000.
13 Total completed well costs are estimated at \$715,200.

14 Q And was that exhibit prepared by you or
15 under your direction and supervision?

16 A Yes.

17 Q Have you -- has TXO Production
18 Corporation drilled other wells in the vicinity of your
19 proposed location?

20 A Yes, we have.

21 Q And are these costs in line with the
22 costs incurred in your other -- drilling your other wells?

23 A Yes, they are, and we feel this is a
24 reasonable estimate of the cost to drill this well.

25 Q Was this AFE the same AFE that was

1 submitted to the other interest owners to this tract?

2 A No, I'd like to point out at this time
3 that TXO's Drilling Department, effective September 1st of
4 this year, has gone to taking drilling contract bids on a
5 footage basis as opposed to a day work basis, and also have
6 had become available to them increased casing program dis-
7 counts. These discounts and lower rates are reflected in
8 the -- this revised AFE, if you will, and therefore the ori-
9 ginal AFE used, total completed well costs were \$797,700 and
10 with the revised AFE the new completed well costs, as pre-
11 viously stated, are estimated at \$715,200.

12 Q If I could refer you, Mr. Bourgeois, to
13 what's been marked for identification as TXO's Exhibit Num-
14 ber Four and ask you what that is?

15 A Exhibit Number Four is a copy of TXO's
16 proposed operating agreement to cover the operations for the
17 drilling and completing and producing of our Grisso No. 1
18 Well, and the Examiner should please refer to Exhibit C, the
19 COPAS accounting procedure, on page three we are requesting
20 overhead rates to be \$5374 for a drilling well rate per
21 month, and \$538 per month for producing well rates.

22 Q What's the basis for those rates, Mr.
23 Bourgeois?

24 A We feel these rates are acceptable and
25

1 have used rates similar to this in the past and had all par-
2 ties under the operating agreement consent to these, and al-
3 so these rates are the rates assigned to this depth of well
4 by our Dallas Accounting Department.

5 Q If I could refer you to TXO's Exhibit
6 Number Five and have you describe for the Examiner what that
7 is?

8 A Exhibit Number Five is an interoffice me-
9 morandum circulated by our Dallas Accounting Department and
10 the overhead rates to be used in contracts generated from
11 April 1, '85 forward.

12 Our district is the West Texas District.
13 In the depth interval from 4000 to 12,000 feet the rates are
14 set out as requested at \$5,374 drilling and \$538 for produc-
15 ing well rates.

16 Q What's the basis of that interoffice me-
17 morandum?

18 A It's to give the district offices guide-
19 lines as to the overhead rates to be used in contracts.

20 The COPAS, Council of Petroleum Account-
21 ant Societies, has approved these rates and has approved a
22 2.7 percent increase in overhead -- for overhead rates in
23 effect for contracts dated prior to April 1 of 1985, and so
24 these rates we are requesting are 2.7 percent higher than
25 our previous year's figures.

1 Q And if I could refer you to TXO's Exhibit
2 Number Six and ask you what that is?

3 A Exhibit Number Six is a copy of an oper-
4 ating agreement in which TXO drilled its Cambridge Royalty
5 Company No. 1 Well, a Strawn test to a objective depth of
6 11,500 feet. This well was drilled in November and December
7 of 1984, and the overhead rates used in this contract are
8 2.7 percent less than the rates we are requesting, and on
9 the signature pages in this contract it will show the par-
10 ties that consented to these rates.

11 Q And have the rates proposed by TXO Pro-
12 duction Corporation also been accepted by the New Mexico Oil
13 Conservation Division in other cases?

14 A Yes, they have. In a recent case pre-
15 sented before the Examiner on September 11th, we requested
16 these identical rates for a well in the same 4000/12,000
17 foot interval and the rates were approved as requested in
18 Orders No. 4-8043, dated October 3rd, 1985.

19 MR. VANDIVER: I'd ask the Exa-
20 miner to take notice of that order.

21 Q Mr. Bourgeois, I'd like to refer you to
22 what's been marked for identification -- first of all, ex-
23 cuse me, could I ask, were Exhibits Four, Five, and Six pre-
24 pared by you or under your direction and supervision?

25 A Yes.

1 Q Now if I could refer you to what's been
2 marked for identification as Applicant's Exhibit Number
3 Seven and ask you what that is.

4 A Exhibit Number Seven is a copy of TXO's
5 Application for a Permit to Drill, dated August 26th, 1985.

6 This application for a permit to drillw
7 as approved by the Oil Conservation Division's office in
8 Hobbs, New Mexico, on August 26th, 1985.

9 The application reflects our location and
10 proposed depth for the Grisso No. 1 Well.

11 Q And you did testify it was filed and ap-
12 proved August 26th, is that --

13 A Yes, I believe --

14 Q -- correct?

15 A -- copies submitted are stamped approved
16 by Jerry Sexton of the OCD office in Hobbs, New Mexico.

17 Q You have notified the other interest own-
18 ers of this hearing, is that correct?

19 A Yes, we have.

20 MR. VANDIVER: If I could have
21 a moment, Mr. Examiner, I have not marked the affidavit of
22 mailing.

23 Mr. Examiner, I'm getting my
24 exhibits out of order but this is one I haven't submitted to
25 you.

1 Q Mr. Bourgeois, if I could hand you what's
2 been marked for identification as Applicant's Exhibit Number
3 Fourteen and ask you what that is.

4 A Exhibit Number Fourteen is an affidavit
5 of mailing prepared by the offices of Dickerson, Fisk, and
6 Vandiver, to reflect that a copy of TXO's application in
7 this case has been mailed to the parties listed on this af-
8 fidavit notifying all parties of this hearing.

9 Q Do you have anything you wish to add to
10 your testimony?

11 A No, not at this time.

12 MR. VANDIVER: Mr. Examiner, I
13 would move the admission of Exhibits One through Seven and
14 Exhibit Fourteen as evidence in this case.

15 MR. QUINTANA: Exhibits One
16 through Seven and Exhibit Number Fourteen will be accepted
17 as evidence.

18 MR. VANDIVER: And I'll pass
19 the witness.

20 MR. QUINTANA: Mr. Kellahin?

21 MR. KELLAHIN: Thank you, Mr.
22 Quintana.

23

24

25

CROSS EXAMINATION

1
2 BY MR. KELLAHIN:

3 Q Mr. Bourgeois, if you'd refer to your Ex-
4 hibit Number One, sir, I'd like to ask you some questions
5 about what is taking place in the immediate area.

6 I note on your Exhibit Number One you've
7 outlined in yellow the east have of the northeast quarter,
8 which is the 80-acre spacing unit that's in question.

9 Am I correct in understanding, sir, that
10 both you and Pennzoil are in agreement about the orientation
11 of that spacing unit if the Commission adopts 80-acre spac-
12 ing?

13 A Yes, it is my understandxng that we are
14 in agreement.

15 Q All right. When we look to the -- what
16 has been characterized in the hearing 8696 as the Shipp
17 Strawn Pool, the discovery well was the Pennzoil Viersen No.
18 l Well, was it not?

19 A That's correct.

20 Q All right. Approximately where is that
21 well located when we look at Exhibit Number One?

22 A Okay, Exhibit Number One, you refer to,
23 it is marked on this exhibit as a black dot, the number one
24 to the right. It might be difficult to read but that's the
25 Pennzoil Viersen, and as I stated earlier, I believe its lo-

1 cation to be 2130 feet off the south line and 660 feet off
2 the east line.

3 Q All right. What is your understanding,
4 Mr. Bourgeois, about the spacing or proration unit that is
5 to be dedicated to the Viersen No. 1 if 80-acre spacing is
6 adopted?

7 A It is my understanding that the 80-acre
8 proration unit to be dedicated to the Pennzoil Viersen No. 1
9 will be the east half of the southeast quarter of the same
10 section.

11 Q When we look at the northeast quarter of
12 Section Number 5, regardless of what the spacing is for that
13 160 acres, is that ownership undivided for the whole 160?

14 A Yes.

15 Q We have the same individuals shown in the
16 east half as in the west half with the same percentages?

17 A To my knowledge that's correct, yes.

18 Q All right. One of the differences that
19 you described for us between Pennzoil and TXO is a differ-
20 ence about well location for the well in the east half of
21 the northeast quarter, is that correct?

22 A Yes.

23 Q Your location is in the south 40 and
24 Pennzoil's proposed location is in the north 40 of that
25 unit.

1 A Uh-huh.

2 Q All right. So that we talk about the
3 well names consistently --

4 A Okay.

5 Q -- yours is the Grisso No. 1, is that
6 correct?

7 A Right.

8 Q And Pennzoil as referred to their well
9 location as the Shipp No. 2, I believe, is that correct?

10 A Yes, the B. E. Shipp Estate No. 2.

11 Q All right. Now, Mr. Bourgeois, is there
12 to be a B. -- I forgot all the letters -- Shipp No. 1 Well
13 somewhere?

14 A Yes. That location, as proposed by Penn-
15 zoil, is located 1980 feet from the north line and 1980 feet
16 from the east line of Section 4.

17 Q All right, the B. E. Shipp No. 1 Well by
18 Pennzoil, then, would be in the west half of the northeast
19 quarter.

20 A That's correct.

21 Q And within that west half, then, it will
22 be in the south forty.

23 A Correct.

24 Q Has TXO consented or agreed to join Penn-
25 zoil in Pennzoil'd drilling and operation of that Shipp No.

1 1 well?

2 A Yes, we have executed their AFE and re-
3 turned it to their office.

4 Q You have described for us in your testi-
5 mony, Mr. Bourgeois, some cost numbers and you've given us a
6 revised AFE of about \$715,000 for a completed Strawn well.

7 A That's correct.

8 Q How does that number compare with the
9 costs of the Viersen No. 1 Well that Pennzoil drilled?

10 A I do not know.

11 Q How does that cost number compare to the
12 proposed cost for the B. E. Shipp No. 1 Well?

13 A It is -- they are not identical but there
14 is a reasonable proximity, if you will. I have their AFE, I
15 believe, in my briefcase.

16 Q On behalf of your company, Mr. Bourgeois,
17 is there a dispute between the operators that is focused on
18 the cost of the Strawn wells?

19 A Not to my knowledge. No one has raised a
20 beef about the estimated cost of either AFE.

21 Q So the cost is not what we're here to re-
22 solve.

23 A That's right.

24 Q With regards to the operating agreement,
25 you have given us a proposed operating agreement that's your

1 Exhibit Number Four.

2 Have you received from Pennzoil an oper-
3 ating agreement for the well that they have proposed in the
4 east half of the northeast quarter?

5 A Yes, I have.

6 Q Are there any material differences be-
7 tween the operators over the proposed operating agreement?

8 A There are numerous additional provisions
9 in each operating agreement and I think that once an opera-
10 tor is designated, the differences, we'll be able to work it
11 out.

12 There's a -- Pennzoil's a rather lengthy
13 discussion that I have been informed was requested by an-
14 other non-operating party, and TXO's additional provisions
15 are standard, in that we tried to have them incorporated in-
16 to all our operating agreements that we prepare.

17 Q All right. So you don't anticipate that
18 we need the Division to resolve this case in terms of the
19 differences in the proposed operating agreements.

20 A That's correct.

21 Q All right. When we look at the overhead
22 charges, Mr. Bourgeois, is there a material difference be-
23 tween the two operators over what each proposes to charge
24 for overhead charges?

25 A The difference in Pennzoil's overhead re-

1 requested rates are \$5500 a month, drilling well rate, and
2 \$550, producing well rate, so it's not a big difference.

3 Q The principal difference, then, as it ap-
4 pears, is a difference of opinion as to where the well ought
5 to be located.

6 A That's part of the principal difference.
7 The principal difference is twofold, I believe.

8 TXO wishes to have the east half north-
9 east location drilled at our proposed location and TXO also
10 seeks to be designated as operator.

11 Q Let's talk about TXO's experience in the
12 area, Mr. Bourgeois. Does TXO operate any Strawn wells
13 within the area shown on your Exhibit Number One?

14 A As far as current operations, no, I don't
15 believe so.

16 Q The operating agreement that you referred
17 to as a comparison was the Cambridge Strawn Well you have
18 over in Township 16 South, 35 East. I believe it's your Ex-
19 hibit Number Six.

20 A Okay.

21 Q Is that your closest Strawn well that TXO
22 operates to this area?

23 A Just give me a minute and I'll try to run
24 it through.

25

1 I believe it is.

2 Q Can you approximate for us, Mr. Bour-
3 geois, how far this Cambridge Strawn Well is from the sub-
4 ject acreage?

5 A Two townships to the northwest, 16, 35,
6 as opposed to 17, 37.

7 Q Your correspondence, which is marked and
8 has been introduced as Exhibit Number Two, Mr. Bourgeois,
9 you referred in your direct testimony to the fact that TXO's
10 interest in the east half of the northeast quarter was ap-
11 proximately 6.2 percent. Does that represent TXO's interest
12 in that spacing unit prior to August 23rd, '85, which is the
13 date of your first letter here in Exhibit Two?

14 A Yes, I -- we have not picked up any new
15 leases since that date. We have -- are in the process of
16 negotiating one but have not received an executed lease.

17 Q Does this August 23rd, '85 date come be-
18 fore or after the completion of the Pennzoil Vierson No. 1
19 discovery well?

20 A I believe that would come after the com-
21 pletion date. I do not know the reported completion date
22 but I believe this is shortly afterwards.

23 Q Does the August 23rd, '85 correspondence
24 represent TXO's first efforts to form a voluntary unit for
25 the east half of the northeast quarter by acquiring addi-

1 tional leases, farmouts, or participation?

2 A Yes, it does.

3 Q Is the arrangement between TXO and APCOT-
4 FINADEL one that was in existence prior to August 23rd of
5 '85?

6 A Yes.

7 Q Do you have an opinion as to whether or
8 not TXO and APCOT-FINADEL would have had consistent posi-
9 tions with regards to TXO's operation of this proposed well
10 prior to August 23rd of '85?

11 A If I understand your question, APCOT-
12 FINADEL usually goes along with what TXO proposes, although
13 they do have the option to go nonconsent in the event that
14 we're under an operating agreement.

15 Q In your opinion, then, would APCOT-
16 FINADEL have participated in TXO's position prior to efforts
17 to get others to join your position? You control that in-
18 terest or by agreement have their participation.

19 A Like I said, they will have the option to
20 go nonconsent but they usually -- they -- they do go along
21 with us.

22 Q All right. When we combine the APCOT-
23 FINADEL interest and the TXO interest, we have approximately
24 8 percent interest at this point that supports TXO's opera-
25 tion of the proposed well?

1 A That is correct as to the interest of TXO
2 and APCOT-FINADEL.

3 We have since received correspondence
4 from SOHIO Petroleum Corporation, interest of an undivided
5 6.25 percent underlying the whole northeast quarter, and
6 they have corresponded with us to the fact that they support
7 our location.

8 Q With regards to the location, then, you
9 have support from SOHIO, which is about 6.25 percent. Do
10 you have support from any other working interest owners in
11 the spacing unit that support your location?

12 A As far as signed AFE's back in my office,
13 there's an additional interest, let's say one percent, and
14 the remaining interest I have been in contact with, the maj-
15 ority of them are, like I said earlier, just sitting on the
16 fence awaiting the outcome of this hearing so as not to put
17 a cloud on their interest.

18 Q Has SOHIO signed your AFE?

19 A No, we did not receive it back in our of-
20 fice signed. The Federal Express letter was received Tues-
21 day morning, October 8th, in our office in Midland, Texas,
22 indicating their support of our location.

23 Q Do you have correspondence from any other
24 working interest owners that -- that supports your interest
25 without committing themselves to a signed AFE or an operat-

1 ing agreement?

2 A I do have other pieces of correspondence
3 from other parties but none that would explicitly put them-
4 selves in favor of our location as opposed to Pennzoil's
5 proposed location.

6 Q The one percent interest you identified
7 just now, can you give a name to that one percent interest?

8 A Yes. We received a signed AFE, and if
9 you'll give me a second I can state the name correctly.

10 It's Mr. G. H. VanZant.

11 Q VanZant. Mr. Bourgeois, have you submit-
12 ted Exhibit Four, which is TXO's operating agreement or pro-
13 posed operating agreement for this well, have you submitted
14 that to the working interest owners and to Pennzoil?

15 A No, I haven't. They were furnished with
16 the AFE and letters, correspondence indicating, should they
17 approve this location, please return the signed AFE and we
18 will forward an operating agreement for their review and ex-
19 ecution.

20 Q Have you received on behalf of TXO a pro-
21 posed operating agreement from Pennzoil for this well?

22 A Yes, I have for their -- not for this
23 well, no, sir.

24 Q For their B. E. Shipp No. 2?

25 A Yes.

1 Q You testified early in your direct exami-
2 nation, Mr. Bourgeois, about the spacing case that the Divi-
3 sion heard back in September and that pursuant of that spac-
4 ing case you have made application in the alternative,
5 either for a 40-acre spacing unit or the 80-acre unit we've
6 been discussing.

7 Has TXO taken any position for or against
8 80-acre spacing for this Shipp Strawn Pool?

9 A No, we had no opposition to this case
10 when presented.

11 Q All right. Is your company -- is your
12 company willing to consent, then, in the development of this
13 Strawn Pool on 80-acre spacing?

14 A Yes, we are.

15 Q Thank you.

16 MR. KELLAHIN: Nothing else,
17 Mr. Quintana.

18

19

CROSS EXAMINATION

20 BY MR. QUINTANA:

21 Q Mr. Bourgeois, what is the location of
22 that B. E. Shipp No. 2 Well?

23 A B. E. Shipp No. 2, I believe, is going to
24 be 660 feet from the north line and 810 feet from the east
25 line.

1 Q And you stated so far you have SOHIO Pet-
2 roleum support of your location and that you're offered ap-
3 proximately one percent additional support?

4 A Yes.

5 Q But other than that everybody else is
6 just kind of waiting back to see what's going ot happen with
7 this hearing.

8 A With -- with the exception of Pennzoil,
9 of course, they're in support of their application.

10 Q What's the approximate percent of Penn-
11 zoil's interest in this?

12 A I believe their interest to be in the
13 neighborhood of 39 percent. I understand there are some
14 farm-in agreements, and such, that Pennzoil has negotiated.

15 Q You also stated Exhibit Number Three,
16 which shows the AFE costs for the Grisso Well, the working
17 interest owners do not have a copy of this at this time?

18 A No.

19 Q The proposed (not clearly understood.)

20 MR. QUINTANA: I have no fur-
21 ther questions.

22 Does anyone have questions of
23 the witness?

24 MR. BATEMAN: Yes, I do.

25 MR. QUINTANA: Mr. Bateman?

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CROSS EXAMINATION

BY MR. BATEMAN:

Q Mr. Bourgeois, do you show an interest on behalf of Texaco Producing?

A Yes, Mr. Bateman, I do, and I have corresponded and conversed with the landman at Texaco's office in Midland, indicating that Texaco does support TXO's proposed location, subject to the approval of the partners in the East Lovington Unit, an operating agreement in effect between TXO -- I mean, excuse me, between Texaco and several other parties.

Texaco has consented to our location subject to the approval of these other parties.

Q What percentage interest do you show for Texaco?

A A little under one percent, I believe, is Texaco's undivided working interest in that northeast quarter.

And the East Lovington Unit's interest I believe to be, roughly, 16 percent.

Q When did you last speak or correspond with Texaco?

A I spoke with a landman at their office Tuesday morning, October 8th.

1 MR. BATEMAN: No further ques-
2 tions.

3 MR. QUINTANA: Are there fur-
4 ther questions of the witness?

5 MR. VANDIVER: Yes, sir, Mr.
6 Examiner.

7
8 REDIRECT EXAMINATION

9 BY MR. VANDIVER:

10 Q Mr. Bourgeois, you were asked about the
11 mineral ownership of the northeast quarter of Section 4, and
12 I believe you testified that the mineral ownership is common
13 throughout that quarter section?

14 A Yes.

15 Q Do you know about the mineral ownership of
16 the southeast quarter?

17 A Yes, I have seen it.

18 Q Is that mineral ownership common through-
19 out the southeast quarter?

20 A Is it -- the mineral interests are un-
21 divided underneath the southeast quarter.

22 Q Is the mineral ownership in the southeast
23 quarter common with the mineral ownership in the northeast
24 quarter of Section 4?

25 A No, it is not.

1 Q Is there any common ownership among the
2 mineral owners in the southeast quarter and the northeast
3 quarter?

4 A I do not believe so.

5 Q Mr. Bourgeois, if TXO's application is
6 granted in this case, do you believe there will be any non-
7 consenting working interest owners?

8 A It's hard for me to predict the reaction
9 of Pennzoil in this case. I believe I could say there are
10 numerous parties who are awaiting to join at either location
11 but at this time have not committed, and those parties, I'm
12 confident, will be prepared to join in participation in this
13 well.

14 As far as Pennzoil, I'm not sure of their
15 stance on this, on the case if TXO's successful.

16 Q If TXO's application is approved, do you
17 anticipate that TXO will be able to pick up more leasehold
18 interest in the northeast -- east half northeast quarter?

19 A Yes, I would, I would believe so.

20 Q You were asked about the Cambridge Strawn
21 well, which is reflected by TXO -- the operating agreement
22 which has been admitted as Exhibit Six. Does TXO operate
23 other Strawn wells in Lea County, New Mexico?

24 A I'm not sure that there are any other
25 Strawn wells; however, there are numerous other wells rang-

1 ing in depth from 5000 to the low of 13,000 feet.

2 Q How many wells at that depth did TXO Pro-
3 duction Corporation drill in 1984?

4 A In Lea County?

5 Q In Lea County, New Mexico?

6 A We have drilled, one, two, three, four,
7 five, six, as far as my immediate recollection goes, roughly
8 six, in 1984 to this depth or deeper.

9 Q And in 1985?

10 A Approximately two to at least this depth,
11 or deeper.

12 Q To reiterate your previous testimony, TXO
13 owns or controls 8 percent interest in the east half north-
14 east quarter, approximately?

15 A Yes, approximately.

16 Q And SOHIO, which owns 6.25 percent has
17 approved your location?

18 A Yes, they have.

19 Q And you have had a commitment from Mr.
20 VanZant, who owns an additional one percent?

21 A That's correct.

22 Q And subject to Texaco's approval from its
23 other --from the other parties with whom it is associated,
24 you anticipate you may have an additional sixteen percent?

25 A That's correct.

1 Q That will approve your location?

2 A Yes.

3 Q And what we're discussing today is who is
4 going to be appointed operator and who will -- which loca-
5 tion will be drilled in this 80-acre tract.

6 A This is correct.

7 MR. VANDIVER: I'll pass the
8 witness, Mr. Quintana.

9 MR. QUINTANA: Mr. Kellahin?

10 MR. KELLAHIN: Nothing further,
11 Mr. Quintana, at the present time.

12 MR. QUINTANA: Are there fur-
13 ther questions of the witness?

14 You may be excused at this
15 time.

16
17 ANDREW T. O'HARE,
18 being called as a witness and being duly sworn upon his
19 oath, testified as follows, to-wit:

20
21 DIRECT EXAMINATION

22 BY MR. VANDIVER:

23 Q Mr. O'Hare, for the record would you
24 state your name, occupation, by whom you're employed?

25 A My name is Andrew T. O'Hare and I'm a

1 petroleum geologist, employed by TXO Production in Midland.

2 Q You testified as an expert witness before
3 the Oil Conservation Division on October -- yesterday, Octo-
4 ber 8th, I believe?

5 A October 9th, yes.

6 Q October 9th, and your qualifications were
7 accepted at that time?

8 A Uh-huh.

9 MR. VANDIVER: I will tender
10 Mr. O'Hare as an expert petroleum geologist, Mr. Quintana.

11 MR. QUINTANA: He is considered
12 an expert.

13 Q Mr. O'Hare, are you familiar with TXO's
14 application in this case?

15 A Yes, I am.

16 Q And have you made a geologic study of the
17 area in question?

18 A Yes, I have.

19 Q If I could refer you to what's been mar-
20 ked for identification as TXO's Exhibit Eight and ask you to
21 describe that for the Examiner?

22 A Exhibit Number Eight is a production map
23 of the local area surrounding our proposed location.

24 In that area 28 total wells have been
25 drilled.

1 Of that 28, 8 wells were producing, or
2 are still producing in the Paddock formation.

3 22 of those 28 wells penetrated the Tubb
4 formation, and of that one is producing.

5 22 wells of that 28 penetrated the Drin-
6 kard formation and of that 7 are producing, or have pro-
7 duced.

8 And of that 28, 14 penetrated the Strawn
9 formation and of that 8 are producing.

10 I might state that in the production
11 books put out by the OCD the Getty State 1-U Well is listed
12 as Pennsylvanian but it is correlative with the Strawn for-
13 mation, so it's a Strawn producer. (Inaudible)

14 Q Mr. O'Hare, what's the distance of the
15 Pennzoil Viersen No. 1 from TXO's proposed location in this
16 case?

17 A It is approximately 840 feet. Directly
18 north.

19 Q Mr. O'Hare, if I could refer you to
20 what's been marked for identification as TXO's Exhibit Num-
21 ber Nine and ask you to describe that for the Examiner.

22 A Exhibit Number Nine is a structure map on
23 top of the Strawn formation.

24 The wells in pink are either currently
25 producing Strawn wells or wells that have produced from the

1 Strawn.

2 Five of the wells shown, of which are
3 four in the Casey Field in the northeast part of the dia-
4 gram, and one in the southwest part of the diagram, the
5 David Fasken Consolidated State No. 2, are considered econo-
6 mic producers, and at this point the Pennzoil Viersen No. 1
7 appears to be an economic well (not understood.)

8 The map demonstrates no structural clos-
9 ure and regional dip is generally to the east/northeast.

10 The Strawn reservoir is considered,
11 therefore, a pure stratigraphic trap.

12 Q If I could refer you to what's been mar-
13 ked for identification as TXO's Exhibit Number Ten and ask
14 you what that is.

15 A Exhibit Number Ten is a Strawn porosity
16 map with a cutoff of approximately 4 percent. Porosities in
17 excess or equivalent to that are shown to be contoured in
18 the wells that penetrated the Strawn formation.

19 The Strawn porosity thicks shown are con-
20 sidered to be algal mounds and on the map shown there are
21 generally two linear trends of these mounds which are ellip-
22 tical in shape and trend roughly northeast/southwest.

23 The Casey Field in the north -- north
24 half of Section 34 and the closure surrounding the Texaco
25 Carter No. 1 Well, and then the closure further south and

1 west surrounding the Getty Meyers No. 1 and the Getty 1-U,
2 Getty State 1-U No. -- the Getty State 1-U well, are the
3 first north strike of those elliptical mounds.

4 The second set starts in the northeast
5 with the Mesa Petroleum West Knowles No. 7, moving through
6 the Viersen, Pennzoil Viersen No. 1 discovery, and then fur-
7 ther south and west to the David Fasken Consolidated State
8 No. 2 Well.

9 I have drawn the porosity thick around
10 the Pennzoil Viersen No. 1 based on all available geologic
11 evidence and I may add that the porosity thick trends on
12 strike with the other algal mounds in the area and I may
13 further add that it is fairly optimistic, optimistic inter-
14 pretation.

15 Of course, this can be drawn in any shape
16 or fashion but I feel as if I've kept my interpretation to
17 regional geology.

18 Q Why do you say it's optimistic?

19 A The elliptic porosity thick could be
20 drawn to cover the entire section of Section 4 and Section 3
21 but due to the relative size of these porosity thicks in the
22 area shown on the map, and in the area surrounding this area
23 not shown on the map, I feel as if it is a conceivable size.

24 Q And what do you conclude from the infor-
25 mation contained in Exhibit Number Ten?

1 A I conclude that the porosity units are
2 very sporadic and disappear over very short distances, even
3 as close as one standard proration unit; therefore, there is
4 a good chance that our proposed location may have a much
5 thinner porosity interval or possibly none at all.

6 Q If I could refer you to what's been mar-
7 ked for identification as TXO's Exhibit Eleven, which is
8 your cross section A-A', and ask you to describe the infor-
9 mation contained in that exhibit?

10 A I've put it on the wall, and those of you
11 who can't see it from there, can look on it on the desk.

12 The cross section runs roughly northeast/
13 southwest and it trends through the David Fasken
14 Consolidated State No. 2 Well and the Read and Stevens
15 Blackmar No. 1, the Tipperary Oil and Gas Corp. John State
16 No. 4-1, the Pennzoil Viersen No. 1, and the Texaco Oil
17 Carter in the section just north.

18 The first four wells demonstrated trend
19 along that previously discussed northeast/southwest strike
20 of these algal mounds.

21 Porosity from a producing interval, pro-
22 ducing perfed intervals, are demonstrated by the pink and
23 cored -- I mean DST'ed intervals are demonstrated by the
24 green.

25 Now, as you can see, the David Fasken

1 State had a substantial porosity development, which I've
2 given 32 feet greater than or equal to 4 percent, which can
3 be (not understood) by each individual geologist.

4 And I've given the Read and Stevens and
5 Tipperary Oil and Gas wells no actual producing porosity,
6 and on my best estimate, Pennzoil Viersen No. 1 contains ap-
7 proximately 68 feet of 4 percent or greater, again each in-
8 terval in each individual interpretation.

9 The Texaco Production Corporation No. 1
10 Carter, though it appears to demonstrate porosity, had no
11 shows and gave up no fluids when we drilled that well;
12 therefore, due to the (not understood) in the caliper log, I
13 consider this to be (not clearly understood) density log to
14 indicate porosity which is really not (inaudible).

15 Therefore one can see how over just a
16 short distance these porosity units can come and go; can be
17 easily described as ephemeral, sporadic, and lenticular, and
18 again I may state that there is still a possibility and
19 chance that the porosity could pinch out entirely over our
20 proposed location.

21 Q If I could refer you to what's been mar-
22 ked for identification as TXO's Exhibit Number Twelve and
23 ask you what that is, please?

24 A Exhibit Number Twelve is a structure map
25 on top of the Paddock formation. The wells that have pro-

1 location, which is the Mesa Petroleum Meyers No. 1, produced
2 onoly 9000 barrels of oil from the Drinkard formation and
3 was considered -- would be considered an uneconomic objec-
4 tive.

5 Again, the Mesa Petroleum Hightower No. 1
6 just north of our proposed location penetrated the interval
7 and contained no economic porosity development.

8 Therefore, similar to the Paddock forma-
9 tion, I consider this a risky objective at our proposed lo-
10 cation.

11 Q Mr. O'Hare, were Exhibits Eight through
12 Thirteen prepared by you or under your direction and super-
13 vision and can you attest to their accuracy?

14 A Yes, they were, and yes, I can.

15 Q Based upon your study of the area, Mr.
16 O'Hare, have you arrived at a professional opinion as to the
17 risk penalty which should be imposed on nonconsenting work-
18 ing interest owners if TXO's application is granted in this
19 case?

20 A Yes, I have.

21 Q And what's your opinion?

22 A Well, as previously stated in my descrip-
23 tion of the geology, the porosity units in the Strawn forma-
24 tion, again, are highly ephemeral, sporadic, and, as pre-
25 viously stated, can pinch out as close as one location, one

1 standard proration unit away.

2 We have, therefore, proposed our location
3 as close to the Pennzoil Viersen discovery in hopes of
4 penetrating a porosity thickness which will prove producible
5 and economic.

6 And there is risk in drilling any well
7 regardless of whether it's a direct offset to a good produ-
8 cer or a step-out five or six miles away and it's within the
9 same formation.

10 And on top of that I discussed the gener-
11 ally poor potential in the two other objectives, the Drin-
12 kard formation and the Paddock formation, and therefore I
13 would recommend a risk of no -- a risk penalty of no more
14 than 100 percent.

15 Q Mr. O'Hare, will, in your opinion, the
16 approval of TXO's application be in the interest of conser-
17 vation, prevent waste, and protect correlative rights?

18 A Yes, I think so.

19 MR. VANDIVER: Mr. Examiner, I
20 would move the admission of Exhibits Eight through Thirteen
21 as evidence in this case, and --

22 MR. QUINTANA: Eight through
23 Thirteen will be accepted into evidence.

24 MR. VANDIVER: -- I will pass
25 the witness.

1 MR. KELLAHIN: Mr. Quintana,
2 I'd like to take a moment, if I could, to review the geolo-
3 gic exhibits with my own geologist before I commence my
4 cross examination.

5 MR. QUINTANA: We'll take a ten
6 minute recess.

7
8 (Thereupon a recess was taken.)

9
10 MR. QUINTANA: The hearing will
11 come to order.

12 Mr. Kellahin, it's your cross
13 examine.

14 MR. KELLAHIN: Thank you, Mr.
15 Quintana.

16
17 CROSS EXAMINATION

18 BY MR. KELLAHIN:

19 Q Mr. O'Hare, I missed the benefit of hav-
20 ing you tell us the -- your background and experience yes-
21 terday. Would you tell me when and where you received your
22 degree in geology?

23 A I received my degree from the University
24 of Kentucky, my Master's degree in geology.

25 Q And in what year was that, sir?

1 A 1982.

2 Q And how long have you been employed as a
3 geologist with TXO?

4 A I've been employed with TXO for six
5 months and then for another two years with Union Oil of Cal-
6 ifornia in Midland, working in Lea County.

7 Q Your Union Oil experience comes prior to
8 your employment with TXO?

9 A Uh-huh.

10 Q In terms of studying the geology for a
11 company that's doing exploration in Lea County, New Mexico,
12 have you done any exploration geology in the Strawn in Lea
13 County?

14 A I haven't done any regional studies, no.

15 Q When did you first first begin studying
16 the specific Strawn pool that's under discussion today, the
17 one that the Viersen Well discovered?

18 A I initiated an investigation into that
19 area when I first came to work for TXO. We had drilled that
20 TXO Carter Well up to the north, which was, as I previously
21 described, a dry hole, and at that time we had another Gris-
22 so No. 1 proposed, and at that time that well was proposed
23 by another geologist at TXO in that same northeast quarter,
24 and so I did do a local geologic investigation of the Strawn
25 based on the data from the TXO Carter file.

1 Q All right. If I look on Exhibit Number
2 Ten, your Strawn Isopach --

3 A Uh-huh.

4 Q I see what appears to be the TXO Carter
5 Well in Section 33 as the only well on that section on this
6 exhibit that's shaded in the reddish pink color. Is that
7 the one we're looking at? That's the Texaco Carter.

8 A The Texaco Carter.

9 Q The TXO Carter is the dry hole to the
10 south.

11 A Right.

12 Q All right.

13 A Uh-huh.

14 Q Your studies of this area predate the
15 completion of the Pennzoil Viersen No. 1 Well?

16 A Uh-huh.

17 Q And you said another TXO geologist had
18 picked a location for the TXO Well.

19 A Uh-huh.

20 Q Somewhere in the northeast quarter of
21 Section 4?

22 A Uh-huh.

23 Q Where was that location picked by the
24 other geologist?

25 A That location, I believe, was 1980 from

1 the east and 660 from the north, and so it would be in the
2 northwest quarter of the northeast quarter, and after drill-
3 ing the TXO Carter No. 1, that well as proposed primarily
4 as a Drinkard and Paddock objective, based on his geologic
5 interpretation.

6 Q Was your geologic study used by TXO to
7 pick the location for the Grisso No. 1 Well?

8 A Uh-huh.

9 Q You said in your direct examination, I
10 believe when you were talking about Exhibit Number Ten, that
11 you used all available geologic evidence from which to draw
12 the Isopach.

13 A Uh-huh.

14 Q Is that true?

15 A Uh-huh.

16 Q All right, what was available to you, Mr.
17 O'Hare, that you used to prepare this exhibit?

18 A Well logs and scout tickets.

19 Q When we look at that Shipp Strawn Pool
20 where the Viersen Well is --

21 A Uh-huh.

22 Q -- did you have available to you the
23 Pennzoil Viersen well log?

24 A Yeah.

25 Q When we look to the north of the Viersen

1 well, there's the Mesa Petroleum Hightower Well.

2 A Uh-huh.

3 Q That was not used as control for preparing
4 this Isopach, was it, sir?

5 A No.

6 Q It's not deep enough, is it?

7 A No. It's on there, NDE, not deep enough.

8 Q In terms of constituting a new Strawn
9 Pool, Mr. O'Hare, are you satisfied as a geologist that this
10 Shipp Strawn Pool we're looking at is a separate Strawn res-
11 ervoir from the Fasken reservoir to the south and west and
12 the other Strawn wells up there in Section 34?

13 A Yes, I've got no problem with that.

14 Q When you look at the thickness of the
15 Strawn porosity that's mapped on Exhibit Number Ten --

16 A Uh-huh.

17 Q -- is this an indication of the thickness
18 of the Strawn lime section?

19 A No, it's not a gross Isopach.

20 Q When we talk about looking for these lit-
21 tle Strawn pods, these little reservoirs, is the thickness
22 and thinning of the Strawn lime significant to you as a geo-
23 logist?

24 A No.

25 Q Why not?

1 A Regionally the Strawn thickens to the
2 north and the east.

3 Q When we're looking for porosity develop-
4 ment in the Strawn, are you going to as a geologist look at
5 the entire Strawn interval or would you be looking at only
6 the lime section in the Strawn?

7 A You look at the lime section at the base
8 of the Strawn.

9 Q All right. Let's look at --

10 A Locally.

11 Q I'm sorry?

12 A Locally.

13 Q Yes, and that's what I'm interested in,
14 in Section 4.

15 Let's look at your cross section for a
16 minute, Mr. O'Hare.

17 A Uh-huh.

18 Q I've forgotten what that exhibit number
19 is.

20 A Number Eleven.

21 Q All right. When we look at the cross
22 section, the second well from the left, which would be the
23 Read and Stevens Blackmar No. 1 Well, through that well you
24 have drawn a line and labeled it "base of the Strawn". Cor-
25 rect?

- 1 A Uh-huh.
- 2 Q When we look at that well, will you describe for us what the lithology is in the Strawn at the point where you have drawn the base of the Strawn?
- 3
- 4
- 5 A It appears to be a shaley limestone.
- 6 Q A shaley limestone above or below the line that says "base of Strawn"?
- 7
- 8 A Below, just below. It appears to be possibly (not clearly understood) of lime in that shale.
- 9
- 10 Q Below the line that says "base of the Strawn" does the Strawn section turn to a sandy lithology?
- 11
- 12 A I don't know, I wasn't privy to any, you know, (inaudible).
- 13
- 14 Q As a geologist, then, how did you determine the base of the Strawn on each of the logs as you go across the cross section?
- 15
- 16
- 17 A Based on gamma ray and (inaudible).
- 18 Q And are you looking to determine for the base of the Strawn where you find the deepest end of the Strawn lime?
- 19
- 20
- 21 A Will you repeat that?
- 22 Q Yes, sir. Do you attempt to correlate the base of the Strawn as you've identified it on the cross section with where you pick the base of the Strawn lime as opposed to the Strawn sand?
- 23
- 24
- 25

1 A I don't know if that has any relevance.

2 Q All right, how did you determine then in
3 order to find the Strawn porosity, would you not have con-
4 centrated on trying to pick and determine where you would
5 find the Strawn lime?

6 A Will you repeat that? I'm not sure I un-
7 derstand your direction?

8 Q All right. When we're looking for the
9 Strawn porosity pods --

10 A Uh-huh.

11 Q -- is it important to you as a geologist
12 to carefully pick and locate the lime section in the Strawn
13 formation?

14 A The porosity is developed in this lime
15 section.

16 Q All right, now we're talking about the
17 same thing.

18 A And the thickness of the lime section is
19 inconsequential.

20 Q All right.

21 A The only pertinent (not understood) is
22 the thickness of the porosity developed in that lime sec-
23 tion.

24 Q Can we correlate the thickness of the
25 lime section with the general porosity to be found in that

1 section?

2 A No, because the porosity has been devel-
3 oped in different parts within that lime section and differ-
4 ent areas.

5 Q We're getting to the same place, I think.
6 What we're looking for is the gross interval over which then
7 you would examine to see what the porosity was. Correct?

8 A Uh-huh.

9 Q The gross interval you're looking at,
10 then, is going to be one limited by the Strawn lime as you
11 find it.

12 A Uh-huh.

13 Q Right? You're going to include in that
14 examination that Strawn interval that has got sand in it.

15 A Personally I would not include any of the
16 interval between that and the (not clearly understood.)

17 Q All right. As we go across, then to the
18 log number two, in your opinion does that approximate --

19 A The Blackmar?

20 Q Yes, sir, does that approximate what
21 would be the base of the Strawn lime?

22 A Yes, I think so.

23 Q All right, from the top of the Strawn to
24 the base of the Strawn we've now identified the Strawn lime
25 interval.

1 A Uh-huh.

2 Q It will be within that interval, then, we
3 will look for porosity development.

4 A Uh-huh.

5 Q All right. Let's go to the third log
6 over. Would you identify for me whether that base of the
7 Strawn line that's struck through that log correlates and
8 represents your opinion as to the base of the lime section
9 in the Strawn?

10 A Yes, I feel that that (not clearly under-
11 stood.)

12 Q All right, and again, then, as we get to
13 the fourth well, are you intending to represent by the base
14 of the Strawn what we find, or what you have concluded it
15 be the base of the lime section in the Strawn?

16 A As best as I can interpret.

17 Q All right.

18 A I was -- I was hedging between that pick
19 and a pick slightly above that, but I think that's probably
20 inconsequential.

21 Q All right, let me, just for the sake of
22 clarity, sir, have you mark with my red pen where the two --
23 where the other alternative choice would be for the base of
24 the lime section on that fourth log over.

25 A I'd say it could probably be in here,

1 this rather heavy line right there.

2 Q All right. Other than that choice, are
3 there any other choices on any of the logs that you as a
4 geologist might conclude would be the base of the lime?

5 A I feel pretty confident with (not clearly
6 understood.)

7 Q When we get to the last well on the far
8 right you're comfortable with the TXO Production, the Carter
9 F No. 1 Well?

10 A As best as I can be. The gamma ray quite
11 above the point which I actually really truly had picked, so
12 I really should have in fact had that dashed. (Not clearly
13 understood.)

14 Q Thank you, sir. When you as a geologist
15 are trying to locate one of these little Strawn reservoirs,
16 one of these pods, is it significant to you to try to find
17 and correlate the Strawn lime section so that you can see
18 whether it thickens or thins as you move across your cross
19 section?

20 A For my best estimate, the thickness of
21 the shale interval between the base of the Strawn and the
22 top of the Mississippian lime does not indicate either a
23 thickening or thinning of the Strawn lime section, and
24 therefore, regional geologic mapping to discover these types
25 of porosity pods is moot at best.

1 It is a geophysical prospect.

2 Q You said that there was within this spe-
3 cific area some general trends to the Strawn reservoirs that
4 we found.

5 A Uh-huh.

6 Q I believe you told us that they tended to
7 be linear. They tended to be elliptical in shape, and that
8 they were -- tended to be oriented northeast to southwest.

9 A Yes, in the area depicted.

10 Q You've described for us your opinion of
11 the risk factor involved in the drilling of the TXO Grisso
12 well location. I believe you've reached the conclusion that
13 that location justified the maximum percentage penalty under
14 the rules of the 200 percent. Was that your conclusion?

15 A No, that wasn't.

16 Q With regards to the potential for a
17 Strawn well, had you concluded that the TXO location merited
18 the 200 percent penalty?

19 A No.

20 Q You did not?

21 A No.

22 Q Have you made a recommendation to the
23 Examiner as to what the risk factor penalty ought to be in
24 the event TXO is awarded operations and their location is
25 approved?

1 A Yes.

2 Q And what is that number?

3 A 100 percent.

4 Q All right, for all formations?

5 A Yes.

6 Q All right. In your opinion will the pro-
7 posed location that TXO has suggested be one that can justi-
8 fy itself in the Drinkard formation alone?

9 A No, I don't think so.

10 Q And how about the Paddock formation by
11 itself?

12 A No way.

13 Q Do you know, Mr. O'Hare, whether or not
14 TXO is going to await the outcome of Pennzoil's drilling and
15 completion of its Shipp No. 1 Well in the west half of the
16 northeast quarter prior to undertaking the drilling of the
17 Grisso well should TXO be awarded the operations of that
18 well?

19 A No opinion on that.

20 Q As a geologist would you make a recommen-
21 dation to your management to await the outcome of the drill-
22 ing of the Pennzoil well prior to commencing of the Grisso
23 well?

24 A I feel that the Grisso location involves
25 less risk and I would therefore recommend that before the

1 Shipp No. 1.

2 Q As a geologist, Mr. O'Hare, I think I've
3 asked you before but I can't remember exactly, do you have
4 any disagreement as a geologist with Pennzoil's request to
5 space this new reservoir on 80-acre spacing?

6 A No, I don't.

7 MR. KELLAHIN: Nothing further,
8 thank you.

9

10

CROSS EXAMINATION

11

BY MR. QUINTANA:

12

Q This is a copy of Exhibit Number Eight.

13

A Uh-huh.

14

Q Would you show me where Pennzoil's
15 proposed well is going to be, the one -- the one that Mr.
16 Kellahin just mentioned, and state the location?

17

A It's going to be 1980/1980.

18

Q Okay, 1980 --

19

A From the north and east.

20

Q 1980 from the north and 1980 from the
21 east?

22

A Uh-huh.

23

Q Section 4.

24

A Uh-huh. Just probably over the "L" or
25 something (not clearly understood.).

1 MR. QUINTANA: I have no ques-
2 tions of the witness. Does someone else have questions of
3 the witness?

4 MR. BATEMAN: No questions.

5
6 REDIRECT EXAMINATION

7 BY MR. VANDIVER:

8 Q Mr. O'Hare, based upon all existing geo-
9 logical data in this area, do you have an opinion as to the
10 best, optimum location for drilling in this field?

11 A I feel that our offsetting location dir-
12 ectly to the north, which is being proposed for the Grisso
13 No. 1 would help to further define the reservoir limit dir-
14 ectly to the north and therefore would be the best location
15 of least risk.

16 MR. VANDIVER: That's all I
17 have, Mr. Examiner.

18 MR. QUINTANA: Mr. Kellahin?

19 MR. KELLAHIN: Nothing further.

20 MR. QUINTANA: Any further
21 questions of the witness?

22 I have no questions. The wit-
23 ness may be excused.

24 MR. VANDIVER: Mr. Examiner,
25 that's all the evidence I wish to present at this time. I

1 may wish to call rebuttal witnesses following Pennzoil's
2 case and I will have some comments as to what I think the
3 Division should do in this case at the close of the case.

4 MR. QUINTANA: Fine. Mr. Kel-
5 lahin, it's your show.

6 MR. KELLAHIN: Call as our
7 first witness, Mr. Quintana, Mr. Greg Davis.

8 I apologize for being a little
9 short of some of these land documents, land title documents.
10 I'll make additional copies for anyone who desires them af-
11 ter the hearing.

12 If you'll bear with me, we'll
13 try to do what we can with what we have.

14 MR. QUINTANA: Okay. You may
15 proceed.

16
17 GREG DAVIS,
18 being called as a witness and being duly sworn upon his
19 oath, testified as follows, to-wit:

20
21 DIRECT EXAMINATION

22 BY MR. KELLAHIN:

23 Q Mr. Davis, would you please state your
24 name and occupation?

25 A My name is Gred Davis. I'm a petroleum

1 landman with Pennzoil Company.

2 Q Mr. Davis, as a petroleum landman have
3 you previously testified before the Oil Conservation Divi-
4 sion?

5 A Yes, I have.

6 Q Will you describe for Mr. Quintana when
7 and where you obtained your degree?

8 A I obtained a degree in petroleum land
9 management from the University of Texas in the fall of 1981
10 and I have since that time been employed as a landman with
11 Pennzoil Company.

12 Q As a landman for your company have you
13 made a study of the land ownership, the working interst own-
14 ers involved in the northeast quarter of Section 1 --

15 A Yes.

16 Q -- Township 16 South, 37 East?

17 A Yes, sir.

18 Q All right. I have marked, Mr. Davis, as
19 Pennzoil's Exhibits One through Sixteen a package of docu-
20 ments and correspondence.

21 Have you had an opportunity to review
22 that package of information?

23 A Yes, I have.

24 Q And are those documents true and correct
25 copies of documents taken from Pennzoil's file?

1 A Yes, sir, it is.

2 Q And is correspondence reflected in that
3 file, correspondence that has either been generated by you
4 or received on behalf of your company by you?

5 A Yes.

6 Q Are you familiar with the operating
7 agreements that are enclosed in that package of exhibits?

8 A Yes, sir.

9 Q And did you prepare the working interest
10 tabulation that's shown on Exhibit Number One?

11 A Yes, I did.

12 MR. KELLAHIN: We tender Mr.
13 Davis as an expert petroleum landman and move for the intro-
14 duction of Exhibits One through Sixteen.

15 MR. QUINTANA: Mr. Davis is
16 considered an expert landman.

17 Mr. Kellahin, you plan to go
18 through each and every one of these, right?

19 MR. KELLAHIN: I hope not to,
20 sir. We will avoid Mr. Aycock's approach to testimony and
21 we will try to summarize only those documents that will be
22 helpful in presenting our position.

23 MR. QUINTANA: Fine. We will
24 enter Exhibits One through Sixteen, entered as evidence.

25 You may proceed.

1 Q Mr. Davis, let me orient you, sir, to the
2 unit we're looking at when we look at the northeast quarter
3 of Section 4 and we're looking at the working interests that
4 are entitled to participate in Strawn production.

5 Have you made a tabulation of what that
6 percentage working interest will be for the whole 160 acres?

7 A Yes.

8 Q Is that shown on Exhibit Number One?

9 A Yes, sir, it is.

10 Q When did you first commence, Mr. Davis,
11 efforts on behalf of Pennzoil to reach voluntary agreement,
12 farmouts, joinder, assignments, acquire leases, whatever,
13 for the drilling of Pennzoil's B. E. Shipp No. 1 for the
14 west half of the northeast quarter and the B. E. Shipp No. 2
15 for the east half of the northeast quarter?

16 Describe for us your first efforts.

17 A Our first efforts were in April of 1985.
18 We, of course, we had a prospect and we were in the process
19 of preparing to drill our Viersen No. 1 Well in the south-
20 east quarter, and sent out letters asking for support to-
21 wards drilling of that well, asking for option farmout
22 agreements on the northeast quarter.

23 And we did obtain two option farmouts
24 from Amerind Oil Company and David Fasken Estate.

25 Q Directing your attention to Exhibit Num-

1 ber Two, which is a letter dated April 8th, 1985, is this
2 approximately when Pennzoil commenced its efforts to form a
3 voluntary unit for two wells in the northeast quarter of
4 Section 4?

5 A Yes.

6 Q Would you describe generally for the Exa-
7 miner what it is that you did, in chronological order, in
8 order to form a voluntary unit?

9 A Well, of course the first effort that we
10 had was in April asking for support and option farmout.

11 Then, upon the completion of our Viersen
12 Well in August, it was completed, I believe, August 16th,
13 1985, as a -- as a commercial producer, we, you know, eval-
14 uated all the data that we had and on August 23rd we re-
15 ceived a proposal from TXO to drill their Grisso No. 1 and
16 upon review we -- I called back Mr. Bourgeois and informed
17 him that we had a location that we also wanted to drill in
18 the east half northeast quarter that was different from
19 their location and on August 30th I sent out our well pro-
20 posal for the number -- B. E. Shipp State No. 1 and No. 2
21 Wells, along with our proposed Authortization for Expendi-
22 ture.

23 And since our -- since we sent out our
24 proposals we have received commitments from working interest
25 owners and unleased mineral owners to join us in both of our
wells.

1 Q All right, sir, let's use Exhibit Number
2 One to summarize what you've done as a landman with regards
3 to the two units involved in the northeast quarter.

4 First of all, sir, since April 8th of '85
5 have you contacted each and every one of the working inter-
6 est owners that are involved in the northeast quarter?

7 A I have.

8 Q As of today when we look at the tabula-
9 tion -- well, first of all, let's talk about the percent-
10 ages.

11 You have listed on the left margin of the
12 tabulation what, sir, under ownership?

13 A That's the undivided interest owned by
14 the working interest owners and unleased mineral owners in
15 the northeast quarter.

16 Q And when we look at percentage interest
17 what are we looking at, the second column over from the
18 left?

19 A Right, okay.

20 Q That's the percentage?

21 A Right, yes.

22 Q And the ownership is the individuals?

23 A Yes, sir.

24 Q All right, when we look to the last two
25 columns what are we looking at?

1 A We're looking at the percentages that --
2 of the parties that have committed by either signing an AFE
3 and both -- and an operating agreement, or just signing an
4 AFE towards the drilling of our two wells in the west half
5 northeast and the east half northeast.

6 The asterisk indicates the companies that
7 have signed our AFE but not signed our operating agreement.

8 All other parties have signed our operat-
9 ing agreement and AFE.

10 Q When we look at the column for the east
11 half of the northeast quarter, that proration unit that
12 we're discussing this morning, what is the total percentage
13 interest, in your opinion, that are currently committed to
14 Pennzoil?

15 A 48.52 percent, approximately, rounded.

16 Q When we look at TXO's interest, the third
17 one from the top --

18 A Uh-huh.

19 Q -- they've committed to join the well in
20 the west half but not the east half.

21 A That's correct.

22 Q All right. Mr. Bourgeois testified this
23 morning about various companies.

24 Have you had contacts with Mr. VanZant,
25 as he has?

1 title there's going to be different. We don't have, we're
2 not privy to that information, and from what I understand
3 there are some other companies still involved that we have
4 no idea who they are.

5 It's just, you know, they have an
6 interest subject to an operating agreement.

7 Q When we look at your tabulation, Mr.
8 Davis, are there any other owners that have not been shown
9 as joining Pennzoil that support Pennzoil's location in the
10 east half of the northeast quarter?

11 A Yes, sir, there is. The Superior Oil
12 Company, in our evidence we have a letter signed by them
13 supporting our location, and we also received, I believe,
14 the same letter that TXO received from SOHIO supporting our
15 location subject to being appointed by the Commission as the
16 operator.

17 Q All right, so SOHIO's cut both direc-
18 tions.

19 A Yes, I believe it's the same exact let-
20 ter.

21 Q All right. Would you simply direct the
22 Examiner's attention to the estimated expenditure of well
23 costs for this subject well so that he'll have it available
24 before him?

25 A Yes. For the -- for the B. E. Shipp Es-

1 tate No. 2 dry hole costs are estimated at approximately
2 \$457,000 and completed costs at \$707,000.

3 The difference between our No. 1 and No.
4 2 Well is due to we would use the same production facilities
5 on the No. 1 for the No. 2, so we wouldn't have to have pro-
6 duction facilities, hopefully, anyway.

7 Q Your estimate of expenditures for the No.
8 2 Well, then, are based upon the Viersen No. 1?

9 A Correct.

10 Q Do you know, Mr. Davis, how many Strawn
11 wells that Pennzoil operates in this area?

12 A In this immediate area, of course, we op-
13 erate the Viersen No. 1 Well and to the north in Section 20
14 and 21 and 17 and 18 of 16, Township 16 South, Range 37
15 East, we operate approximately six wells.

16 Q Have you circulated to the working inter-
17 est owners a proposed operating agreement?

18 A Yes, sir, I have.

19 Q Would you identify for us the operating
20 agreement? I believe it's the first one contained in the
21 package of exhibits, dated September 10th, 1985?

22 A That's correct.

23 Q In that operating agreement, Mr. Davis,
24 what do you propose on behalf of Pennzoil be charged for
25 overhead rates?

1 A \$5500 for drilling wells and \$550 for
2 producing wells.

3 Q Based upon your experience are those
4 rates that are reasonable and comparable to those charged by
5 other operators for wells of this type?

6 A Yes, sir.

7 Q What are the overhead charges being used
8 for the Viersen No. 1 Well?

9 A These same overhead rates.

10 Q And have you had working interest owners
11 execute your operating agreement for the east half of the
12 northeast quarter?

13 A Yes, sir.

14 Q In terms of the development or drilling
15 of the wells for the west half of the northeast, the Shipp
16 No. 1, and for the east half, the Shipp No. 2, do you know
17 what your company plans to do in terms of the order or the
18 progression they will take for the drilling of those wells?

19 A Yes, sir, we plan to -- right now we plan
20 to drill the B. E. Shipp Estate No. 1 Well first and upon
21 review of the data that we -- and the results of that test,
22 commence the No. 2 Well.

23 Q In the event you're successful and the
24 Division approves Pennzoil as operator of the east half of
25 the northeast quarter, do you propose a provision or a tim-

1 ing so that the working interest owners in the east half of
2 the northeast quarter prior to making an election as to
3 whether to go consent or nonconsent, they will have made
4 available to them the information from the drilling of the
5 Shipp No. 1 Well?

6 A Yes.

7 Q You'll do that?

8 A Yes, sir.

9 MR. KELLAHIN: That concludes
10 my examination of Mr. Davis.

11 MR. QUINTANA: Cross examine?

12

13 CROSS EXAMINATION

14 BY MR. VANDIVER:

15 Q Mr. Davis, prior to drilling your Viersen
16 No. 1 Well, what interest did Pennzoil own in the northeast
17 quarter of Section 4?

18 A This 36.86 percent. That includes farm-
19 out agreements that we have taken.

20 Without our farmouts we own approximately
21 16 percent.

22 Q And these were option farmout agreements?

23 A Yes, sir.

24 Q And so by drilling that well you earned
25 additional interest in the northeast quarter?

1 A We earned the option to earn that inter-
2 est by drilling and completing wells in the northeast quar-
3 ter.

4 Q When you testified that the Viersen No. 1
5 was completed August 16th of 1985?

6 A Yes, sir.

7 Q When was that completion reported?

8 A Well, that's the -- I believe that's the
9 date that was used on our completion report filed with the
10 Commission August 16th.

11 Q When was that completion report filed?

12 A I do not have that information.

13 Q You testified that TXO proposed their
14 Grisso No. 1 Well to you on what date?

15 A I believe it was Augsut 23rd.

16 Q You've also testified that J. H. VanZant
17 and SOHIO have signed both yours and Pennzoil's AFE's, is
18 that correct?

19 A SOHIO has not signed anything. They just
20 sent us a letter that stated that if we are appointed opera-
21 tor in both forced pooling hearings that they will partici-
22 pate and support our locations.

23 Mr. VanZant signed both AFE's, TXO's AFE
24 for the Grisso and Pennzoil's AFE for the B. E. Shipp State
25 No. 1 and 2, both -- all three subject to acceptance of an

1 operating agreement, and the subsequently executed our oper-
2 ating agreement.

3 Q Mr. Davis, what is Pennzoil's leasehold
4 interest in the southeast quarter of Section 4?

5 A I would say right now it's 90 -- approxi-
6 mately 94 percent, and probably within a month it's going to
7 go down to approximately 86 percent, due to payout of a
8 well, and our reduction of interest pursuant to the farmout
9 agreements.

10 Q And that's the -- that's the tract upon
11 which your Viersen No. 1 Well is located?

12 A Yes, sir.

13 Q What's the Viersen No. 1 Well producing
14 right now?

15 A I believe it's producing -- it's shut in
16 right now.

17 Q What allowable?

18 A I believe right now it's around 350 bar-
19 rels a day. That's a temporary allowable.

20 Q And you testified that your interest in
21 the southeast quarter will be reduced to 86 percent, and
22 that's -- is that --

23 A That's just in the east half northeast
24 quarter.

25 Q And that's upon payout of the Viersen No.

1 1 Well?

2 A Yes, sir.

3 Q When do you expect it will pay out?

4 A I would probably say within the next
5 month or two.

6 Q You're familiar with the mineral owner-
7 ship in the southeast quarter and the northeast quarter of
8 Section 4, is that correct?

9 A That's correct.

10 Q And are there any common owners? Is
11 there -- are there any mineral owners that own mineral in-
12 terests in the southeast quarter that also own mineral in-
13 terests in the northeast quarter?

14 A No, sir.

15 Q Are there any leasehold owners that own
16 working interest in the southeast quarter and also own work-
17 ing interest in the northeast quarter?

18 A Yes.

19 Q Who are those?

20 A Pennzoil Company and The Superior Oil
21 Company.

22 Q And you testified that The Superior Oil
23 Company supports your location.

24 A Yes, sir.

25 Q What interest does Superior own in the

1 southeast quarter?

2 A They own 7 percent -- 6 percent, the bal-
3 ance right now and then after payout it will drop to about 4
4 percent.

5 Q Are there other working interest owners
6 who, I assume, will have the right to back in for working
7 interest after payout in the southeast quarter, who also own
8 working interest in the northeast quarter?

9 A No, sir.

10 Q So it's just Pennzoil and Superior, are
11 the only ones that own working interest in the entire east
12 half of Section 4?

13 A Yes, sir.

14 Q In your communications with the other
15 working interest owners in the northeast quarter, are there
16 other parties who have indicated that they're awaiting the
17 outcome of this hearing?

18 A Yes, sir.

19 Q Who are those?

20 A All parties with the exception of the
21 ones that have committed to, you know, participate in our
22 wells.

23 All parties that you see not listed on my
24 breakdown.

25 Q Are there any that have indicated to you

1 that they will not consent or go nonconsent regardless of
2 the outcome of this hearing?

3 A All parties that I have spoken with that
4 haven't made a decision have indicated to me that they're
5 going to participate, regardless.

6 Q If TXO's application is approved in this
7 case is Pennzoil going to go nonconsent?

8 A I could not -- I can't answer that.

9 Q Your -- your testimony is that the drill-
10 ing costs for your proposed well, which is the Shipp No. 2,
11 is \$707,000?

12 A Yes.

13 Q And what's your drilling cost of your
14 Shipp No. 1 Well?

15 A Completed cost is \$700 -- approximately
16 \$771,000.

17 Q And your -- your overhead, proposed over-
18 head charges are just slightly more than TXO's proposed
19 charges, is that correct?

20 A That's correct.

21 Q What is the reason that Pennzoil proposes
22 to drill its Shipp No. 1 Well in the west half northeast
23 quarter first?

24 A The main reason is because we have a sep-
25 arate buildup in the northeast quarter from the southeast

1 quarter. We feel there's two separate biohermal porosity
2 build-ups, and we would like to test -- we feel that our No.
3 1 location will, you know, be our best test to either con-
4 firm that or disconfirm it.

5 Q What is the distance of your proposed
6 Shipp No. 2 Well from Pennzoil's Viersen No. 1 Well in the
7 east half southeast quarter?

8 A Oh, it is -- I'll have to add this up.
9 I'll have to do some figuring on it. I really don't -- I've
10 never -- let's see, what have we got here?

11 Q First of all, the footage of your Shipp
12 No. 2 Well is what?

13 A Okay, it's 660 from the north and 810
14 from the east, so I'd say it's approximately 2640.

15 Q Approximately within half a mile.

16 A Yes.

17 MR. VANDIVER: Excuse me, just
18 a moment, Mr. Examiner.

19 I'll pass the witness, Mr.
20 Examiner.

21

22 CROSS EXAMINATION

23 BY MR. QUINTANA:

24 Q I have some questions for you, Mr. Davis.

25 A Yes, sir.

1 Q To your knowledge, do you know if TXO
2 participates in the production from the Viersen No. 1?

3 A Do they participate in production, TXO?
4 No, sir.

5 Q Correct me if I'm wrong, TXO signed an
6 AFE to the drilling of the Shipp No. 1 in the west half of
7 the northeast?

8 A Yes, sir, subject to acceptance of our
9 operating agreement.

10 MR. QUINTANA: No further ques-
11 tions.

12 MR. MAX COLL: Mr. Quintana.

13 MR. QUINTANA: Would you state
14 your name for the record?

15 MR. COLL: Mr. Quintana, my
16 name is Max Coll. I'm here representing myself and my
17 brothers. We're listed as unleased mineral owners on Exhi-
18 bit One, and I'd like to ask a question about the proposed
19 order of drilling these wells.

20 I believe you testified that
21 you would first drill the Shipp No. 1 and then the Shipp No.
22 2, is that correct?

23 A To the best of my knowledge that's what
24 we plan to do.

25 MR. COLL: Okay. Now you're

1 also proposing a well in the west half of the southeast, the
2 Viersen No. 2, is that the correct name of it?

3 A Yes, sir.

4 MR. COLL: Okay, where does
5 that fit in the order of the proposed drilling of the wells?

6 A We plan to drill that well as soon as we
7 get an order on our field rules.

8 MR. COLL: So it would be the
9 Viersen No. 2, the Shipp No. 1, and then the Shipp No. 2, in
10 that approximate order, is that correct?

11 A Well, yes, sir, but I don't really see
12 what the Viersen No. 2 has to do with the drilling of these
13 wells?

14 MR. KELLAHIN: He just wants to
15 know the order of drilling.

16 A Oh, I believe that's what it is.

17 MR. COLL: I want to know the
18 order and I want to know the delay in the anticipated com-
19 pletion of a well in the --

20 A Okay.

21 MR. COLL: -- east half of --
22 in the east half of the northeast. That's the reason for
23 this series of questions.

24 A Yes, sir. Okay.

25 MR. KELLAHIN: Mr. Coll, if

1 this witness doesn't satisfy you, I have another witness
2 that can specifically tell you.

3 MR. COLL: All right. I just
4 want to make sure. That's the approximate order that you
5 propose to drill them, though, the Viersen 2, the Shipp 1,
6 the Shipp 2.

7 A Yes, sir.

8 MR. COLL: Thank you.

9 MR. BATEMAN: One quick ques-
10 tion, if I may, on Exhibit Number One with respect to Texa-
11 co's interest again.

12

13

CROSS EXAMINATION

14 BY MR. BATEMAN:

15 Q You testified, I think, with respect to
16 the combined interest of the East Lovington Unit.

17 A Yes. Yes, sir. Well, the Shell-ARCO-
18 Texaco interest.

19 Q Right, and that's -- what was that fig-
20 ure?

21 A Let me see. Well, I believe it's 9.3125
22 percent.

23 Q How is that reflected on Exhibit One, if
24 it is?

25 A Okay, well, Shell Western, this is record

1 title as taken from a drilling opinion prepared by Doug
2 Lunsford of Hinkle Law Firm in Roswell.

3 Shell Western with 8.039 percent working
4 interest.

5 Atlantic Richfield with .5773.

6 And Texaco Producing with .6962.

7 I had it written down on one of my -- I
8 think you might have got it, or somebody.

9 Q I just wanted to clarify that.

10 A Yes.

11 Q Thank you very much.

12 MR. QUINTANA: Any further
13 questions of the witness?

14 MR. VANDIVER: Yes, sir, Mr.
15 Examiner.

16

17 RECROSS EXAMINATION

18 BY MR. VANDIVER:

19 Q If I could ask just a few more questions,
20 Mr. Davis.

21 A Yes, sir.

22 Q Your Viersen No. 2 will be located in the
23 west half southeast quarter of Section 4?

24 A Yes, sir.

25 Q And that's at an unorthodox location?

1 A Well, if we're successful with our field
2 rules, it will be an orthodox location, but if we do not get
3 our field rules it will be unorthodox.

4 Q What is the location of that proposed
5 well?

6 A Oh, let's see, I don't -- I don't have
7 that information with me. I believe it's 3810 from the
8 north and south.

9 (There followed a discussion off the
10 record.)

11 A Well, that's probably right. I just -- I
12 might --

13 MR. QUINTANA: We'll take a two
14 minute recess for him to get that information.

15 (Thereupon a recess was taken.)

16 MR. QUINTANA: Did you find it?

17 A Yes, sir.

18 MR. QUINTANA: You may proceed.

19 Q Mr. Davis, I believe my last question was
20 what is the footage location of the proposed Viersen No. 2
21 well?

22 A It's located 1300 feet from the south
23 line and 1650 feet from the east line.

24 Q What is the distance of the Viersen No. 2
25 well from the Viersen No. 1 Well?

1 A Again, I'd say it's about a quarter of a
2 mile.

3 Q Approximately 1320 feet? 1300 feet?

4 A Yes, sir.

5 MR. QUINTANA: What was that
6 distance? What was that location again?

7 A It's 1300 from the south and 1650 from
8 the east.

9 MR. QUINTANA: Thank you.

10 Q Mr. Davis, did -- prior to drilling
11 Pennzoil's Viersen No. 1 Well, did Pennzoil request a
12 farmout from TXO Production Corporation as to the acreage in
13 the -- as to their interest in the northeast quarter --

14 A Yes, sir.

15 Q -- of the section? And what was their
16 response?

17 A They turned us down.

18 Q And what was their reason?

19 A Mr. Examiner, we'll look in the exhibits,
20 I believe it's probably Exhibit Four, letter from TXO to
21 Pennzoil, dated June 19th, 1985. They just turned us down
22 with no reason why they turned us down.

23 Q Mr. Davis, do I understand that you will
24 earn interest in the northeast quarter by drilling your
25 proposed Shipp No. 2 Well?

1 A Yes, sir.

2 Q Will you earn interest if -- if your --
3 if someone else drills the well in the northeast quarter?

4 A I believe our farmout agreement doesn't
5 mention that, but I believe that we probably could if we
6 participated. As long as we participated in the well we'd
7 earn still.

8 Q With respect to your Viersen No. 2 Well,
9 what's the -- I believe in your earlier case you were asking
10 in the alternative for a nonstandard location, or an unor-
11 thodox location in the event the special pool rules were not
12 approved by the Division.

13 A Yes, sir.

14 Q What was the purpose of the nonstandard
15 location?

16 A To locate our well at the most optimum
17 location on the -- we feel, in the pool.

18 MR. VANDIVER: Pass the wit-
19 ness, Mr. Examiner.

20 MR. QUINTANA: Any questions of
21 the witness?

22 He may be excused.

23 MR. KELLAHIN: Mr. Examiner,
24 we'll call at this time Mr. Ralph Williams.

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RALPH A. WILLIAMS,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

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

A My name is Ralph A. Williams. I'm a petroleum engineer for Pennzoil Company in Midland, Texas.

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

A Yes, I have.

Q Did you testify on behalf of your company as a petroleum engineer before the Division on September 11th, 1985, in Case 8690?

A Yes, I did.

Q Subsequent to that testimony, Mr. Davis, have you made additional engineering computations and calculations?

A Yes, I have.

Q And are those calculations with regard to the Viersen No. 1 Well?

A Yes, they are.

1 Q Have you reduced your study and informa-
2 tion to the form of certain exhibits, Mr. Davis -- or Mr.
3 Williams?

4 A Yes, I have.

5 MR. KELLAHIN: We tender Mr.
6 Williams as an expert petroleum engineer.

7 MR. QUINTANA: He's considered
8 an expert petroleum engineer.

9 You may proceed.

10 Q I'd like you to, before we start about
11 your exhibits, have you give us a little background in terms
12 of the engineering information that you have studied and
13 evaluated from the Viersen No. 1 Well, the discovery well.

14 First of all, would you generally summar-
15 ize for us, Mr. Williams, what you concluded back in Septem-
16 ber of this year with regards to the ability of the Viersen
17 No. 1 Well to drain certain acreage. What did you conclude
18 about the permeability of that well?

19 A We concluded at that time, and it's been
20 reconfirmed by later testing, that the permeability is in
21 the range of approximately 43 millidarcies. This is sub-
22 stantiated by core information on several feet of core that
23 we did recover on the Viersen No. 1.

24 Q The determination that the Viersen No. 1
25 Well had 43 millidarcies of permeability in it led you to

1 what conclusion as a petroleum engineer in terms of its
2 ability to drain certain distances?

3 A Under the radial flow equation it was
4 concluded and calculated that a well exhibiting oil para-
5 meters and formation parameters would have an effective
6 drainage radius of 9090 feet.

7 Q Subsequent to that testimony, Mr. Wil-
8 liams, have you received additional data and have you made
9 other calculations from which you can determine whether or
10 not there's a barrier from the wellbore of the Viersen No. 1
11 Well in some direction, some specific distance?

12 A Yes, I have further confirmed the pos-
13 sibility of a barrier at a distance of approximately 557
14 feet.

15 Q Would you summarize for us, Mr. Williams,
16 what process you go through as an engineer to reach the con-
17 clusion that the producing well, the Viersen No. 1, has
18 found a boundary to its reservoir at some location approxi-
19 mately 500 and -- what did you say -- 57 feet?

20 A It was 554 feet in the exhibit we will
21 present.

22 Q All right. What process, summarize the
23 process you go through as an engineer to make that determin-
24 ation.

25 A The process which has been used quite ex-

1 tensively, is the Hoerner -- Hoerner analysis. It's a plot
2 of the pressure transient behavior of a well when it's shut
3 in following a flow period.

4 This is -- the plot is made in dimension-
5 less time to take the time factor in minutes or hours out of
6 it.

7 It's a standard practice, which when
8 looking at a Hoerner plot, once you've reached the -- once
9 you've reached past wellbore storage effects, your pressure
10 will increase on a -- at a constant rate, which is used to
11 calculate the permeability.

12 During this time you're in radial flow
13 and as your time increases you expand your radius of inves-
14 tigation out away from the wellbore in radial flow.

15 An anomaly or a change in slope of this
16 Hoerner plot is indicative of several things: Either a
17 thinning of the reservoir, a fault, a water contact, et cet-
18 era. All these are an in to the oil productive interval.

19 At that point your pressure transient is
20 coming back into the wellbore in nonradial flow, and this
21 accounts for the change in slope and the point at which this
22 slope changes, using an equation that we will present here
23 in a minute, you can calculate the approximate distance to
24 this barrier, or end to the reservoir.

25 Q Have you applied standard engineering tech-

1 niques and methodology to make these calculations?

2 A Yes, I have.

3 Q Once that calculation is made and you
4 have found a barrier, or some indication of a change in the
5 reservoir at a certain distance, what then, or what purpose
6 can be used with that type of information?

7 A It can be used in conjunction with geolo-
8 gic or geophysical data to project the extent of a reser-
9 voir.

10 Q Let's go through, then, sir, the exhibits
11 you've prepared on that point and have you describe and
12 identify your exhibits, commencing with Exhibit Number
13 Seventeen, which is the Hoerner plot.

14 A Okay. This Hoerner plot includes several
15 build-ups on the well, all the recorded build-ups on the
16 well. We thought we'd put all the available pressure data
17 on this to be less confusing to the Commission.

18 It is outlined in the plot, the black,
19 which this originally was a color plot, but the very-most
20 upper curve in the far upper righthand corner was the initial
21 shut-in on the DST on the Viersen No. 1.

22 The next curve immediately under that,
23 which extends down through approximately 2200, was the final
24 shut-in on the Viersen No. 1.

25 These indicate that the pressure at the

1 time of drilling was approximately 2540 psi.

2 The one denoted as green is the interme-
3 diate curve in the middle, which was submitted as evidence
4 in our case for field rules. It's the intermediate curve
5 which extrapolates to approximately 2475.

6 And the curve which is denoted as blue is
7 the bottom curve, which -- which extends -- which it's noted
8 here that it's 330 hours since the company preparing this
9 data for us plotted this. We have ran back in the well then
10 an extended shut-in period and have retrieved several more
11 points, the three points out away from the data, and we've
12 projected that pressure to approximately 2390.

13 On this curve the boundary effects, which
14 were first observed on the first build-up after the DST,
15 were accentuated and it's my interpretation that the boun-
16 dary effect was -- was seen at a time of approximately 32
17 hours, which translates to a Hoerner time of approximately
18 1.1.

19 Q What then did you do with this informa-
20 tion?

21 A I used this data in the following exhi-
22 bit, which I --

23 Q Eighteen.

24 A It will be Exhibit Eighteen. Let me
25 reiterate the parameters going into this equation.

1 meters and the drainage calculation. Would you go ahead and
2 describe that for us now?

3 You don't have to read all the parame-
4 ters, just tell us the conclusion.

5 A The conclusion from this, using a simi-
6 lar, similar parameters, was that the drainage radius of a
7 well exhibiting these characteristics is 9090 feet.

8 Q All right. Would you describe for us the
9 information on Exhibit Number Twenty, which the AFE for the
10 B. E. Shipp State No. 1 Well?

11 A This information is an Authorization for
12 Expenditure on Pennzoil's standard form, which was prepared
13 by our Drilling Department, and the dry hole cost is esti-
14 mated 900 -- excuse me, \$456,900 and a completed well cost
15 of \$707,900.

16 Q And then Exhibit Number Twenty-two is the
17 AFE for the Shipp Estate No. 2 Well.

18 A That's correct.

19 Q I'm sorry, if I misspoke, that's supposed
20 to be Exhibit Number Twenty-one.

21 Mr. Williams, in your opinion are the
22 AFE's, Exhibits Twenty and Twenty-one, fair and reasonable
23 based upon your experience?

24 A Yes, they are.

25 Q Let's go on to Exhibit Number Twenty-two,

1 and we might as well look at Exhibit Number Twenty-three at
2 the same time. Those are two plats, Mr. Williams, and I
3 have marked for the record as Exhibit Number Twenty-two that
4 plat that has the caption at the bottom that says "TXO Pro-
5 posed Location".

6 I've marked as Exhibit Twenty-three that
7 plat that says "Pennzoil Proposed Location."

8 Before we discuss the conclusions that
9 you can draw as an engineer, let's orient everyone to what
10 information is contained on the exhibit and simply identify,
11 using Exhibit Number 22, the wells around which circles are
12 drawn.

13 Starting in Section 4 let's identify the
14 wells.

15 A The solid well symbol in the northeast
16 quarter of the southeast quarter is the Viersen No. 1, which
17 has been drilled.

18 The well to the southwest of that, an
19 open circle, is the Viersen No. 2 proposed well.

20 The well in the southwest of the north-
21 east quarter, denoted with a "1" with an open circle is the
22 B. -- proposed B. E. Shipp No. 1.

23 The well in the southeast of the north-
24 east quarter, also denoted as an open circle, is the TXO
25 proposed well.

1 And the well in Section 3, which is in
2 the southwest of the northwest, is the -- is a further plan-
3 ned well of Pennzoil's and we enter that as being the
4 Waldron No. 1.

5 Q All right, let's go to Exhibit Number
6 Twenty-three and have you identify the wells around which
7 you've drawn circles.

8 A They are the same with the exception in
9 the northeast of the northeast of 4 the well denoted as --
10 by an open circle with the number "2" is Pennzoil's proposed
11 B. E. Shipp No. 2 and this -- this well has replaced TXO's
12 location in the southeast of the northeast.

13 Is that enough?

14 Q Yes, sir. Around each of the wells on
15 both exhibits you've drawn a circle. What does that circle
16 represent?

17 A That circle is a graphical depiction of a
18 radius of 1053 feet, which is the equivalent to an 80-acre
19 unit of area. This is done to show it more in terms of a
20 radial flow or that sort of connotation rather than the rec-
21 tangular proration unit shape.

22 Q All right. You testified back in Septem-
23 ber; you've studied the Shipp Strawn Pool; you've looked at
24 new engineering information, and done calculations, Mr. Wil-
25 liams.

1 Do you have any reservations as a petro-
2 leum engineer that this reservoir ought to be spaced and de-
3 veloped on 80-acre spacing?

4 A I have no reservations. I believe it
5 should be developed on 80.

6 Q In terms of choosing a well location as
7 opposed -- as presented by Pennzoil as opposed to TXO, what
8 in your opinion as an engineer allows for the more efficient
9 and orderly development of the reservoir? Which spacing lo-
10 cation?

11 A The Exhibit Number Twenty-three, Penn-
12 zoil's proposed well locations.

13 Q What is your objection to the TXO loca-
14 tion as they propose for the Grisso No. 1 Well in terms of
15 the effects of drainage patterns on the wells in the pool?

16 A As you can see by the intersection of 80-
17 acre radiuses, that you'll come into a conflict of drainage
18 radiuses between the Viersen No. 1, the Shipp 1, the pro-
19 posed Waldron No. 1, whereas, as depicted in 23, these do
20 not intersect and they'll be a more effective way to produce
21 the hydrocarbons from these -- from this reservoir.

22 Q Which well location pattern, Mr. Wil-
23 liams, maximizes the development of the reservoir and pro-
24 vides for the potential to develop the greatest portion of
25 the reservoir?

1 A The Exhibit Twenty-three, the Pennzoil's
2 proposed locations.

3 Q Were exhibits --

4 A I might --

5 Q Go ahead.

6 A I might add that as in any reservoir, you
7 always have the potential for secondary recovery and based
8 on this, as you all know, that on a secondary project if you
9 have wells in close proximity to one another, that you'll
10 quite likely have cycling of any type of fluid injected into
11 the wellbores.

12 Q Based upon your study do you believe that
13 this reservoir is a potential future candidate for those
14 types of operations?

15 A Yes, it's a potential candidate. Penn-
16 zoil's also done work in similar reservoirs in the area and
17 are in various stages of proposing secondary maintenance
18 projects.

19 Q Were Exhibits Seventeen through Twenty-
20 three prepared by you or compiled under your direction and
21 supervision?

22 A Yes, they were.

23 MR. KELLAHIN: That concludes
24 our examination of Mr. Williams.

25 We move the introduction of

1 Seventeen through Twenty-three.

2 MR. QUINTANA: Exhibits Seven-
3 teen through Twenty-two will be admitted as evidence.

4 MR. KELLAHIN: Twenty-three.

5 MR. QUINTANA: Excuse me,
6 Seventeen through Twenty-three will be accepted as evidence.

7 MR. QUINTANA: Your cross exam-
8 ination.

9 MR. VANDIVER: Mr. Quintana, I
10 hate to keep taking breaks but I'd like to discuss this for
11 a few minutes with --

12 MR. QUINTANA: Will five min-
13 utes do? Okay?

14 MR. VANDIVER: Five will do,
15 yes, sir.

16 MR. QUINTANA: Five minute re-
17 cess.

18

19 (Thereupon a recess was taken.)

20

21 MR. QUINTANA: Mr. Vandiver?

22 MR. VANDIVER: Yes, sir.

23

24

25

1 CROSS EXAMINATION

2 BY MR. VANDIVER:

3 Q Mr. Williams, you testified that you
4 believe there is a barrier, back on your Hoerner analysis, a
5 porosity barrier?6 A It could either be a porosity barrier, fa
7 ult, a water contact, anything which disrupts the
8 continuation of oil bearing porosity.9 Q On the basis of the Hoerner analysis, is
10 there any indication of which direction the barrier --11 A There is not a direction that can be
12 inferred from the Hoerner analysis.13 Q So this barrier could be to the south of
14 your Viersen No. 1 Well.15 A That's correct. It could be in any
16 direction.17 Q Are there -- are there other possible
18 explanations for the apparent barrier anomaly?19 A There are -- that is the most likely and
20 I'm not aware of any -- any other type of situations that
21 would give you this sort of anomaly.22 Q In connection with Exhibit -- Pennzoil's
23 Exhibit Number Nineteen, I believe you testified that -- and
24 the exhibit shows -- that you're using porosity of 12
25 percent?

1 A That's correct.

2 Q And that's the average porosity?

3 A That's the average porosity.

4 Q In your Viersen No. 1 Well?

5 A That's correct.

6 Q What's the basis of that -- that figure?

7 A Log analysis.

8 Q And did you analyze the log yourself?

9 A I analyzed logs and also you have to keep
10 in mind that this is vugular porosity and this is my best
11 estimate using the well log and my experience with similar
12 bioherm developments of porosity.

13 Q And it's your testimony and belief that
14 it shows that the barrier is approximately 554 feet from the
15 wellbore of the Viersen No. 1 Well?

16 A That's correct.

17 Q And it's also your testimony that the
18 drainage radius from the Viersen No. 1 is 9090 feet.

19 A That's correct.

20 Q Referring to your Exhibit Number Three,
21 which indicates the proposed Pennzoil location, the circles
22 represent 1053 feet, which is the radius of what, drainage
23 on an 80-acre unit?

24 A That is the areal representation in a
25 circular manner of an 80-acre proration unit, or an 80-acre

1 unit of area.

2 Q And this exhibit shows that your Viersen
3 No. 1 is recovering oil from the east half of the northeast
4 quarter of Section 4, is that correct?

5 A This -- this figure, Exhibit 23, has no-
6 thing to do with any reservoir drainage radiuses or any-
7 thing. It's strictly a graphical description of an 80-acre
8 area.

9 Q Well, what the -- what's the purpose of
10 the exhibit, then?

11 A To graphically represent what a circular
12 80-acre unit of area would look like.

13 Q Well, in your opinion, based on your
14 study of the area, is the Viersen No. 1 draining oil from
15 the east half northeast quarter of Section 4?

16 A It's my opinion and backed up by the
17 drainage radius calculation that those drainage radius cal-
18 culations are a statement of the fact that if this permeab-
19 ility, this thickness is continuous, then that well will
20 drain up to a radius of 9090 feet.

21 Q And you also, Pennzoil proposes what I
22 think you referred to as the Waldron No. 1, is that correct?

23 A That's correct.

24 Q And what's the footage location of that
25 well?

1 A That would be -- I'm not exactly sure.
2 It's within 150 feet of the center of that quarter quarter
3 and I'm not sure which direction will apply to that.

4 Q Do you anticipate that -- when do you an-
5 ticipate drilling that well?

6 A We would anticipate drilling that well in
7 mid to late November.

8 Q Does, to your knowledge, Pennzoil own any
9 interest in the southwest quarter of Section 3?

10 A Yes, we do have acreage in the southwest
11 quarter.

12 Q And you testified that Pennzoil's pro-
13 posed location is the best location for the efficient and
14 orderly development of the Shipp Pool, is that correct?

15 A That's correct.

16 Q And what's the basis of that opinion?

17 A The basis is a conglomeration of all data
18 available, including geological and geophysical data which
19 will be covered later.

20 Q Is this -- in connection with Pennzoil's
21 Exhibits Eighteen and Nineteen, what was the basis of the
22 oil viscosity used in those two exhibits?

23 A The basis of that is PVT analysis of a
24 similar reservoir fluid. The reason for the difference of
25 sure. We have different pressures on the two different ana-

1 lyses, which will slightly shift your viscosity.

2 MR. VANDIVER: I'll pass the
3 witness, Mr. Quintana.

4 MR. QUINTANA: Is it your
5 statement that -- I'm looking now at Exhibit Ten of TXO's
6 exhibits -- is it your testimony that you're in disagreement
7 with the Isopach map (not understood)?

8 A Mr. Examiner, I cannot, from the engin-
9 eering data, really postulate any type of orientation or et
10 cetera of the reservoir.

11 MR. QUINTANA: Fine.

12 MR. KELLAHIN: We have a geolo-
13 gist who will make that analysis for you.

14 MR. QUINTANA: No questions.

15 Any further questions of the
16 witness?

17 He may be excused.

18
19 GREGORY L. HAIR,

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

22

23 DIRECT EXAMINATION

24 BY MR. KELLAHIN:

25 Q Mr. Hair, would you please state your

1 name and occupation?

2 A My name is Gregory L. Hair. I'm District
3 Geologist for Pennzoil Company in Midland, Texas.

4 Q Mr. Hair, would you describe for the
5 Examiner what professional degrees that you hold?

6 A Yes. I hold a Bachelor of Science in
7 geology from Illinois State Univerity; Master of Science in
8 geology and geophysics from the University of Texas at El
9 Paso.

10 Q Would you describe for us, Mr. Hair, what
11 has been your work experience in the area of exploration
12 geology with regards, particularly, to the Strawn forma-
13 tions, Lea County, New Mexico, and your familiarity with
14 seismic evaluation of data?

15 A I joined Pennzoil in 1976 in Houston and
16 I was transferred to Midland about two and a half years
17 later.

18 My first assignment was working on the
19 Strawn and I've worked on it continuously ever since for the
20 past six and one-half years in this immediate area, in the
21 Lovington area.

22 I've had training in geophysics besides
23 at the university with -- with Pennzoil, over 120 hours, and
24 I've interpreted geophysics in the Gulf of Mexico, Lea Coun-
25 ty, Eddy County, several other places in New Mexico, as well

1 as other basins that we have.

2 Q Have you participated in geologic
3 evaluations and making, in addition, seismic interpretations
4 of Strawn reservoirs here in Lea County, New Mexico?

5 A Yes. Six and a half years ago I started
6 geologic evaluations and those have been continuous to the
7 present.

8 Approximately two and a half years ago
9 myself and others at Pennzoil started geophysical
10 evaluations of this area.

11 Q Did you testify as an expert geologist
12 before the Division on September 11th, 1985, in Case 8696,
13 which was the spacing case for the new pool?

14 A Yes, I did.

15 MR. KELLAHIN: We tender Mr.
16 Hair as an expert petroleum geologist.

17 MR. QUINTANA: He
18 qualifications are accepted as an expert petroleum
19 geologist.

20 You may proceed.

21 Q Mr. Hair, I'd like you to direct your
22 attention first of all to what we have marked as Exhibit
23 Number Twenty-four. I believe I've consistently marked what
24 is your total Strawn porosity Isopach map. If that's not
25 what we're all looking at, then we'll need to make a change.

1 All right.

2 A This is an Isopach map of porosity in the
3 Strawn limestone. It's based on geological data where
4 available and in the proposed Shipp Field area, geophysical
5 data primarily with one data point from the Viersen.

6 Q Is this a map that is similar to the one
7 that you used, prepared, and testified about at the hearing
8 before the Division in September?

9 A Yes, it is.

10 Q Would you describe for us generally what
11 you have depicted on the exhibit and then tell us what con-
12 clusions you reach from this exhibit?

13 A Okay. Generally, first of all, the three
14 green arrows are shown on the exhibit, two of them our pro-
15 posed locations.

16 The arrow on the southwest side is the B.
17 E. Shipp No. 1 Estate proposed location. The arrow in the
18 northeast of the northeast is the B. E. Shipp Estate No. 2,
19 and the arrow in the southeast of the northeast is the TXO
20 proposed location.

21 Q Would you describe for us what Pennzoil's
22 order of development will be for the wells in this reservoir
23 after the Viersen No. 1?

24 A Okay.

25 Q What's the sequence?

1 A Pending approval of a field rules, we
2 plan to spud the Viersen No. 2 immediately. It is located in
3 the southwest of the southeast.

4 Then while that well is still drilling,
5 and pending getting all the -- everybody signed up in the
6 No. 1 B. E. Shipp Estate, we plan to spud that well.

7 After the drilling of the B. E. Shipp Es-
8 tate No. 1, we plan to move to the B. E. Shipp Estate No. 2
9 because we have planned to use the data from the No. 1 to
10 determine the best -- the absolute best location and prove
11 our location for the No. 2.

12 After that we plan to move another rig in
13 and drill the well, the subsequent -- that's already been
14 testified to, the Waldron No. 1 in the northwest quarter of
15 Section 3 last.

16 Q Would you concur in TXO's geologist's
17 opinion that the Grisso well location ought to be drilled
18 regardless of the outcome of the Shipp No. 1 Well?

19 A No, I do not. Our geological interpreta-
20 tion says that that will be at best a marginal producer.

21 Q Would you describe for us how you have
22 identified the Strawn reservoir in this area? What do you
23 as a geologist look for when you're trying to find new oil
24 discoveries such as this?

25 A It's been our experience in the area that

1 the thickness of the Strawn lime locally is extremely impor-
2 tant. Whenever the Strawn lime thickens in the Lovington
3 area porosity tends to develop along with that thickness and
4 we look for local changes in thickness in the Strawn lime.

5 It is a fact that the Strawn does thicken
6 generally to the northeast. It is a wedge-shaped deposit,
7 but local thickness changes, thickening locally causes --
8 helps -- it occurs with porosity development.

9 Q Would you take a moment now, Mr. Hair,
10 and go to TXO's exhibit, the cross section, which I think is
11 Exhibit Number Eleven?

12 A Uh-huh, yes.

13 Q You were present in the hearing room when
14 the TXO geologist described the structure map, Exhibit Num-
15 ber Eleven?

16 A Yes, the stratigraphic cross section.

17 Q I'm sorry, the stratigraphic cross sec-
18 tion.

19 Would you examine the base of the Strawn
20 that he has located on the cross section and give us your
21 interpretation of where you would identify the base of the
22 Strawn lime?

23 A We see a slight difference which becomes
24 significant as you move down dip.

25 The base of the Strawn lime in the Tip-

1 perary John State is right here.

2 Q You've indicated that by drawing a red
3 line on the exhibit?

4 A Red line across.

5 Q All right.

6 A Below that is a sandstone. We've exa-
7 mined mud logs showing that it is a sandstone.

8 The Pennzoil Viersen No. 1, the base of
9 the Strawn lime is as Mr. O'Hare indicated for his alterante
10 pick, not his original pick, and we also have sample data to
11 indicate that.

12 The TXO Production Carter we do not have
13 sample data. They apparently did not use it. I don't know.

14 We have picked the base of the Strawn
15 lime here, based on correlations, extensive correlations
16 through the area.

17 If that is used, the line which I'll in-
18 dicate in red, shows the thickening between the top of the
19 Strawn, base of the Strawn, between the Tipperary well and
20 the Pennzoil well, and also the Pennzoil well is much thick-
21 er in the Strawn lime than the TXO well, if this is used as
22 a base, as we believe it is, and it shows that this thicken-
23 ing is significant.

24 It also shows the other productive well,
25 the David Fasken Well thickens considerably from the Read

1 and Stevens well, again a productive well thicker than a dry
2 hole.

3 Q You've indicated to us that you have ex-
4 perience and you do as a regular course of practicing your
5 profession interpret and examine seismic information.

6 A That's true.

7 Q Would you turn now, sir, to Exhibit Num-
8 ber Twenty-five and identify for us with regards to this
9 particular 160 acres -- well, in fact, it's more than that,
10 it's most of Section 4 -- if you'll identify for us that ex-
11 hibit and first of all describe what information you've de-
12 picted on that exhibit.

13 A This exhibit is strictly to serve as a
14 location map. This is Section 4 outlined right there. It
15 shows our geophysical coverage over Section 4. You can see
16 that the lines are numerous running through Section 4 and we
17 have highlighted two lines, Line 87, which is an east/west
18 line, and Line 97, which is basically a north/south line.

19 There are two outlines on this map. We
20 call them biohermal outlines. We believe that these are al-
21 so algal bioherms, and based on seismic information, which
22 I'll talk about in just a second, we propose these as the
23 boundaries to these bioherms.

24 Three green arrows are shown again, the
25 same as the green arrows on the other map, the B. E. Shipp

1 Estate No. 1, the B. E. Shipp Estate No. 2, and TXO's pro-
2 posed location.

3 Okay. I'll go from here. I'd like to
4 talk first about Seismic Line 87. Seismic Line 87 is an
5 east/west seismic line; runs almost right down the middle of
6 the section, and it's this seismic line right here. That is
7 exhibit number --

8 Q Twenty-six.

9 A Exhibit Twenty-six, okay. On this over-
10 lay over the seismic line we have indicated an interval
11 which we have shown to be the Strawn limestone in this area.
12 It's indicated as the black line being the top of the Strawn
13 and the lower black line being the base of the Strawn. The
14 yellow interval in between is the Strawn limestone interval.

15 Q You've indicated that as an interpreta-
16 tion. Is that one that you have made based your experience?

17 A Yes, it's part of my interpretation.

18 That yellow line shows a thin interval of
19 Strawn. Moving to the east it thickens. It thins again,
20 thickens, then it thins again.

21 As you go along this section, you can see
22 we show the bioherm located right here as a thickening. We
23 go out of that bioherm into this zone, right here, which is
24 thinning. Then we go back to the thickening again in this
25 zone, and then out to a thin interval again.

1 The Pennzoil No. 1 Viersen is this well
2 right here. It was drilled, if you project this in, you
3 have to project along the strike of the interpreted bio-
4 herms, you can't just go straight north/south. It projects
5 in about shot point 172, which lies right here.

6 Q Just a minute, let me get oriented.

7 A Right.

8 Q Using Exhibit Twenty-six, which is Shot
9 Line 87, if I count over from 170 to the left two lines, I'm
10 at 172, and that's the one you're --

11 A That is correct.

12 Q And we follow that all the way down until
13 it intersects with the overlay that's shaded in yellow.

14 A That's correct.

15 Q And at that point what do we see?

16 A You see that that well was drilled into
17 the thickened portion of this reflector, right in here, and
18 as a result we found a thickened Strawn lime section. Velo-
19 city data which we got from the well indicated that we were
20 11 feet off on the Strawn. We predicted it to be 11 feet
21 thicker than it actually came in, which is about -- a little
22 less than a 5 percent error.

23 Q In terms of taking the seismic data, in-
24 terpreting it, and then having it confirmed or disproved by
25 actual drilling of the Viersen No. 1 Well into the Strawn

1 reservoir, would you describe for us what you have found?

2 A We have found that the Viersen again con-
3 firms within all reasonable probability of error, margin of
4 error, that it confirmed this interpretation almost to the
5 foot.

6 Something that you can also do to show
7 this, lift up the overlay without the interpretation. It's
8 still very clear, if you follow Shot Point 172 down, that
9 you're in a thickened zone in the Strawn, right here, and
10 you can see for yourself your thin, thick, thin, thick,
11 thin; it's very easy to see.

12 Q Would you go now to Line 97 and show us
13 your interpretation of that information?

14 A Line 97 is basically a north/south line;
15 runs right through here, through the western end of the two
16 bioherms that we've interpreted.

17 Again on the overlay the yellow is the
18 same depiction, the Strawn interval. You can see a thin,
19 thick, thin, thick, thin relationship again. That relation-
20 ship again is marked where these black lines intersect the
21 seismic line. Again, if you pick up the overlay you can see
22 thin, thickens right there, thins back down, thickens back
23 up, and thins again. It's very easy to see.

24 What this line serves to do, the reason
25 we brought two, it helps lend credence to the orientation

1 that these things lie in there northeast/southwest. We be-
2 lieve also that that is the orientation of these bioherms.

3 When you take the cuts of the thickened
4 section on the seismic line, it makes it very difficult to
5 put those in there any way other than the way that they are
6 drawn.

7 Now we have other data, obviously. We
8 have this line, then we have this line, all these will sup-
9 port that. We have used that data also but it's not presen-
10 ted here.

11 Q As a geologist familiar and experienced
12 with seismic interpretation of information, what is the pro-
13 cess that you go through in exploring and developing a
14 Strawn reservoir like this?

15 Do you start with the seismic data and
16 then see how the drilling confirms or rejects the opinions
17 you've made with the seismic information?

18 A Our areas of interest are based on
19 regional geologic study. When geologic study is completed
20 and we have identified areas of interest, we go in and shoot
21 those seismic to see if that confirms our geologic interpre-
22 tation; we drill and see if the subsequent data we obtain in
23 the wellbore confirms the seismic, and in this case, in the
24 Viersen No. 1 case it confirmed it almost perfectly.

25 Q In terms of regional geologic study, does

1 the seismic information that you have examined and inter-
2 preted, is that consisten with the regional geology you see
3 in Strawn reservoirs like this?

4 A Yes, it is.

5 Q Is it consistent with Mr. O'Hare's inter-
6 pretation for TXO that these porosity pods are elliptical in
7 shape and they generally trend from northeast to southwest?

8 A Yes, generally that is true. There are
9 places where the pods coalesce, are very close together, and
10 it gives the indication that maybe they trend this way, but
11 in reality individual pods still trend northeast/southwest.

12 Q When you've interpreted the seismic in-
13 formation and drawn your general outline of those two pods,
14 Mr. Hair, what is the -- your degree of accuracy to which
15 you are comfortable with regards to how those pods are
16 oriented and their particular shapes?

17 A Subsequently to the drilling of the Vier-
18 sen No. 1, which gave us precise velocity information,
19 thickness information, which we could tie back into the
20 seismic line, the degree of accuracy we feel right now is
21 extremely high.

22 Q Would you identify for us what is depic-
23 ted by the two pods shown on Exhibit Number Twenty-four --
24 I'm sorry, Twenty-five, in relation to the Isopach itself,
25 Exhibit Twenty-four, and you might want to hold one of those

1 up there.

2 A This pod and this pod represent this one
3 and this one. Those maps will not match exactly. This is a
4 porosity Isopach. This is based strictly on where we see a
5 thickening. There could be minor porosity out into the
6 thin; it would be very minor. It could be that the porosity
7 cuts off before you get to the edge. It's very erratic por-
8 osity; it's already been testified. That is a true state-
9 ment.

10 But in general, that outline will lie
11 somewhere between the zero and 20 foot contour on the Iso-
12 pach. We try to be optimistic.

13 Q The line or shape of the pod on Exhibit
14 Number 25, the one you're looking at now, represents which
15 thickness on the porosity contours?

16 A It represents somewhere between zero and
17 20 feet. There is no definite contour line there that it
18 represents.

19 Q Have you used Mr. Williams' engineering
20 calculations with regards to the distance he has determined
21 and calculated there to be some barrier, have you used that
22 information to either confirm or reject any of the interpre-
23 tations you've made about these Strawn reservoirs?

24 A The information, the 554 feet to a boun-
25 dary, fits very well the Isopach, the porosity Isopach on

1 Exhibit Twenty-four.

2 554 feet is approximately the 20-foot
3 contour line in either direction. We've, again we've said
4 that you cannot demonstrate which direction the boundary is
5 but it does not negate the geology. It helps confirm the
6 geology that there could be a boundary there in that direc-
7 tion.

8 Q In terms of an opinion about the location
9 that Pennzoil requests in the northeast quarter as opposed
10 to the one that TXO suggests in the southeast quarter of
11 this 80-acre tract, would you express to us your opinion as
12 a geologist as to which is the preferable location?

13 A Based on the seismic data in particular,
14 which we feel is more extensive than one wellbore, we feel
15 that the Pennzoil location is a better location. You can
16 see the TXO location is right on the edge of our thickening.
17 I think it could make a well, a marginal well. We do not
18 think it's in the optimum location.

19 You can see that the Pennzoil location is
20 located as close to the center of the pod as we can get it.
21 We think as narrow as these pods are, that's very critical
22 to be close to the center.

23 Q Do you have any opinion as to whether or
24 not the order of development with the eventual location of
25 the wells as you've described is the one that is going to be

1 in the best interests of all parties involved in terms of
2 giving them the optimum share of the reservoir underlying
3 each of their individual tracts?

4 A Yes, we feel that because of our inter-
5 pretation and the data that we made that interpretation
6 from, the wells here will drain this reservoir very
7 efficiently. We feel that by drilling the B. E. Shipp No. 2
8 after the B. E. Shipp No. 1 we will confirm the presence of
9 a pod in this location. We will have data there. People
10 can make an intelligent decision about whether to partici-
11 pate in this well or not, and it is the orderly fashion to
12 develop the reservoir.

13 Q When we look at the Shipp No. 1 Well in
14 the west half of the northeast quarter, do you anticipate a
15 drainage area for that well that will cross over and extend
16 into the south half of that section?

17 A Yes. As you can see here, this seismic
18 line almost divided the section in half, just about like
19 that, and you can see that if we drill the B. E. Shipp No. 1
20 it is going to drain part of the south half of that section.

21 Q I'd like you, sir, to take a moment and
22 compare the Isopach map that you have placed on the wall
23 with Mr. Williams' depiction of the radius circles that he's
24 testified from.

25 Can you express an opinion for us as a

1 geologist with knowledge of the reservoir, which of the well
2 location patterns proposed by either TXO or the one proposed
3 by Pennzoil is the one that more effectively conforms to the
4 reservoir as you believe it to be?

5 A Yes. As you can see, we believe the TXO
6 location is on the edge of the pod with the boundary being
7 just north of the location. This makes the effective drain-
8 age of the TXO well actually to the south and into the
9 southeast quarter rather than draining the northeast quar-
10 ter.

11 We feel like the Pennzoil location here
12 conforms to the pod. It drains only the northeast quarter,
13 not the southeast quarter, and is better situated to drain a
14 wider area than the TXO well, TXO location.

15 Q Would you make your recommendation as a
16 geologist to your management about a well location for this
17 Strawn influenced by the information Mr. Hair has given us,
18 Mr. O'Hare has given us for the Paddock and the Drinkard?

19 A We have not considered the Paddock and
20 the Drinkard as commercial targets in this area, so we have
21 no -- no indication (not clearly understood.)

22 Q In terms of risk factor, Mr. Hair, the
23 Commission, as you know, has a statutory maximum for a
24 penalty which it may apply to any nonconsenting working
25 interest owners of 200 percent. In relation to that penalty

1 can you express an opinion as to the penalty that ought to
2 be imposed to either location? Let's start with the TXO lo-
3 cation and then have you go to the Pennzoil location.

4 A Based on our interpretation the TXO loca-
5 tion certainly appears to be a risky well. It appears to be
6 on the edge of the pod and seems to have considerable risk
7 in the Strawn.

8 The Pennzoil location, while at the mo-
9 ment it appears to have significant risk because it's so far
10 from the producing well, when fitted into our development
11 plan lessens the risk considerably. We feel the risk is
12 lessened significantly; however, we feel the risk in the
13 area is inherent. There is a risk, as Mr. O'Hare testified,
14 that one location away on a standard 80-acre proration you
15 can encounter absolutely no porosity next to a well that had
16 a tremendous amount of porosity.

17 So we feel that in any Strawn well in
18 this area there is risk.

19 Q Let's look at Exhibit Number Twenty-four
20 and perhaps have you give us an example of the close prox-
21 imity to which wells can be drilled where we have one with
22 good porosity, good production, and then an immediate offset
23 that results in a dry hole.

24 A Yes, if you'll look in Section 34 of 16
25 South, 37 East, you'll see a number of wells there. There's

1 Q In looking at Exhibit Number Twenty-four,
2 Mr. Hair, do you have any knowledge of the well in Section
3 33 that Mr. O'Hare placed on his cross section? That was
4 the TXO dry hole in the Strawn. I think he attributed five
5 feet on his Isopach to that well.

6 Were you involved in the geology in this
7 area at the time that that well was being drilled?

8 A Yes, I was.

9 Q Had you for your own company or for your-
10 self made any predictions about the success of that drilling
11 effort prior to or while TXO was drilling that Strawn well?

12 A When that location was staked we examined
13 where it was to be drilled. We talked about it since we had
14 significant interest in the area. We predicted it would
15 probably be a dry hole.

16 Q Were Exhibits Twenty-four through Twenty-
17 seven compiled under your direction and supervision or rep-
18 resent your own interpretation of the geologic information
19 in the data?

20 A Yes, they do.

21 MR. KELLAHIN: We move the in-
22 troduction of Exhibits Twenty-four through Twenty-seven.

23 MR. QUINTANA: Exhibits Twenty-
24 four through Twenty-seven will be accepted as evidence.

25 MR. KELLAHIN: That concludes my

1 examination of Mr. Hair.

2 MR. QUINTANA: Before we have
3 cross examination, did you state the risk factor? I didn't
4 hear a risk factor there.

5 A I don't believe we did.

6 MR. KELLAHIN: I apologize.
7 I'd like to ask him a specific question on that.

8 Q In terms of a risk factor, Mr. Hair, you
9 talked generally about the relationship of the two loca-
10 tions.

11 Do you have an opinion with regards to an
12 actual percentage number to be applied in either case?

13 A Yes. I believe that because of the risk
14 inherent in the area the statutory maximum of 200 percent is
15 the best penalty to apply in this case.

16 Q And would that apply for all the well lo-
17 cations that are proposed in the northeast quarter of the
18 section?

19 A Yes.

20 MR. QUINTANA: No. questions.
21 Mr. Vandiver, you may proceed with cross examination.

22 MR. VANDIVER: Mr. Quintana, I
23 propose, Mr. Quintana, that we break for lunch since it's
24 noon and I don't think that if we go through the lunch hour
25 that we will be through at 1:00 o'clock.

1 I'm going to put on three re-
2 buttal witnesses.

3 MR. QUINTANA: Fine. We'll
4 break for lunch and reconvene at 1:15.

5
6 (Thereupon the noon recess was taken.)

7
8 MR. QUINTANA: You may proceed.

9 MR. VANDIVER: Thank you.

10

11 CROSS EXAMINATION

12 BY MR. VANDIVER:

13 Q Mr. Hair, you have heard Mr. Williams'
14 testimony previously this morning, is that correct?

15 A That is correct.

16 Q He testified that he could not testify as
17 to any possible drainage by your Viersen No. 1 draining the
18 east half northeast quarter?

19 A That's correct.

20 Q Why couldn't he testify to that?

21 A Because he did not prepare the geological
22 exhibit that shows the (not clearly understood.)

23 Q Do you have an opinion as to whether or
24 not the Viersen No. 1 will drain oil from the east half
25 northeast quarter?

1 A I think from the Isopach that we've made
2 it is fairly obvious that minor amounts of drainage will oc-
3 cur in the northeast quarter, yes.

4 Q What do you mean by minor amount?

5 A I think if we draw lines on there, which
6 I had not done, reflecting the half section boundary, you
7 will see there is not a significant -- according to our in-
8 terpretation there is not a significant amount of porosity
9 in the northeast quarter under TXO's location until you move
10 into the other pod, the northern pod that we have in there.

11 Q And that's based upon your interpretation
12 of your seismic data, is that correct?

13 A Absolutely.

14 Q You don't have a seismic line running
15 through TXO's proposed location, do you?

16 A We do not have one with a shot point di-
17 rectly on TXO's location, no.

18 Q Where is the closest shot point?

19 A I'll have to get up and look at the map.
20 TXO's proposed location is right here.
21 The closest shot point to me appears, well, I'm going to say
22 150 feet away; however, the projection of the TXO location
23 along strike brings it down, oh, a little farther away.

24 Q And that shot point found an anomaly?

25 A At the shot point we projected TXO's lo-

1 cation into we thought it to be just on the very edge of the
2 anomaly.

3 Q What -- what does the anomaly indicate?

4 A A thickening of the Strawn limestone.

5 Q And does that indicate increased poros-
6 ity?

7 A All I can testify to is in the area of
8 studies that I've made, where there's a thickening of Strawn
9 lime there is porosity that occurs; it's not a one to one
10 relationship.

11 In other words, if the thickness in-
12 creases ten feet, that doesn't mean you'll have ten feet
13 more or less porosity.

14 Q What's the method for converting the
15 seismic data to porosity data?

16 A There is no way to convert to porosity
17 data, only thickness data.

18 Q You found an anomaly along that, well,
19 it's not a section line, but the line between the east half
20 northeast quarter and the east half southeast quarter, is
21 that correct?

22 A Here?

23 Q No, I'm talking about the shot point
24 we're discussing.

25 A Right here?

1 Q Yes.

2 A It is on the very edge of the anomaly,
3 yes.

4 Q How do you know that the porosity pinches
5 out as you go north of that shot point?

6 A As I said in my previous testimony, poro-
7 sity occurs where there's a thickening. These are thicken-
8 ings.

9 I also stated that the porosity on our
10 porosity Isopach did occur north in a very thin amount but
11 this is not a -- has no relationship to porosity other than
12 where the stuff thickens, where the lime thickens, there's a
13 better chance to find porosity. Porosity in the thin zone
14 would be either very thin or nonexistent.

15 Q But your porosity Isopach is based on
16 your interpretation of your seismic data.

17 A No. It is based on my interpretation of
18 the geology of the area plus the outline of the porosity
19 units themselves are in an orientation which conforms to our
20 interpretation of the seismic data, yes.

21 Q How do you know the porosity does not
22 thicken as you go north of that shot point?

23 A We do not know. No one knows. We infer
24 from the geology of the area that you have to have a thicken-
25 ed limestone section to have porosity. We infer from our

1 interpretation based on seismic data, which fairly well
2 crisscrosses this area that that does not thicken in that
3 direction, it thins, as has been shown on these two seismic
4 lines.

5 Q But that's an inference based upon your
6 interpretation.

7 A Oh, absolutely.

8 Q And there's no evidence that the porosity
9 does not thicken as you go north of that shot point.

10 A Only through my regional geologic
11 studies.

12 Q And isn't it true that TXO's proposed lo-
13 cation is closer to that anomaly than the Viersen No. 1
14 well?

15 A I'm not sure I understand that question.
16 Closer to that anomaly, the Pennzoil Viersen No. 1 is lo-
17 cated right in the middle of the anomaly. The TXO location
18 is right on the edge of it.

19 No, I don't think it could be said it's
20 closer.

21 Q But isn't it closer to that shot point?

22 A Oh, absolutely, yes.

23 Q So isn't it just as possible that there's
24 as much porosity, the thickness of the porosity, that the
25 TXO proposed location is just as thick as the porosity at

1 the Viersen No. 1?

2 A Based on my experience the probability of
3 that is no.

4 Q Isn't it possible?

5 A I suppose it is possible.

6 Q Did you do the seismic that you've shown
7 on your exhibit? Have you done anything other than inter-
8 pret that seismic?

9 A Okay. In our company we work as a team
10 effort. There was a geophysicist involved with this. Our
11 geophysicists are involved in acquiring data, processing da-
12 ta, making sure it's reasonable. Then the geologist and the
13 geophysicist work together on an interpretation, which in-
14 corporates the regional geology with the geophysics.

15 So, yes, I worked on it. Yes, someone
16 else worked on it.

17 Q Since there is, Mr. Hair, no seismic data
18 over the TXO proposed location, isn't it true that Penn-
19 zoil's seismic data does not necessarily condemn TXO's pro-
20 posed location?

21 A It condemns the location by interpreta-
22 tion, by having data at that exact point. There is no geo-
23 logical or geophysical data at the exact well location and,
24 no, you cannot condemn the space.

25 Q Based upon your seismic study, isn't it

1 possible that the northeast quarter is included within the
2 same reservoir from which the Viersen No. 1 Well was pro-
3 ducing?

4 MR. KELLAHIN: I'm going to ob-
5 ject to the question, Mr. Examiner. He's asked whether it's
6 possible.

7 I think most anything is pos-
8 sible.

9 We speak to experts in terms of
10 questions that are framed with the phrase in reasonable pro-
11 babilities based upon his experience, and I would request
12 that the question be so phrased.

13 MR. QUINTANA: Will you please
14 rephrase the question?

15 Q Based upon your seismic study is it -- is
16 it not probable that the Pennzoil Viersen No. 1 Well is pro-
17 ducing from the same Strawn reservoir that encompasses the
18 northeast quarter?

19 A No, I don't think it's probable.

20 Q If you -- I have -- what are the numbers
21 of these exhibits, Line 97 --

22 A These aren't numbered.

23 MR. KELLAHIN: Let me see.

24 THE REPORTER: Line 97 is Exhi-
25 bit Twenty-seven.

1 MR. KELLAHIN: The other one is
2 Twenty-six.

3 Q Which -- which line on Exhibit Twenty-
4 five is Line 97? Is that the east to west?

5 A No, it's the north to south, as indicated
6 on the top of the --

7 Q Okay. All right, I see. Can you prove
8 from your study that the -- what you have shown on those two
9 exhibits is the Strawn formation?

10 A Yes. Well, we can prove that it is the
11 Strawn formation based on the velocity information obtained
12 in the Viersen No. 1, which, as I testified previously,
13 matches exactly with the seismic section.

14 Let me rephrase that: Exactly within 11
15 feet, right around a 5 percent error, which I think is ac-
16 ceptable at this depth.

17 Q Historically how successful has seismic
18 data been in establishing stratigraphic production?

19 A Without being argumentative, could I ask,
20 are you referring to this area, any area, where are we talk-
21 ing about?

22 Q Any area.

23 A Any area. Oh, in many areas it's been
24 successful.

25 Q How about in this area?

1 A In this area, yes, it has been success-
2 ful.

3 Q What is the basis for the -- what's this
4 number, I'm sorry?

5 MR. KELLAHIN: That's Exhibit
6 Twenty-four.

7 Q Exhibit Number Twenty-four, which is your
8 Strawn porosity, what's the basis for the two reservoirs
9 shown?

10 A In Section 4?

11 Q Yes.

12 A The basis for the two reservoirs shown is
13 based on our seismic interpretation.

14 Q And the only well information that you
15 have to base that on is the Viersen No. 1, is that correct?

16 A We have the Viersen No. 1. We have the
17 Tipperary dry hole, which helps us confirm our work.

18 Yes, in this area that is the geologic
19 information available to anyone.

20 Q What's the polarity of the seismic data
21 that you're working from?

22 A I'm not sure.

23 Q Could be positive or negative?

24 A I just don't know. We have taken the
25 processing informatoin of the lines, it's proprietary, and I

1 do not remember what it is.

2 Q Well, isn't it just as possible that
3 you're picking the wrong seismic event in picking up the
4 Strawn formation if you don't know what the polarity is?

5 A When the study was done the polarity was
6 on the lines. Yes, we matched the polarity to the velocity
7 information that we obtained in the Viersen. Without it on
8 there, I cannot remember what it is.

9 But we know what the polarity is, yes.

10 Q What's the proposed location of your well
11 in Section 3, which I believe you referred to as the --
12 well, now I can't remember the name of it.

13 A The No. 1 Waldron?

14 Q Yes. What's the footage location of that
15 well?

16 A I do not have it in front of me. I'll
17 have to find it.

18 It appears to me to be 1980 feet from the
19 north line and 330 feet from the west line.

20 I will also state that that is not a pro-
21 posed well at this time; no one has -- we have not proposed
22 that well to the partners. It is just part of our develop-
23 ment plan. That location is subject to amendment.

24 Q What's Pennzoil's interest in the west
25 half northwest quarter of Section 3?

1 A I have no idea. A landman would know
2 that.

3 Q Is it your testimony that -- that there's
4 a barrier between these two porosity pods you've shown on
5 your Strawn porosity maps?

6 A Based on our interpretation based on
7 geophysics and our knowledge of the area, we feel that there
8 probably is a barrier; it's possible that there is not.

9 Q Excluding the seismic data and based
10 solely on the data from the Viersen No. 1 Well and the other
11 Strawn wells in the area, would you disagree with the poro-
12 sity pods shown on Mr. O'Hare's map, which is TXO's Exhibit
13 Number Ten?

14 A I cannot agree or disagree. As Mr.
15 O'Hare stated, the porosity pod can be drawn off the geology
16 in any form or manner, so we disregard geophysics.

17 Q But your testimony about the area does
18 not differ from Mr. O'Hare's significantly, does it?

19 A His general description of the pods in
20 the area I agree with.

21 Q They're very small, isolated pods?

22 A In certain areas; in other areas they
23 coalesce and form much larger systems. I'm speaking speci-
24 fically of Lovington Northeast Field, about four and a half
25 miles north of here.

1 Q Based upon your study of the area, what
2 is the -- isn't it true that TXO's proposed location is the
3 best location for defining the limits of the Shipp Field?

4 A That may or may not be true. It could
5 either confirm our map or it may not, but I cannot testify
6 to that.

7 Q Isn't Pennzoil's location in effect a
8 wildcat location?

9 A As discussed in our development plan, we
10 do not feel it's a wildcat location because we do intend to
11 drill the B. E. Shipp State No. 1 first. We intend to use
12 information from that well to drill the B. E. Shipp State
13 No. 2. It will be a standard development well. Everything
14 is confirmed up to that point; I'd say, no, it's not a wild-
15 cat.

16 Q You testified earlier that you felt that
17 Pennzoil's proposed location was a significant risk, is that
18 correct?

19 A I said that Pennzoil's location had ex-
20 actly the same risk as any other Strawn well in the area,
21 which is significant due to the fact that porosity can pinch
22 out in one standard proration unit.

23 Q Isn't it true that TXO's proposed loca-
24 tion has less risk involved in developing the Strawn,
25 through economic producers?

1 A I cannot testify to that because in our
2 interpretation it has much ore risk because they're drilling
3 into a non-anomalous area.

4 Q If we consider that what you've shown in
5 the northeast quarter represents two different porosity pods
6 and if we consider that the northernmost porosity pod shown
7 on your map is untested, wouldn't that indicate that your
8 location is a wildcat?

9 A As I previously stated, we are going to
10 drill the B. E. Shipp first, which should prove that that
11 pod is there, or disprove it; however you like to look at
12 it, in which case that is a standard offset to a well and is
13 not a wildcat location.

14 Q If TXO's application is approved in this
15 case, will Pennzoil go nonconsent in drilling their location
16 in the southeast quarter of the northeast quarter?

17 A I can only speak as to a recommendation
18 I'd make to management; how management would take that re-
19 commendation, I don't know.

20 I would recommend that Pennzoil go non-
21 consent on that location.

22 MR. VANDIVER: I'll pass the
23 witness.

24 MR. QUINTANA: Any further
25 questions of the witness?

1 MR. KELLAHIN: No, sir.

2 MR. QUINTANA; I have no ques-
3 tions of the witness at this time.

4 Does anyone else have questions
5 of the witness?

6 The witness may be excused.

7 MR. KELLAHIN: Mr. Quintana,
8 that concludes our direct examination.

9 Mr. Vandiver, do you plan to
10 bring rebuttal witnesses?

11 MR. VANDIVER: Yes, sir, I do.
12 I'll ask Mr. Wood to come to the stand.

13 MR. QUINTANA: All the
14 witnesses have been sworn?

15 MR. VANDIVER: All but one.
16 One has not. Mr. Wood was but we'll -- we'll swear the
17 other one --

18 MR. QUINTANA: Will you have
19 him stand up at this time and we'll swear them at this time?

20
21 (Witnesses sworn.)

22
23 MR. QUINTANA: You may proceed,
24 Mr. Vandiver.

25

1 DEEN WOOD,
2 being called as a witness and being duly sworn upon his
3 oath, testified as follows, to-wit:
4

5 DIRECT EXAMINATION

6 BY MR. VANDIVER:

7 Q Would you state your name, please, sir?

8 A Deen Wood.

9 Q And what's your occupation and by whom
10 are you employed?

11 A I'm a petroleum engineer. I'm employed
12 by TXO Production Corporation.

13 Q Have you previously testified before the
14 New Mexico Oil Conservation Division and have your qualifi-
15 cations been accepted and a matter of record in the OCD?

16 A Yes, they have.

17 MR. VANDIVER: Mr. Examiner, I
18 would tender Mr. Wood as an expert petroleum engineer.

19 MR. QUINTANA: Mr. Wood, when
20 did you last testify?

21 A It was a year, a year and three months.
22 He remembers, Mr. Kellahin.

23 MR. KELLAHIN: I have no objec-
24 tion to Mr. Wood's qualifications.

25 MR. QUINTANA: Mr. Wood is con-

1 sidered a qualified petroleum engineer to testify.

2 Q Mr. Wood, you have heard the testimony of
3 Mr. Williams this morning, or is that correct?

4 A Yes, I have.

5 Q And you have also examined the exhibits
6 that he -- that have been presented through him, is that
7 correct?

8 A Yes, I have.

9 Q Do you have any -- have you done an
10 engineering study of the area in question?

11 A Based on the information available to us,
12 I have.

13 Q And do you differ with any of the
14 interpretations presented by Mr. Williams?

15 A I do. I have reached a different
16 conclusion.

17 What I -- in my study I find that based
18 on Mr. O'Hare's Isopach map, using a 6 percent porosity
19 rather than a 12 percent Mr. Williams used, under the east
20 half of the northeast quarter, there is approximately
21 600,000 barrels of oil.

22 That oil is oil in place; not all of it
23 could be recovered; nevertheless, it is a considerable
24 amount of oil and certainly worth drilling a well for, well
25 within our economic criteria.

1 I looked at the matter of drainage. At
2 the time I examined the information that was available to us
3 what we had was the testimony and exhibits from the previous
4 Pennzoil testimony that was presented as Exhibit -- Pennzoil
5 Exhibits Number Seventeen and Eighteen in this hearing.

6 I have no great differences with Mr. Wil-
7 liams on the techniques that he used, but I do have some
8 question about the validity of the conclusions that he
9 reached.

10 I have to offer an exhibit.

11 MR. VANDIVER: Let's mark this
12 as TXO's Exhibit Fifteen. Do you have a copy?

13 A This is -- you have a copy.

14 MR. VANDIVER: Excuse me just a
15 minute. I'm lost under this pile.

16 Q Now I'll hand you what's been marked for
17 identification as TXO's Exhibit Number Fifteen and ask you
18 what that is, please?

19 A This is a drainage radius calculation
20 based on Darcy's Law. It is the same calculation Mr. Wil-
21 liams presented in Pennzoil Exhibit Number Eighteen.

22 You'll notice, Mr. Examiner, that the
23 numbers that I used in my calculations are very close to the
24 same numbers that Mr. Williams used in his; however, the
25 bottom line, the drainage radius differs by over an order of

1 magnitude.

2 What I want to point out here is that
3 very small differences in any one of the variables, much
4 less several, can lead to tremendous difference in the an-
5 swer because it involves the natural logarithm function --

6 My calculated drainage radius was 780
7 feet.

8 Q And that's compared with Mr. Williams'
9 calculation of 9090 feet?

10 A That is correct. That is a considerable
11 difference, in my opinion.

12 Q What is the -- what creates the large
13 disparity between your calculations?

14 A Basically, the biggest difference is
15 caused by the difference in the oil viscosity and formation
16 volume factors that Mr. Williams and I used. My, I'll call
17 them fluid properties, my fluid properties were taken from
18 standard correlations out of the Society of Petroleum
19 Engineers Monograph Number Five.

20 Mr. Williams used PVT data from oil in a
21 Strawn reservoir a number of miles away.

22 What I want to point out is that oil from
23 two reservoirs, even from the same zone, can have remarkably
24 different PVT properties, and in this case what I want to
25 further point out is even small differences can cause tre-

1 mendous differences in drainage radius.

2 For instance, Mr. Examiner, I took Mr.
3 Williams' calculation and left everything the same except
4 for the formation volume factor. He used formation volume
5 factor of 1.42.

6 I changed that to the formation volume
7 factor that I used of 1.38 and came up with an answer that
8 was 34.8 percent different. 0.04ths on that one number made
9 a difference of 35 percent.

10 So I'm not going to claim that my 780
11 feet is a true and accurate number. It is my best estimate.
12 But what I do want to point out here is that these drainage
13 radius calculations, due to the sensitivity of the equation
14 to the variables that go in it, are really not worth very
15 much, and furthermore, I believe that if Pennzoil really be-
16 lieved that they were going to drain 9000 feet, they would
17 not be drilling or proposing to drill two wells in the same
18 pod, both within 1550 feet of the Viersen No. 1. Their
19 drainage radius will be much shorter than that.

20 However, I would not contest with Mr.
21 Williams that given our interpretation of the geology, that
22 they will be draining a considerable portion, although not
23 all, of our -- of the acreage under our proposed location.
24 They will drain some of it and they will pressure deplete
25 some of it, leaving some oil in place that would otherwise

1 have been recovered by our proposed well.

2 The next point I would like to bring up
3 related in a way to drainage, inasfar as it affects the de-
4 finition of the reservoirs, is the calculation for the dis-
5 tance to the anomaly.

6 Once again the technique used is stan-
7 dard; however, just picking out one particular variable, the
8 porosity, which Mr. Williams used as 12 percent, I and sev-
9 eral others at TXO independently reached different porosity
10 numbers and a number that we believe is correct is much
11 closer to 6 percent.

12 If a 6 percent porosity is used that 554
13 feet becomes 788 feet, which expands the reservoir much fur-
14 ther than their geological interpretation would allow or
15 their engineerng calculations.

16 MR. QUINTANA: 700 and what?

17 A I believe it was 788 feet with the 6 per-
18 cent porosity. No other variables changed. The viscosity
19 could change also, but again that was taken from PVT data
20 from a different oil reservoir.

21 Also, as Mr. Williams pointed out in this
22 testimony, the viscosity and also formation volume factor
23 will change with time and pressure, and, of course, that's
24 -- this snapshot of the reservoir at it was at one particu-
25 lar point in time, will change along with it.

1 Time has not allowed, but the proper ap-
2 proach to the use of these two equations would have been an
3 extended study over a period of time with BBT and pressure
4 data from the Viersen No. 1, and, of course, that has been
5 impractical in this particular case.

6 The other thing I'd like to point out on
7 that exhibit right here -- which one is that?

8 Q This one?

9 A Yep. Mr. O'Hare's exhibit, which is lab-
10 eled TXO Exhibit Number Eight, if the Examiner will look in
11 the upper righthand corner in Section 34, the Casey Strawn
12 Field --

13 MR. QUINTANA: Which TXO exhi-
14 bit?

15 A Exhibit Number Eight.

16 MR. QUINTANA: Okay.

17 A You'll notice that those wells were drill-
18 led on 40-acre spacing, quite close together, and that the
19 cumulative production from each of the wells on the study
20 there is tremendous. The smallest well cumed 257,000 bar-
21 rels of oil, which is better than twice, or about twice what
22 we think that you needed to drill the well for an adequate
23 economic return.

24 So from that point of view I -- that fur-
25 ther reenforces my belief that we certainly don't have any

1 problem with the risk involved in drilling the proposed TXO
2 location. The risk, there is risk there just from a geolo-
3 gical point of view, but those guys up there have drilled
4 some tremendous wells.

5 In conclusion, I'd like to say that the
6 reservoir, based on my evaluation, is not as small in the
7 Viersen area as Pennzoil believes, and that we have a tre-
8 mendous amount of recoverable oil under our proposed loca-
9 tion that we deserve to get, and that if our well is not
10 drilled, we will leave some oil in the ground that will not
11 be recovered by the Viersen No. 1, and that that will be
12 tremendous waste.

13 MR. VANDIVER: I'll pass the
14 witness, Mr. Quintana.

15 MR. QUINTANA: Mr. Kellahin.

16 MR. KELLAHIN: Thank you, sir.

17
18 CROSS EXAMINATION

19 BY MR. KELLAHIN:

20 Q The barrels of oil in place that you cal-
21 culated when you began your testimony, Mr. Wood, were based
22 upon your geologist's Ispach, Exhibit Number Ten?

23 A Yes, sir, it was.

24 Q Does that volume of oil in place repre-
25 sent the oil you calculate using that Isopach that under-

1 lies the northeast quarter?

2 A No, the east half --

3 Q The east half of the northeast quarter.

4 A -- of the northeast quarter.

5 Q All right. In addition to using your
6 geologist's Isopach you have a difference of opinion with
7 Mr. Williams about the percentage porosity.

8 A That is correct.

9 Q You used 6 percent.

10 A That is correct.

11 Q And he used 12 percent.

12 A Right. Had I used 12 percent you could
13 effectively, a little bit over, double, the amount of oil
14 under our lease, or our proposed location.

15 Q In terms of running through the computa-
16 tion and the calculation, Mr. Wood, what is the relationship
17 of the porosity percentage used in terms of the resulting
18 total oil in place that's calculated? As a porosity number
19 goes up what happens to the oil in place number?

20 A If -- it increases. If you double the
21 porosity, you double the oil in place.

22 In addition, an increasing porosity will
23 favorably affect the water saturation, so actually doubling
24 the porosity would do a little more than double the water
25 saturation.

1 Q If you'd run through the calculation us-
2 ing a 12 percent porosity, what would happen to the end re-
3 sult in terms of barrels of oil in place?

4 A It would be much greater than that which
5 I calculated.

6 Q And your calculation again is based upon
7 Mr. O'Hare's --

8 A That is correct.

9 Q -- Isopach. Did you make a similar cal-
10 culation using the porosity map that Mr. Greg Hair from
11 Pennzoil testified to from the September hearing?

12 A No, I did not.

13 Q In terms of finding the distance to the
14 anomaly using the calculation, you've got approximately 788
15 feet?

16 A That is correct.

17 Q I believe Mr. Williams testified the
18 distance was 554.

19 A Correct.

20 Q All right. And then the last number was
21 Mr. Williams had a number for the drainage calculation of
22 something in excess of 9000 feet?

23 A Correct.

24 Q And what is your corresponding number?

25 A 780 feet.

REDIRECT EXAMINATION

BY MR. VANDIVER:

Q Mr. Wood, you heard the testimony this morning about -- and you've testified about the anomaly or barrier, is that correct?

A Yes, sir.

Q And you testified that it was, what, 788 feet?

A Correct, that is my calculation.

Q Is there any way, based upon the formula you used, to determine what direction that barrier is in?

A No, there's no way to determine what direction it is. It is possible that it isn't a barrier. It could be a -- well, it could be caused -- there are other things that can cause that type of -- of anomaly.

A fracture system in tight rock can cause that type of thing.

Layering in a reservoir can cause -- can cause that type of thing. For instance, you -- if your pressure transient pulse was particularly strong in one zone and all of a sudden that zone played out, then you're liable to see a barrier there, whereas there some of the other strata in the producing interval could be much more continuous and extend further.

1 I do not know this to be the case; how-
2 ever, that is a possibility, and that zone is very thick
3 with several intervals in it that have more developed poro-
4 sity than others.

5 Q Mr. Wood, based upon your study of the
6 area, what is the best location for -- now, for defining the
7 limits of the Shipp Field?

8 A The best location, the location with
9 least risk, and the location that reduces waste, is the pro-
10 posed TXO location.

11 MR. VANDIVER: I'll pass the
12 witness, Mr. Quintana.

13 MR. KELLAHIN: Nothing further,
14 thank you.

15
16 RE CROSS EXAMINATION

17 BY MR. QUINTANA:

18 Q Mr. Wood, Wood or Woods?

19 A Wood.

20 Q Mr. Wood, based upon your experience in
21 the area, dealing with Strawn production, what type of ano-
22 malies have you seen in that area?

23 A Not, really, not very many. Most of the
24 anomalies are porosity pinchouts. In this case it's really
25 difficult to tell. It's probably, probably is a porosity

1 pinchout but I couldn't say for sure whether that entire
2 zone just suddenly pinched out. That would seem unlikely to
3 me, due to the fact that you have several zones that do have
4 porosity, distinct zones with porosity development, which
5 you can see on the logs.

6 It's quite possible that one or two of
7 those suddenly pinch out and another one that's capable of
8 prolific production extends and covers a much wider area.

9 Q So basically what you're trying to tell
10 me is the anomalies you have seen were porosity pinchouts.

11 A Yes, as far as can be determined.

12 Q Bear with me.

13 A Actually permeability pinchouts would pro-
14 bably be a better way of putting it.

15 Q When you calculated, using Pennzoil's Ex-
16 hibit Number Nineteen, when you reworked the radius of the
17 anomaly, why did you not change the viscosity of the oil in
18 that calculation as you did on TXO Exhibit Number Fifteen?

19 A I was simply trying to illustrate what
20 one -- what a difference in one variable could cause the
21 bottom line, how much the bottom line would change with a
22 small or medium difference in one single variable.

23 Q All right. As an engineer -- as an en-
24 gineer in your company and -- as an engineer in your com-
25 pany, would it not be to your advantage to wait for the

1 drilling of the Shipp No. 1 Well on the west half of the
2 northeast quarter in order to obtain additional data? Your-
3 self as an engineer, wouldn't you rather wait for additional
4 data from which to make determinations and recommendations
5 to your -- your bosses in order to determine where to place
6 another well?

7 A Well, any time the more data you've got,
8 of course, the better off you are, but in this case we've
9 got the maps that we believe in and the Viersen Well, we're
10 directly offset to the Viersen Well, and that's pretty good
11 information to go ahead and drill a well on, especially when
12 drainage could be a problem.

13 The well that they propose to drill would
14 be further away from us, I believe, than the Viersen Well
15 is.

16 Q To your knowledge, would you confirm this
17 again, TXO has signed the AFE to drill that Shipp No. 1
18 Well?

19 A Yes, sir, to my knowledge.

20 Q To your knowledge do you know if TXO is
21 operating under any time constraints in order to drill your
22 proposed well?

23 A Only insofar as certain agreements go.
24 I'm not familiar with all the terms of the farmouts and
25 leases and things but that, as far as I know, would be the

1 only problem, is trying to get the well drilled before we
2 had leases that expired, and I'm not aware of what the
3 terms, how short a time period we're talking about.

4 Q If I were to take your -- assuming that I
5 were to take your calculations and say that the Shipp No. 1
6 Well would be draining the south half of the -- the south --
7 the southern part of the east half of the northeast quarter
8 where your proposed well is, how much drainage do you think
9 would occur between the time that the Shipp No. 1 Well would
10 be drilled and the data obtained from there before another
11 well could be drilled, either your well or the Pennzoil pro-
12 posed well?

13 A How much the Viersen would drain or the
14 Shipp No. 1?

15 Q The Shipp No. 1. Do you think there
16 would be substantial drainage?

17 A Well, between that and the Viersen both,
18 there could be some substantial drainage. I'm not really, I
19 don't know really what the time frame would be, the longer
20 the worse, but as prolific as their well is, it could cause
21 some substantial drainage.

22 MR. QUINTANA: No further ques-
23 tions.

24 Any further questions of the
25 witness?

1 MR. VANDIVER: Yes, sir, just
2 one or two more.

3

4

REDIRECT EXAMINATION

5 BY MR. VANDIVER:

6 Q Mr. Wood, the reason that you want to
7 drill this well, is it not, is that you feel that it's a
8 good location to establish an economic well.

9 A Yes, sir, low risk, lower risk.

10 Q And you feel that there is -- that it's
11 -- do you feel that it's probable that you're being drained
12 from the Viersen No. 1?

13 A Yes, sir.

14 Q And you don't want to wait because you
15 don't want to be drained, is that correct?

16 A That is correct.

17 Q If I could ask you one more question.
18 You're familiar with the cross section, Exhibit Eleven,
19 TXO's Exhibit Eleven?

20 A Yes, sir.

21 Q And have you examined the log of the
22 Viersen No. 1 Well?

23 A Yes, sir, I have.

24 Q Is there any indication on that log that
25 there's an average 12 percent of porosity?

1 A No, sir, there are very few -- very few
2 intervals on the log that exhibit 12 percent porosity.

3 Q And what would -- what do you think would
4 be a better average?

5 A 6 percent.

6 MR. VANDIVER: I'll pass the
7 witness.

8 MR. KELLAHIN: Nothing else.

9 MR. QUINTANA: I have one more
10 question.

11

12 REXCROSS EXAMINATION

13 BY MR. QUINTANA:

14 Q This is a hypothetical question and the
15 reason I ask it is not because I'm deciding one way or an-
16 other, it's because I have to look at all my options.

17 Should it be decided that I make a deci-
18 sion to allow the Shipp No. 1 Well to be drilled first,
19 would you object to it if there was some type of restraint
20 put on the Shipp No. 1 Well so you would not -- there would
21 not be any drainage during the time this other well is being
22 drilled. Let's say it takes three months to drill the well,
23 or two months, you know, Pennzoil is going to have a reason
24 to get the well drilled and getting that out if they have
25 some type of a short term penalty placed on the Shipp No. 1

1 Well so as to not cause drainage to occur, would your com-
2 pany be objectionable to that?

3 A I can't speak for my management but as
4 far as what I would recommend, it would be that and perhaps
5 some restraint on the Viersen No. 1. The Viersen, the di-
6 rect offset well is, in the immediate future and until more
7 is known about the Shipp No. 1 location, the Viersen No. 1
8 is a clear and immediate problem inasfar as drainage is con-
9 cerned.

10 Q Thank you.

11 MR. QUINTANA: Any further
12 questions of the witness?

13 MR. VANDIVER: No, sir.

14 MR. QUINTANA: If not, you may
15 be excused.

16 MR. VANDIVER: Mr. Quintana, I
17 believe I'll just have one more witness.

18 MR. QUINTANA: You may proceed.

19

20 EDDY PEARSON,

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

23

24

25

DIRECT EXAMINATION

1
2 BY MR. VANDIVER:

3 Q Would you state your name, please, sir?

4 A Eddy Pearson.

5 Q Where do you live, Mr. Pearson?

6 A Midland, Texas.

7 Q What's your occupation?

8 A Geophysicist.

9 Q By whom are you employed?

10 A TXO.

11 Q You'll have to speak up.

12 A TXO.

13 Q How long have you been so employed?

14 A I've been with TXO for nineteen months.

15 Q Would you briefly -- you've never --
16 you've never testified before the Oil Conservation Division
17 before?

18 A No, I have not.

19 Q Would you please tell the Examiner about
20 your education?

21 A I graduated from Texas Tech University
22 with a BS in geophysics in May, 1981, and at that point I
23 went to work for Getty Oil Company for three years, and as I
24 said, I've been with TXO for nineteen months.

25 Q Have you had an opportunity to review the

1 exhibits submitted by Pennzoil with reference to their geo-
2 physical data?

3 A Yes, I have.

4 Q And have you -- have you reviewed other
5 geophysical data in the area in question?

6 A Yes, I have.

7 MR. VANDIVER: Mr. Examiner, I
8 would tender Mr. Pearson as an expert geophysicist.

9 MR. QUINTANA: Mr. Kellahin,
10 any objections?

11 MR. KELLAHIN: (Not clearly un-
12 derstood.)

13 MR. QUINTANA: The witness is
14 considered a qualified geophysicist.

15 You may proceed.

16 Q Mr. Pearson, you've heard Mr. Hair's tes-
17 timony this afternoon and this morning concerning their
18 seismic data surrounding the area in question, is that cor-
19 rect?

20 A That's correct.

21 Q Do you have any -- do you differ in any
22 way from his interpretation of the data being submitted?

23 A Well, first of all, I haven't indepen-
24 dently established that their reflection that they're map-
25 ping is indeed the Strawn. I haven't had access to that in-

1 formation.

2 I was made -- this data was made avail-
3 able to me by Pennzoil last month that I worked in their of-
4 fice and I constructed a map. Have you got that map with
5 you?

6 I interpreted the seismic data in Penn-
7 zoil's office since it's proprietary data, and I just basic-
8 ally took their word for it that the event that they were
9 mapping was the Strawn, and based upon my interpretation,
10 using their Strawn pick, I can't validate that there's a
11 separation between the two porosity pods.

12 I'm basically in agreement with Mr.
13 hair's interpretation of the seismic data but I feel he's
14 being unduly pessimistic about the qualities of the seismic
15 data at our location and I'd -- I'd just like to point out,
16 if I could, --

17 MR. QUINTANA: Could you step
18 back that way so that everybody could see?

19 A The seismic anomaly that Pennzoil drilled
20 based on its seismic line was at Shot Point 175, which is
21 this anomalous feature here, and I'd just like to point out
22 that our location north of this line is parallel with this
23 seismic anomaly and based upon projecting it in, you can
24 project in, of course, based on regional, but my interpreta-
25 tion is that this is one complete pod and if you can't justify

1 ness, which Mr. Hair pointed out, of his yellow seismic ano-
2 maly on his seismic line, as I map the thickness on that,
3 and what -- the values that you see here is nothing more
4 than time, it's an Isochron, time thickness of the Strawn,
5 which is purely the geophysical interpretation. There's no
6 geology on this map, which is why I'd like to point out that
7 I think that their map is very heavily favored toward the
8 geophysics since it resembles my seismic map so closely, or
9 roughly parallel.

10 And I just think that there's a lot of
11 room left for interpretation. I don't think that you can
12 split those two pods like that based on the information that
13 we had available to us.

14 But like I said, nevertheless, I am still
15 basically in agreement with Mr. Hair in his interpretation.
16 I just think he's being unduly pessimistic about our loca-
17 tion.

18 Q But based upon your study of the informa-
19 tion they made available to you, have you reached any con-
20 clusions about the nature of the reservoir in this area in
21 question?

22 A The nature of the reservoir?

23 Q Yes. You testified that you -- you --
24 that there was no evidence that there were two different
25 pods.

1 A Well, he's showing, like I said, he's
2 showing a thin spot based upon seismic data, which may or
3 may not be there. I'm representing that on my map as a thin
4 spot along that seismic line, but to take that one point and
5 to project it completely across our lease, I think is
6 unreasonable.

7 Would you like me to point that out for
8 you?

9 Q Yes.

10 MR. QUINTANA: Yes.

11 A He's taking this flat spot, or thin spot,
12 right here, can you see the difference between these two
13 spots, seismic events, what he's calling thick and thin?
14 He's taken this thin spot on the seismic and projecting it
15 from here all the way across our location, based upon this
16 one seismic line.

17 Q And how do you differ from that?

18 A Well, I think it's thinner here than it
19 is here, but I don't think it continues all the way through.

20 Q I see.

21 A And I think that's what they're basing
22 their thinness on, or that's the way I interpret it.

23 MR. QUINTANA: You say you
24 think. What do you base your thoughts on, you know, that it
25 doesn't extend out there? Is there another line that you

1 took that from that we are not able to see here that was in
2 their office, or something?

3 A Well, like I said, I examined these four
4 seismic lines.

5 MR. QUINTANA: But for purposes
6 of the record, state to the --

7 A Yes.

8 MR. QUINTANA: I mean what ex-
9 hibit are you looking at?

10 MR. VANDIVER: He's looking at
11 Exhibit Number Sixteen.

12 A Exhibit Number Sixteen.

13 MR. QUINTANA: Okay.

14 A There are four seismic lines outlined in
15 blue here that I was able to work up and there's another
16 seismic line that runs parallel to the Exhibit Number 97,
17 that I was able to work.

18 MR. VANDIVER: That's Line 97.

19 A Right. Exhibit Number 27.

20 MR. QUINTANA: Parallel, was it
21 north or south of it; north or south of the -- when you say
22 parallel, was it north of that line or south of that line?

23 A It was -- it paralleled that line on the
24 east by approximately a half mile. They're approximately a
25 half mile apart and they run parallel.

1 MR. WOOD: That's right.

2 A And based upon the anomaly that I saw on
3 the line that we do not have today, and also based upon an-
4 other east/west line that runs across the north section line
5 of Section 4, I've interpreted this to be the same reser-
6 voir.

7 This seismic line on Exhibit Number
8 Twenty-five, I was able to work that data. I was also able
9 to work this data.

10 Q Mr. Pearson, is there any method for con-
11 verting seismic data to porosity data?

12 A None that I know of.

13 Q Based upon the seismic data that you've
14 been presented, is there any indication that the porosity at
15 TXO's proposed location is any lower than the porosity at
16 the Viersen No. 1 Well?

17 A According to my interpretation, that we
18 will actually have thicker reservoir at our location, based
19 upon seismic data.

20 Q And that's just your interpretation of
21 the seismic data.

22 A That's correct.

23 Q And so you just differ in your interpre-
24 tations.

25 A That's correct. Seismic data is highly

1 interpretive, but I feel that based on my interpretation we
2 have as good a location if not better than the Viersen well.

3 MR. VANDIVER: I'll pass the
4 witness, Mr. Quintana.

5 MR. QUINTANA: Mr. Kellahin?
6

7 CROSS EXAMINATION

8 BY MR. KELLAHIN:

9 Q Mr. Pearson, you testified that Pennzoil
10 invited you over there to their office about a month ago to
11 share this proprietary seismic information with you?

12 A That's correct.

13 Q And approximately when was that? Was
14 that before or after the spacing hearing on the 11th of Sep-
15 tember?

16 A That was before. Wait, I don't recall,
17 to be honest with you.

18 Q It's been about thirty days ago, I guess.
19 Sometime in September?

20 A I remember it was last month and that's
21 all.

22 Q Prior to that time, Mr. Pearson, had you
23 been involved in examining, analyzing, or interpreting other
24 seismic data in this immediate area?

25 A Yes, I have. I had interpreted some

1 seismic data in the -- excuse me for a minute. I forget the
2 field name. It's south of here -- Humble City South, I'm
3 sorry.

4 Q In the Humble City South Strawn Field to
5 the south --

6 A Yes.

7 Q -- and to the east of this?

8 A Yes, sir.

9 Q Did you provide any seismic
10 interpretations for the well TXO drilled in Section 33 to
11 the north, their --

12 A The Carter F?

13 Q Yeah, Carter.

14 A No, sir, I did not.

15 Q Who else was present besides you, Mr.
16 Pearson, in Pennzoil's office when you went to see their
17 seismic data?

18 A Bradley Jones at Pennzoil is the one who
19 made the data available to me and Mr. O'Hare, our geologist,
20 was also present for about the first thirty minutes, or so.

21 Q Mr. Jones is Pennzoil's geophysicist?

22 A Yes, sir.

23 Q Do you recall if anyone else was present?

24 A Not while I was interpreting the data,
25 no.

1 Q Did Mr. Jones share the seismic lines
2 with you and the underlying data upon which these lines were
3 based?

4 A He laid the seismic lines out for me.
5 They were uninterpreted. They were just clean seismic lines
6 and he was very cooperative. He showed me, he said, "This
7 is our anomaly. This is what we drilled."

8 Q Did you ask any questions about the qual-
9 ity or the degree of accuracy of the underlying data to
10 which you examined to satisfy yourself that it was reliable,
11 from which you could draw conclusions?

12 A Yes, sir. You can also determine by the
13 parameters that they used when they acquired the data and
14 when they processed the data, which is available in the
15 headboard, which we do not have here today.

16 Q Were you satisfied at that time that the
17 information that you were looking at was accurate and reli-
18 able?

19 A Yes.

20 Q How long did you spend in Pennzoil's of-
21 fice looking at that information?

22 A Approximately three and a half hours.

23 Q Did they give you copies of that informa-
24 tion or allow you simply to work with that information in
25 their office?

1 A They allowed me work with that informa-
2 tion in their office.

3 Q And you made from that information var-
4 ious notes and whatever in order to prepare Exhibit Number
5 Sixteen?

6 A Yes. I wrote down the seismic times.

7 Q Did you discuss with Mr. Jones the possi-
8 bility of a disagreement as to the pick of this Strawn re-
9 servoir either Line 87 or Line 97?

10 A No, I did not. I took his word for it.

11 Q At the conclusion of that meeting and
12 during that meeting, did you not indicate to Pennzoil's rep-
13 resentatives present that you were in agreement with their
14 interpretation of this data?

15 A No, I did not.

16 Q Did you advise them at that time that you
17 had any disagreement with the conclusions or interpretations
18 that they were making?

19 A No, I did not.

20 Q When we look at the information that
21 you've described for us, how do we determine the velocity
22 control for the exhibit?

23 A There's -- there's no need for velocity.

24 Q Why not?

25 A It's just a straight line. You use velo-

1 city to come up -- to arrive at your depth figure, the feet
2 that you want to use, and like I was -- I meant to point out
3 earlier, that Mr. Hair says their data fit exactly their in-
4 terpretation and missed it by eleven feet.

5 Well, I would just like to point out that
6 seismic data is recorded in time and you have to manipulate
7 the seismic data with an equation, which is velocity, to ar-
8 rive at feet.

9 I have not manipulated this data in any
10 way. I just picked the times off the seismographic.

11 Q Have you taken Mr. Hair's Isopach from
12 the September hearing, Mr. Greg Hair's Isopach from that
13 September hearing, and attempted to interpret that seismic
14 map in relation to the -- that Isopach map in relation to
15 the seismic work that you've examined?

16 A Would you show me a copy of that map?

17 Q Yes, sir.

18 A Yes, I looked at that one.

19 Q It's Exhibit Twenty-four. You've looked
20 at this?

21 A Yes, I've seen it. And what was your
22 question again? I'm sorry.

23 Q With regards to the interpretation you've
24 made of the seismic information and data --

25 A Uh-huh.

1 the witness?

2 If not, he may be excused.

3 MR. VANDIVER: Mr. Quintana, at
4 this time, if I could, I would like to call, recall, Mr.
5 Davis just for the purpose of establishing one -- one item,
6 which shouldn't take but a minute or two.

7 MR. QUINTANA: Fine. We'll re-
8 call Mr. Davis.

9

10 GREG DAVIS,
11 being recalled and being still under oath, testified as
12 follows, to-wit:

13

14 RE-CROSS EXAMINATION

15 BY MR. VANDIVER:

16 Q Mr. Davis, you've previously testified
17 today in this hearing?

18 A Yes, sir.

19 Q And you heard the testimony as to Penn-
20 zoil's land which, as I understand, has not been proposed to
21 drill a well in the southwest quarter of the northwest quar-
22 ter of Section 3?

23 A Uh-huh.

24 Q What is Pennzoil's interest in that
25 tract?

1 A Well, you've got a 40-acre lot up in the
2 -- I believe it would be Lot 4, that is HBP Mesa acreage, so
3 it would be Lot 3 in the south half northwest quarter, we
4 have approximately 92 percent of that (not understood.)

5 MR. VANDIVER: That's all I
6 have, Mr. Examiner.

7 MR. QUINTANA: Mr. Kellahin?

8 MR. KELLAHIN: Nothing further.

9 MR. QUINTANA: Mr. Vandiver, I
10 don't recall if we've admitted Exhibit Number Sixteen and
11 Number Fifteen.

12 MR. VANDIVER: I'll -- I don't
13 know if I asked whether they were prepared by the witnesses
14 and I will recall the witnesses for that purpose if you'd
15 like me to, but otherwise I'll move the admission of those
16 two exhibits.

17 MR. KELLAHIN: I have no objec-
18 tion.

19 MR. QUINTANA: Fine. We'll ad-
20 mit Exhibit Number Fifteen and Exhibit Number Sixteen for
21 TXO Production as evidence.

22 MR. VANDIVER: And that's all
23 the testimony and evidence I intend to present at this time.

24 MR. QUINTANA: Mr. Kellahin, do
25 you have further testimony to present?

1 MR. KELLAHIN: I do not. We're
2 prepared for closing argument at the appropriate time.

3
4 (Thereupon a recess was taken.)

5
6 MR. QUINTANA: Mr. Kellahin?

7 MR. KELLAHIN: Thank you, Mr.
8 Quintana.

9 We appreciate the length of
10 time that you've devoted to this case. I think it has a
11 great number of very interesting issues in it. I hope we
12 can solve all of them to everyone's mutual satisfaction.

13 I hope it has come across that
14 Pennzoil is not attempting to run roughshod over any other
15 interest owners in this area. We understand that TXO has a
16 very small interest. We can see from the calculations of
17 interest by the landmen that have discussed the case that
18 TXO came into this northeast quarter with about six percent.

19 You can also see that in the
20 northeast quarter, let's see, I'm sorry, we've got TXO with
21 about six percent. We've got Pennzoil now with what I cal-
22 culate to be about 63 percent of the working interest owners
23 in support of their well location, but you can through your
24 own calculations as well as I can. Some of the working in-
25 terest owners have sent the same letters to both sides.

1 The point is, though, that we
2 have shared some very sensitive proprietary information that
3 many operators won't share with each other. We did that not
4 only for TXO but we've done it for any of the other working
5 interest owners that wanted to come to the office and look
6 at this information.

7 We believe our interpretation
8 of this information and it has proved successful because, as
9 Mr. Hair testified to back in September and as he testified
10 to again today, that Viersen No. 1 Well was drilled based
11 upon that seismic data. You can see from his testimony how
12 loosely it matches the seismic data. They were very suc-
13 cessful with the new discovery.

14 They have shared that informa-
15 tion and they are not seeking a position where they can use
16 their greater percentage interest in this area to gain more
17 than their share of the oil. Had we wanted to do that the
18 next well in this pool would not be the Shipp No. 1 or the
19 Viersen No. 2, it would be that Waldron Well in Number 3 and
20 would siddle up close to the interest of TXO and would drain
21 them. But that's not the point and that's not what we're
22 trying to do.

23 What we're trying to do is to
24 develop in an orderly fashion to the maximum benefit of
25 everyone the pool that we discovered. And how have we done

1 that? We've done that by coming before the Division back in
2 September and requesting 80-acre spacing, and that's an in-
3 tegral part of your decision today, is how you're going to
4 allow this case to affect the orderly development of the
5 pool.

6 Apart from the spacing, if you
7 were looking at this case as a typical forced pooling case,
8 all the little points you check off to the side who'd win,
9 or checked off in favor of Pennzoil. We have developed the
10 area. We have a development plan for the area. We have the
11 discovery well. We have the greatest interest committed to
12 ourselves voluntarily. We were the first to suggest the
13 further development of this. We have an AFE that's been ac-
14 cepted by others as reasonable; even TXO admits well costs
15 are not a factor. Overhead charges are not a factor.

16 All those things which you typ-
17 ically decide operations on are in favor of Pennzoil.

18 It is Pennzoil and not TXO that
19 operates most of the Strawn wells in this immediate area. I
20 think TXO's closest well was a number of townships away.

21 We have earned, you don't have
22 to give it to us, we have earned the right to operate this
23 well.

24 One of TXO's concerns, and it's
25 obviously apparent, is they are concerned about what will

1 happen to their acreage in the northeast quarter in relation
2 to the production from the Viersen No. 1 Well.

3 In addition we have seen TXO's
4 philosophy at work today. They pick a location and they
5 cozy up to a good well. There is -- there is no argument
6 about that. They staked this well just minutes after, if
7 not days after, the Viersen Well was completed, long prior
8 to their efforts to actually formulate specific geologic and
9 engineering information. What do they do? They move in
10 close and that's just the last thing you'd want to do.

11 We've asked all their witness-
12 ses, we've asked our own witnesses, what do we do with
13 this pool? Everybody says, it's worthy of 80-acre spacing.
14 That's what we ought to maintain and how do we maintain
15 that? By a logical pattern of well locations.

16 You can see in the southwest
17 quarter of 4 the Viersen Well is in the northeast corner of
18 that quarter section.

19 The Viersen No. 2 is in the
20 southwest quarter. They're in logical well locations to ac-
21 tively develop 80-acre spacing and they conform to the
22 orientation of the reservoir as agreed by all the geolo-
23 gists, it runs northeast/southwest.

24 In addition, for the northeast
25 quarter we have located the wells again using the same loca-

1 tion pattern, northeast corner, southwest corner, of the
2 160. That is the logical pattern to develop the reservoir.
3 We've shown it on the exhibits. You can see by the circles
4 around the well locations what happens if you let TXO have
5 this location; you've reduced this pool to 40-acre spacing.

6 There's no doubt that you can
7 crowd three or four wells 40 acres apart and produce the oil
8 out fo the reservoir, but that does not maximize the
9 recovery of oil from the reservoir; that does not protect
10 correlative rights; it doesn't do anything but drill
11 unnecessary wells.

12 Let's look for a moment at
13 TXO's Isopach. If they are concerned about drainage and
14 counterdrainage, and if they believe that that Isopach, Ex-
15 hibit Number Ten, if they believe this Isopach, we're going
16 to learn some things about the reservoir that will balance
17 the correlative rights of the parties.

18 You can see from the proposed
19 Shipp well, number one, in the west half of the northeast
20 quarter, that that is a well to which TXO has agreed with
21 Pennzoil that Pennzoil may drill it. It's one that's about
22 to be drilled; all these wells are going to be drilled,
23 hopefully, before the end of the year. That is a well in
24 which we're going to receive information and it will place
25 TXO's acreage in the position of being productive. They

1 will be in a position where drainage and counterdrainage are
2 balanced between the reservoirs. It gives all operators or
3 working interest owners additional reservoir information.

4 We concur in the Examiner's
5 suggestion that that well is important and ought to be drilled
6 before the one in the east half of the northeast quarter,
7 and we would suggest to you that that order be entered
8 first and the Shipp 1 Well be drilled first.

9 We don't think it's going to
10 make a difference because we believe our seismic interpretation,
11 our geology, and the interpretation that this is essentially
12 two pods. It is going to give you some information
13 by which you can in an abundance of caution determine
14 which potential operator is more closely to being correct.

15 If you'll compare the two Isopachs
16 you'll see that the proposed location for the Shipp
17 No. 1 Well is projected to encounter a porosity thickness in
18 excess or equal to about 40 feet.

19 If you make that same location
20 pick on the Isopach that TXO's presented, we ought to find a
21 well that represents something less than that. There may
22 lie enough difference in the wellbore information derived
23 from the well from which you can confirm one theory and
24 prove the other. I'm not persuaded that's absolutely true,
25 but if you think that's helpful to you, I see no reason that

1 that well can't be drilled first. That's our plan of devel-
2 opment and that's the one we want, want to utilize.

3 In addition, I think it's
4 important that you understand that in order to preserve 80-
5 acre spacing, you cannot let the next well drilled in here
6 undercut that spacing pattern.

7 If our theory of development
8 proves inappropriate, we have committed to a schedule that
9 will drill these wells quickly. If it is inappropriate and
10 we cannot prove our interpretations, it is possible for the
11 Division to require additional drilling; there could be in-
12 fill locations; a lot of things could happen, but we would
13 urge you not to allow a well location that is in such close
14 proximity to the Viersen No. 1 to be one of the next wells
15 drilled, because as you know, the drilling of an unnecessary
16 well is a wellbore that's drilled and cannot be undrilled.

17 We appreciate the opportunity
18 to appear before you today. We have shown you information
19 that is not typically shown in such hearings. We have re-
20 lied upon this seismic data and as Mr. Hair has testified in
21 every instance of having wellbore information or actual geo-
22 logic information, it confirms his conclusions.

23 If you follow TXO's theory to a
24 logical conclusion as depicted on some of these exhibits,
25 you can see that being in close proximity to a producing

1 Strawn well does not always result in success.

2 Mr. Hair has shown you on some
3 of his exhibits and, in fact, TXO has shown us on their own
4 exhibit, that they can be in close proximity to producing
5 Strawn wells and then very successfully drill a dry hole.

6 Do not be influenced by the
7 fact that they can redraw an Isopach to show some thickness
8 in their quarter section. It's our firm belief that that is
9 not true.

10 I think the importance of the
11 engineering calculations is significant to you. We had one
12 engineer use 6 percent porosity; another use 12; Mr. Wil-
13 liams has testified before you on two occasions how he real-
14 ized the 12 percent porosity; he used it from log interpre-
15 tation; he used it based upon experience factors in other
16 Strawn pools. He says, in essence, that the size and shape
17 of this reservoir is such that you've got to calculate in
18 order to fill the reservoir with the volume of oil that's
19 produced by some of these reservoirs, you can't realistical-
20 ly expect porosity in the 6 percent range. He says it's
21 more likely to be 12 percent.

22 You can run up those calcula-
23 tions. Mr. Wood did them, Mr. Williams did them, and we see
24 that that anomaly varies between the two calculations. One
25 fellow had 788 feet, the other guy's got 547, whatever. I

1 maintain to you that's not a significant difference. I think
2 that's very important in determining and confirming the
3 orientation of the pods as we've interpreted from the seis-
4 mic, that either one of those calculations is reasonably
5 consistent with our location of the reservoir.

6 We again thank you for your
7 patience. I would like an opportunity to submit to you a
8 proposed order for entry in this case. We believe that we
9 have proved beyond a reasonable doubt by a substantial mar-
10 gin of the evidence that Pennzoil ought to be awarded opera-
11 tions for both pooling cases, particularly the east half of
12 the northeast quarter and that our location is the one that
13 ought to be drilled.

14 MR. QUINTANA: Thank you, Mr.
15 Kellahin, and I will accept a proposed order in light of the
16 fact that I have a short period of time left here at the Oil
17 Conservation Division. I would appreciate that in order to
18 expedite orders for all interested parties.

19 Mr. Vandiver?

20 MR. VANDIVER: Thank you, Mr.
21 Quintana.

22 I, too, appreciate the time
23 that you have devoted to this hearing. There is a lot of
24 evidence that's been presented, a lot of opposing view-
25 points, and I trust that the evidence has enlightened you as

1 to what the parties' intentions are in this case.

2 To paraphrase, me thinks Mr.
3 Kellahin protesteth a little too much about not running
4 roughshod over the other interest owners in the area of this
5 well. I think that it's obvious from the nature of this
6 land and the nature of the location that's what Pennzoil was
7 trying to do in this case. If you will look at all the evi-
8 dence that's been presented, you'll see that with respect to
9 the east half northeast quarter Pennzoil is trying to get as
10 far away from the Viersen No. 1 as possible.

11 On the other hand, with respect
12 to the west half of the southeast quarter Pennzoil is trying
13 to get as close as possible to the Viersen No. 1 Well.

14 So I think the reason for that
15 is obvious: Pennzoil owns 94 percent interest in the south-
16 east quarter somewhere around a 37 or 39 percent interest in
17 the northeast quarter.

18 Pennzoil, in effect, wants to
19 drill a wildcat well in the east half northeast quarter.
20 They really, I believe, hope that they do not make a good
21 well, because they want to withdraw as much oil as they can
22 as quickly as they can from the Viersen No. 1 Well and they
23 want to drain the east half of the northeast quarter, and
24 drainage, all the evidence shows, that drainage is occur-
25 ring.

1 The order of their proposed de-
2 velopment is that they will drill the Viersen No. 2 Well in
3 the southwest quarter of the southeast quarter, which is
4 approximately a quarter of a mile away, and they ask in the
5 earlier case, Case Number 8696, in the alternative for an
6 unorthodox well location so that they can get closer to the
7 Viersen No. 1 Well.

8 After drilling that well they
9 propose to drill the Shipp No. 1 Well in the southwest
10 quarter of the northeast quarter, again at the closest
11 possible location to the Viersen No. 1 Well.

12 And then they're going to go up
13 in the northeast quarter of the northeast quarter and drill
14 the -- what they will call the Shipp No. 2 well and finally
15 they propose to drill the Waldron No. 1 Well in the
16 southwest quarter of the northwest quarter of Section 3 of
17 the same township, 330 feet from the section line between
18 Section 3 and Section 4, and in that subdivision they own a
19 92 percent interest.

20 So if you will look at their
21 exhibit, at their exhibit numbers -- I'm sorry, I don't have
22 the numbers -- but their exhibits showing the 80-acre radius
23 for the TXO proposed location and the Pennzoil proposed lo-
24 cation, you'll see these three wells are going to be as near
25 as they can get the Viersen No. 1 but the Shipp No. 2 is

1 going to be as far away as they can possibly get, a half
2 mile away.

3 TXO, I'd also point out, that
4 the testimony is that the mineral ownership of the southeast
5 quarter is not in common with the mineral ownership of the
6 northeast quarter. It's totally separate. Those -- those
7 parties owning mineral interest in the northeast quarter own
8 no interest in the southeast quarter.

9 The leasehold ownership in the
10 northeast quarter is different from the leasehold ownership
11 in the southeast quarter, except for two parties, being
12 Pennzoil and The Superior Oil Company, who has approved, ac-
13 cording to the testimony, their location.

14 Those two parties together will
15 own over 50 percent of the leasehold interest in the east
16 half of the northeast quarter and it is, I would submit, to
17 their advantage to get as far away as possible from the
18 Viersen No. 1 Well and drill this wildcat well in the far
19 northern portion of the east half northeast quarter so that
20 they can remove as much oil as quickly as they can from the
21 east half of the northeast quarter.

22 TXO is not asking for anything
23 other than an opportunity to recover its fair share of the
24 oil in place in this reservoir, but it will not be -- not
25 have an opportunity to recover its share of the oil if it's

1 not given the opportunity to drill this well at the proposed
2 location of the Grisso No. 1 Well.

3 I think that it's probably true
4 that Pennzoil has produced evidence that would not generally
5 be shared in this case. They've presented their seismic da-
6 ta and interpretations, and that is in an effort to convince
7 the Examiner that this is not a wildcat well; that there are
8 two separate porosity pods, but there is, Mr. Examiner, no
9 well information that will indicate that there are two sep-
10 arate porosity pods.

11 The better information and the
12 stronger evidenc indicates that it is one porosity pod; that
13 it is one reservoir that extends up into the east half
14 northeast quarter.

15 The testimony has been, and
16 it's uncontroverted, that the Viersen No. 1 is draining the
17 east half northeast quarter. I think that' it's -- there's
18 also been testimony from TXO's witnesses that if TXO is not
19 given an opportunity to drill the Grisso No. 1 at its pro-
20 posed location, that there will be oil that will be unrecov-
21 ered in this case.

22 If you will -- I'd like to
23 point out, Mr. Examiner, that this is not the typical forced
24 pooling hearing, forced pooling application. I think that
25 the evidence has indicated that all parties owning operating

1 rights in the east half northeast quarter will participate
2 in either of the proposed locations. I think that it's just
3 a matter of looking not at what Pennzoil says about this
4 case, but what they do and what they plan to do, and their
5 plan is to recover the oil from the acreage upon which they
6 own 94 percent interest in the operatig rights and to avoid,
7 if possible, recovering the oil from the tract in which they
8 own a 37 percent interest, and the same goes for Superior
9 Oil Company.

10 Mr. Examiner, I think that the
11 testimony with respect to the risk of drilling this -- these
12 wells is very interesting. TXO, believing that -- that its
13 proposed location, and I don't think that it can reasonably
14 be argued that its location is the greater risk. I think
15 that TXO's proposed location is the smaller risk, and
16 there's much more, much better opportunity of obtaining com-
17 mercial production from that location, and for that reason
18 they have asked the Oil Conservation Division to impose only
19 100 percent penalty on those parties who may elect not to
20 join in drilling this well.

21 TXO proposes to define the
22 limits of this new field. Their location is some 870 feet
23 away from the Viersen No. 1, while the Shipp No. 2 will be a
24 half mile away.

25 Now, Mr. Hair testified that he

1 thought both of the locations had significant risk and he
2 asked for the 200 percent penalty. I think that the fact
3 that he is willing to admit that there is a high risk in
4 drilling his location is indicative of what the facts are in
5 this case, but I think that the best location for defining
6 the limits of this field and for fully recovering the oil in
7 place is, obviously, the TXO location.

8 Pennzoil is attempting to des-
9 troy the correlative rights of the mineral interest owners
10 in the northeast quarter and the parties owning leasehold
11 interest in the northeast quarter and for that reason, Mr.
12 Examiner, I think that it's obvious that Pennzoil is not
13 being a prudent operator in this case. TXO is being the
14 prudent operator in this case.

15 TXO wants to do what a prudent
16 operator would do and that is to define the limits of this
17 field by drilling the next logical location and that loca-
18 tion is in the southeast quarter of the northeast quarter of
19 Section 4.

20 When you consider that Pennzoil
21 by wanting to drill its proposed location is not being a
22 prudent operator, and I think that that's obvious when you
23 look at the evidence with respect to their ownership in this
24 east half of Section 4, both the disparity between ownership
25 in the southeast quarter and the northeast quarter, I think

1 the obvious -- the reason is obvious that they do not wish
2 to be a prudent operator in this case.

3 They want to recover as quickly
4 as possible as much oil as they can from the Viersen No. 1
5 Well.

6 TXO filed its application for
7 permit to drill on, I believe, August 26, and Pennzoil filed
8 its application thereafter.

9 TXO has the right to drill at
10 this location and it's the more prudent location to fully
11 recover all the oil in place, and they would ask -- I would
12 ask in their behalf that they be given the opportunity to
13 recover their fair share of the oil in place in this pool
14 and ask that their application be granted.

15 MR. QUINTANA: Thank you, Mr.
16 Vandiver.

17 Would you be opposed to submit-
18 ting a proposed order?

19 MR. VANDIVER: No, I'd like to,
20 sir, thank you.

21 MR. BATEMAN: Mr. Examiner, if
22 I may, thank you and my colleagues for giving me an oppor-
23 tunity to make a statement.

24 I have enjoyed the breadth and
25 depth of the testimony and information that's been given you

1 in this case.

2 As Mr. Kellahin pointed out in
3 his cross examination of the first witness, this is a case
4 in which there's very little dispute about anything except
5 the principal question and that is the geologic-geophysical
6 evidence in which there is, obviously, a very considerable
7 dispute with respect to which of these locations is the most
8 prudent.

9 As a reflection of that you see
10 that there is a considerable amount of working interest and
11 other mineral interest uncommitted at this point, or commit-
12 ted to both sides, which essentially is uncommitted.

13 I do think that's a reflection
14 of the confusion about what the geology illustrates and it's
15 left to you to make the decision for those uncommitted in-
16 terests.

17 One of the statements that has
18 been made, and I want to state at least what my information
19 is about it, is that the East Lovington Unit has a combined
20 interest of 9.3125 percent in the acreage in the east half
21 of the northeast quarter. Of that total percentage Texaco's
22 interest and other committed interest in the unit totals
23 4.3408.

24 Texaco has essentially made its
25 own judgment with respect to the geology and has authorized

1
2 me to state for the record that its interest is committed to
3 the TXO location, and in that connection, therefore, I urge
4 your approval of TXO's application.

5 Thank you very much.

6 MR. QUINTANA: Anybody else
7 that wishes to state any closing statements?

8 State your name for the record.

9 MR. MAX COLL: My name is Max
10 Coll. Again I represent myself and my three brothers, who
11 have a 1/32, or a 3.125 percent working interest in the
12 northeast quarter only. We have zero interest in the south-
13 east quarter.

14 Therefore, we're most inter-
15 ested in protecting our correlative rights by producing oil
16 through tank batteries that will be located so as to produce
17 oil from the northeast quarter. That's where our only in-
18 terest is.

19 On the other hand, it appears
20 to me that Pennzoil has virtually all of the interest in the
21 southeast quarter and virtually all the interest in Section
22 3, and they would like to optimize producing the oil through
23 tank batteries that would optimize their ownership of the
24 oil.

25 As I recall, TXO's proposed
field rules allow any well to be located 330 feet in from

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the outer boundaries of the 80-acre spacing unit and that's the only constraint that's, as I understand it, placed by the proposed rules; doesn't matter whether it's catercornered across the 160, it's only -- the only thing they've asked is that you go in 330 feet from the outer boundary.

So either location is orthodox and I think, I'm not a geologist and I'm not an engineer, I'm a "rulerologist" and you measure the distance from a 1000-barrel well and if you're not too far from it, you're better off than if you're a half mile from it.

So to protect my correlative rights and my brothers' correlative rights, I would urge the examiner to recommend approval of TXO's location.

MR. QUINTANA: Thank you, Mr. Coll.

I'd like to take this opportunity to tell everyone that I've enjoyed the time working for the OCD. I always enjoy hearings like this. It puts a lot of pressure on me, I agree, but I sure enjoy it.

I am going to think very carefully over this, take it into all the testimony that's been presented. I've been formulating a few ideas of my own while I've been sitting here, but nonetheless, I still want to see the proposed orders, and all I can tell you is that I'm going to try and be as fair as possible to give every-

1
2 body the best shot at producing the oil that's theirs under
3 their property.

4 I've enjoyed working with
5 everybody here and this will be my last hearing. I'll do my
6 best to get these orders out for you in a short period of
7 time here.

8 Is there anything further in
9 Case 8727?

10 MR. COLL: If I may just add
11 one other thing, it was brought up that there was a mixed
12 legal description and if you just deal with the 80-acre
13 spacing unit by itself in both these applications and forget
14 the 40-acre spacing unit, then I think the notice is
15 completely proper and that there's no legal defect and
16 there's nothing that should delay an immediate decision.

17 MR. QUINTANA: I've taken that
18 into account and I'm glad you pointed that out. I had
19 noticed that before.

20 If there is nothing further in
21 Case 8727 or Case 8719, both of these cases will be taken
22 under advisement.

23
24
25 (Hearing concluded.)

C E R T I F I C A T E

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

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8719 & 8727 heard by me on OCT. 10 1985.
William P. Quintone Examiner
Oil Conservation Division

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