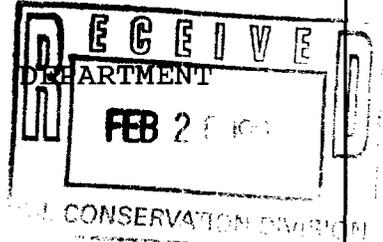


STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES
OIL CONSERVATION DIVISION



IN THE MATTER OF THE HEARING CALLED BY)
THE OIL CONSERVATION DIVISION FOR THE)
PURPOSE OF CONSIDERING:)
APPLICATION OF BURLINGTON RESOURCES OIL)
AND GAS COMPANY FOR COMPULSORY POOLING)
AND UNORTHODOX LOCATION, LEA COUNTY,)
NEW MEXICO)

CASE NO. 11,678

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

February 6th, 1997

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, MICHAEL E. STOGNER, Hearing Examiner, on Thursday, February 6th, 1997, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

* * *

I N D E X

February 6th, 1997
Examiner Hearing
CASE NO. 11,678

PAGE

REPORTER'S CERTIFICATE

4

* * *

1 WHEREUPON, the following proceedings were had at
2 10:15 a.m.:

3 EXAMINER STOGNER: This hearing will come to
4 order. I'll now call reopened Case 11,678, which is the
5 Application of Burlington Resources Oil and Gas Company for
6 compulsory pooling and unorthodox location, Lea County, New
7 Mexico.

8 At this time I'll call for appearances.

9 It appears this case was heard along with 11,656
10 at the December 19th, 1996 hearing. That was before David
11 Catanach. That matter was readvertised to today's date to
12 include a nonstandard location.

13 Since there are no appearances in this matter,
14 this case will be taken under advisement.

15 (Thereupon, these proceedings were concluded at
16 10:15 a.m.)

17 * * *

18
19
20
21 I do hereby certify that the foregoing is
22 a complete record of the proceedings in
the Examiner hearing of Case No. 11678,
23 heard by me on 6 February 1997.
24 Michael E. Stogner, Examiner
Oil Conservation Division
25

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL February 7th, 1997.



STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1998

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY)
THE OIL CONSERVATION DIVISION FOR THE)
PURPOSE OF CONSIDERING:)

APPLICATION OF TEXACO EXPLORATION AND)
PRODUCTION, INC., FOR COMPULSORY)
POOLING, A HIGH ANGLE/HORIZONTAL)
DIRECTIONAL DRILLING PILOT PROJECT, AND)
SPECIAL OPERATING RULES THEREFOR,)
LEA COUNTY, NEW MEXICO)

CASE NOS. 11,656

APPLICATION OF BURLINGTON RESOURCES OIL)
AND GAS COMPANY FOR COMPULSORY POOLING,)
LEA COUNTY, NEW MEXICO)

and 11,678

(Consolidated)

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

December 20th, 1996

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Friday, December 20th, 1996, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

* * *

I N D E X

December 20th, 1996
 Examiner Hearing
 CASE NOS. 11,656 and 11,678 (Consolidated)

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* * *

A P P E A R A N C E S

FOR THE DIVISION:

RAND L. CARROLL
Attorney at Law
Legal Counsel to the Division
2040 South Pacheco
Santa Fe, New Mexico 87505

FOR TEXACO EXPLORATION AND PRODUCTION, INC.:

CAMPBELL, CARR, BERGE and SHERIDAN, P.A.
Suite 1 - 110 N. Guadalupe
P.O. Box 2208
Santa Fe, New Mexico 87504-2208
By: WILLIAM F. CARR

FOR BURLINGTON RESOURCES OIL AND GAS COMPANY:

KELLAHIN & KELLAHIN
117 N. Guadalupe
P.O. Box 2265
Santa Fe, New Mexico 87504-2265
By: W. THOMAS KELLAHIN

FOR PERMOK OIL, INC.:

HINKLE, COX, EATON, COFFIELD & HENSLEY
218 Montezuma
P.O. Box 2068
Santa Fe, New Mexico 87504-2068
By: JAMES G. BRUCE

* * *

1 WHEREUPON, the following proceedings were had at
2 8:15 a.m.:

3 EXAMINER CATANACH: Reconvene the hearing this
4 morning, and at this time call Case 11,656.

5 MR. CARROLL: Application of Texaco Exploration
6 and Production, Inc., for compulsory pooling, a high-
7 angle/horizontal directional drilling pilot project, and
8 special operating rules therefor, Lea County, New Mexico.

9 EXAMINER CATANACH: Call for appearances.

10 MR. CARR: May it please the Examiner, my name is
11 William F. Carr with the Santa Fe law firm Campbell, Carr,
12 Berge and Sheridan.

13 We represent Texaco Exploration and Production,
14 Inc., and I have three witnesses.

15 EXAMINER CATANACH: Additional appearances?

16 MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of
17 the Santa Fe law firm of Kellahin and Kellahin, appearing
18 on behalf of Burlington Resources Oil and Gas Company, and
19 I have three witnesses as well.

20 With your permission, Mr. Examiner, and with the
21 consent of opposing counsel, we would ask that you
22 consolidate the case just called with Division Case 11,678,
23 which is the competing pooling Application by Burlington,
24 and have those matters consolidated for purposes of
25 hearing.

1 EXAMINER CATANACH: At this time we'll call Case
2 11,678.

3 MR. CARROLL: Application of Burlington Resources
4 Oil and Gas Company for compulsory pooling, Lea County, New
5 Mexico.

6 EXAMINER CATANACH: Call for additional
7 appearances.

8 MR. BRUCE: Mr. Examiner, Jim Bruce from the
9 Hinkle law firm in Santa Fe, representing PermOK Oil, Inc.
10 I have no witnesses.

11 EXAMINER CATANACH: Who?

12 MR. BRUCE: P-e-r-m-o-k Oil, Incorporated.

13 EXAMINER CATANACH: Can I get the witnesses to
14 stand and be sworn in at this time?

15 (Thereupon, the witnesses were sworn.)

16 MR. CARR: May it please the Examiner, at this
17 time we would call Ron W. Lanning.

18 MR. KELLAHIN: Mr. Examiner, I have a short
19 opening statement, if you would like to hear from counsel
20 with regards to the case.

21 EXAMINER CATANACH: Okay.

22 MR. KELLAHIN: Let me see if I can frame the
23 issue as we see it, Mr. Examiner.

24 The dispute presently before you involves the
25 southwest quarter of Section 23. The testimony from our

1 three witnesses will demonstrate the following to you, that
2 the southwest quarter of 23 is in the Rhodes Gas Pool.
3 That's on statewide 160-acre gas spacing. Standard wells
4 in that pool are located 660 feet from the side boundaries
5 of the pool.

6 There is some background that is relevant with
7 regards to the spacing unit.

8 Back in the early part of 1996, there was a
9 dispute filed before the Division with regards to the
10 boundary of the Rhodes Gas Pool and the corresponding
11 boundary of the Rhodes Oil Pool. That common boundary
12 line, insofar as you're concerned today, is the south side
13 of the southwest quarter of 23.

14 At that time, the ownership in the southwest
15 quarter was divided where the east half of the southwest
16 quarter was controlled by Mr. Hartman, the west half of the
17 southwest quarter was controlled by Texaco.

18 Mr. Hartman sought to adjust the pool boundary,
19 and as part of that process, then, there were competing
20 pooling applications filed between Texaco and Hartman with
21 regards to the development of the southwest quarter.

22 The dispute with Hartman was resolved by an
23 exchange of property. Mr. Hartman received property in
24 other areas that are not affected. And in return,
25 Burlington acquired Mr. Hartman's interest in the subject

1 spacing unit.

2 That transaction was completed in July 10th of
3 this last summer. And at all times prior to that, Mr.
4 Examiner, Texaco and Hartman had pursued and had agreed
5 that the gas in that spacing unit is best developed by a
6 single wellbore and that that wellbore be a vertical well.

7 After Burlington was substituted for Hartman,
8 then for the first time in August of 1996 Texaco changes
9 its position. And they now suggest, pursue and now ask you
10 to require the drilling of a high-angle multi-lateral
11 horizontal wellbore. Burlington's position is that that
12 resource is best developed with a vertical well.

13 The dispute for you to decide today is one that
14 involves two technical questions. Our technical experts
15 will present evidence to you that it is practical, feasible
16 and appropriate to develop the gas with a vertical well,
17 and we're asking you to award us operations to accomplish
18 that.

19 A secondary issue, unrelated to the others, is
20 the question of offset drainage. It will be our testimony
21 from our experts that the southwest quarter is not subject
22 to drainage. The offset wells, in fact, are not draining
23 the southwest quarter.

24 Regardless, we think that it's appropriate to
25 develop the spacing unit with vertical wells, using

1 conventional technology, and not require us to participate
2 and pay for an unusual, unique wellbore that has yet to be
3 drilled in this area, and we would ask that you deny the
4 Texaco Application for this high-angle multi-lateral
5 science project.

6 Thank you, Mr. Examiner.

7 EXAMINER CATANACH: Mr. Carr?

8 MR. CARR: May it please the Examiner, as the
9 case unfolds you will see there are actually two questions
10 before you. One is how to best develop the acreage which
11 is the subject of these competing pooling applications.
12 The other is who should properly operate the tract.

13 The case will unfold against a backdrop that is
14 perhaps complicated by some ownership figures and also
15 rules, the pool rules, because as you know, we have off- --
16 we are in a 640-acre unit that is offset to the south by
17 acreage developed on 40-acre spacing, in the same
18 formation.

19 The evidence is going to show you that in the
20 spacing unit that's at issue here today, Texaco owns 50
21 percent and has also been joined in this by two other small
22 interest owners, that Burlington stands before you with 48
23 percent of the interest.

24 But what is more important is that the acreage
25 that offsets this tract to the south that's developed on 40

1 acres is 100-percent Burlington, and to the west that is
2 developed on 160 spacing is also 100-percent Burlington.

3 A year ago, Burlington proposed a well on this
4 acreage. They proposed it in August of last year, only to
5 discover they owned no interest in the tract. And since
6 that time there has been an active effort by multiple
7 parties to get this acreage developed. And while this
8 effort has been going forward, the acreage that is owned 50
9 percent by Texaco has been drained.

10 And what happened in the meantime? Burlington
11 ran out and drilled a well 330 feet off the lease line
12 south of this property, and stands before you today saying
13 there's no drainage.

14 The problem we have is that when we have 40-acre
15 spacing butting up against 160-acre spacing, you've got to
16 do what you can to protect that acreage and drain the
17 reserves that are under it.

18 Now, we're proposing a horizontal well to do
19 that. One well can protect the acreage from drainage, both
20 from the south and from the west, and that's what we're
21 proposing to do.

22 You will see that while Texaco and Hartman and
23 Meridian wrestled with this problem, the one thing that's
24 significant that occurred in that dispute was that
25 Burlington succeeded to the Hartman interest. They

1 acquired that interest effective in April, but it was
2 consummated in July, and there was an operating agreement
3 on the property providing for the drilling of one well.
4 And Burlington had the right to drill that well, but they
5 did not.

6 And 14 days after that operating agreement
7 terminated, Texaco and Burlington met and Texaco said,
8 We'll give you until the 13th of September to decide
9 whether you're going to develop this with two vertical
10 wells or a horizontal well. And there was no answer, and
11 there was no response.

12 And when there was no response, we finally
13 decided that instead of sitting there and being drained,
14 we'd have to go forward with the well. And we proposed to
15 them the horizontal well, and we're pooling their -- hoping
16 to pool their interests and that of Mr. Larry Nermyr so we
17 can go forward and develop the acreage.

18 Today for the first time, Mr. Kellahin suggests
19 they believe it can be drilled and developed effectively
20 with one well. That's news to us today. Even in their
21 Application, in paragraph 8 of that Application, they say
22 Burlington has proposed to Texaco that the spacing unit can
23 and should be developed by utilizing converted,
24 conventional vertical wellbores, plural.

25 And today we're going to hear that one well will

1 do the job, when they sit offsetting us two directions, 330
2 from the lease line, twice as close as we can get, and want
3 to convince you that, in fact, there is no drainage.

4 We submit to you that when this case is concluded
5 you will see we have been actively pursuing this for a
6 year, we have not been getting responses, we are being
7 drained by an offset who owns 100 percent of the acreage,
8 and the time to pool the land is now, and designate us
9 operator of the well.

10 EXAMINER CATANACH: Mr. Carr?

11 RONALD W. LANNING,

12 the witness herein, after having been first duly sworn upon
13 his oath, was examined and testified as follows:

14 DIRECT EXAMINATION

15 BY MR. CARR:

16 Q. Mr. Lanning would you state your full name,
17 please?

18 A. Ronald W. Lanning.

19 Q. Where do you reside?

20 A. Midland, Texas.

21 Q. By whom are you employed?

22 A. Texaco Exploration and Production, Inc.

23 Q. And what is your position with Texaco?

24 A. I'm a landman for the north Hobbs asset team.

25 Q. Have you previously testified before this

1 Division?

2 A. I have.

3 Q. At the time of that testimony, were your
4 credentials as a petroleum landman accepted and made a
5 matter of record?

6 A. Yes.

7 Q. Are you familiar with the Applications filed in
8 each of these consolidated cases?

9 A. I am.

10 Q. Are you familiar with the status of the lands in
11 the subject area?

12 A. Yes.

13 MR. CARR: Are the witness's qualifications
14 acceptable?

15 MR. KELLAHIN: No objection.

16 EXAMINER CATANACH: The witness is so qualified.

17 Q. (By Mr. Carr) Mr. Lanning, would you briefly
18 state what Texaco seeks with this Application?

19 A. A, we seek the establishment of a high-angle
20 horizontal directional drilling pilot project in the
21 Rhodes-Yates-Seven Rivers Gas Pool within the 160-acre gas
22 spacing and proration unit comprising the southwest quarter
23 of Section 23, Township 26 South, Range 37 East, Lea
24 County.

25 B, we seek authorization to Drill our Rhodes 23

1 Federal Com Well Number 1 from an unorthodox surface
2 location, located 660 feet from the south line and 1100
3 feet from the west line of Section 23, in a northwesterly
4 direction, within a target window no closer than 660 feet
5 to any boundary of the project area proration unit.

6 And C, we seek to pool all mineral interests
7 within the Rhodes-Yates-Seven Rivers Gas Pool underlying
8 the southwest quarter of the said Section 23.

9 Q. The wellbore will be at all times a standard
10 setback, will it not, from the outer boundary of the tract?

11 A. That's correct.

12 Q. Have you prepared exhibits for presentation in
13 this case?

14 A. Yes, sir.

15 Q. Would you refer to what has been marked for
16 identification as Texaco Exhibit Number 1, identify that
17 and review it for Mr. Catanach, please?

18 A. This is a land map that shows the subject
19 proration unit, being the southwest quarter of Section 23,
20 as the -- with the west half colored yellow and the east
21 half uncolored. It shows the proposed surface location of
22 the well, it shows the ownership of the offsetting acreage.

23 You'll note that the Burlington acreage is
24 colored in green. PermOK is -- I can't describe the color,
25 but it's to the north. Vista Resources in blue. Wood,

1 McShane and Thams in a fuchsia color, and the BLM in red.
2 The Texaco acreage is in yellow, and the Burlington, et
3 al., acreage in the spacing unit is uncolored.

4 The red line running in an essentially east-
5 westerly direction is the boundary between the Rhodes Oil
6 and Gas Pools.

7 Q. The green acreage on this exhibit is owned by
8 Burlington Resources; is that right?

9 A. Burlington owns the gas rights.

10 Q. And do you know, do they own 100 percent of the
11 gas rights in that acreage?

12 A. To the best of my knowledge, they do.

13 Q. Could you review the status of the rules which
14 govern development of the Rhodes-Yates-Seven Rivers Gas
15 Pool and the Rhodes Oil Pool south of --

16 A. They're both developed under statewide rules.
17 The Rhodes-Yates-Seven Rivers Gas Pool is developed on 160-
18 acre spacing with 660-foot setbacks. The Rhodes Pool is an
19 oil pool, and it's developed on 40-acre spacing with
20 setbacks at 330 feet.

21 Q. What is the status of the acreage in the
22 southwest quarter of Section 23?

23 A. It's two federal leases.

24 Q. And at this time no development on that acreage?

25 A. That's correct.

1 Q. And what is the primary objective in the well
2 that's being proposed by Texaco?

3 A. The Yates formation.

4 Q. Let's go to Exhibit Number 2. Can you identify
5 that?

6 A. It's an ownership breakdown.

7 Q. Can you review the status of the interests?

8 A. The west half of the southwest quarter is owned
9 100 percent by Texaco. East half of the southwest quarter,
10 Burlington's interest is 96.09375 percent, Larry A. Nermyr
11 owns 1.56250 percent, James E. Burr owns 1.56250 percent,
12 and Ruth Sutton is the owner of a 0.78125-percent interest.

13 If you consolidate all those interests for the
14 proration unit, Texaco owns 50 percent, Burlington owns
15 48.046875 percent, Larry A. Nermyr and James E. Burr each
16 own 0.781250 percent, and Ruth Sutton owns 0.390625
17 percent.

18 Q. Have you contacted each of the owners in this
19 unit with your proposal for development of the acreage for
20 the horizontal well?

21 A. We have.

22 Q. And what response have you received?

23 A. We have approved AFEs from Mr. Burr and Ms.
24 Sutton. We've received no response from Mr. Nermyr.

25 Q. Is Mr. Nermyr's interest alone the reason that

1 you must pool this acreage?

2 A. It is.

3 Q. So the only interest owner subject to pooling, as
4 it stands today, if you're successful, would be Burlington
5 and Mr. Nermyr?

6 A. That's correct.

7 Q. Let's go to Texaco Exhibit Number 3. Would you
8 identify this, please?

9 A. Number 3 is my letter of October 9th, 1996, to
10 all the working interest owners, proposing the well.

11 Q. Is this the first formal proposal concerning the
12 well that is before the Division here today?

13 A. It's the first proposal in 1996.

14 Q. Okay, there have been discussions that went back
15 into 1995 concerning the development of this acreage; is
16 that correct?

17 A. Yes, sir, that's correct. When we and Mr.
18 Hartman had competing applications, we had made a formal
19 proposal at that time.

20 Q. And at that time Burlington didn't own an
21 interest in the property?

22 A. That's correct.

23 Q. And you've been actively trying to get a well
24 developed on this acreage since 1995; is that fair to say?

25 A. I think that's fair to say.

1 Q. All right. Would you identify Exhibit Number 4,
2 please? Before we go on, attached to Exhibit Number 3 is
3 the AFE for the well; is that not correct?

4 A. That's correct.

5 Q. All right. Now, let's go to Exhibit Number 4.
6 Would you identify that, please?

7 A. Exhibit Number 4 is my letter of November 21st,
8 1996, to Burlington.

9 Q. With this -- what we -- Referring to this letter,
10 would you summarize the efforts that were made to obtain
11 voluntary participation in this well, and particularly
12 focus on your efforts to obtain Burlington's joinder?

13 A. Well, we had a meeting on August 14th, 1996, at
14 our office in Midland, and we expressed our opinion to
15 Burlington that we were being drained on two sides.

16 We wanted to proceed immediately to get a well
17 drilled, and we offered them the opportunity to propose a
18 horizontal or two vertical wells to us, and we gave them
19 until September 13th to do that, and we never heard from
20 them regarding a proposal.

21 I made two phone calls to Burlington, both of
22 which were unreturned. And then we proceeded with our
23 plans and proposed our well on October 9th.

24 Q. Now, prior to the first of August, there was an
25 operating agreement that covered the property; is that not

1 right?

2 A. That's correct.

3 Q. And that was an operating agreement that
4 designated initially Mr. Hartman and then Burlington as his
5 successor, as operator of that property?

6 A. Well, a successor operator was never elected
7 under the operating agreement, but Mr. Hartman was the
8 operator under the agreement.

9 Q. And did that agreement provide for the drilling
10 of a single well on that acreage?

11 A. Yes, it did, on or before August 1st, 1996.

12 Q. And after that date, that operating agreement
13 would not have been effective, would it?

14 A. That's correct.

15 Q. So 14 days later you met concerning the
16 development of the acreage; is that --

17 A. That's correct.

18 Q. When did you first receive any proposal from
19 Burlington concerning the development of this acreage?

20 A. In August of 1995.

21 Q. Did they propose to drill a well at that time?

22 A. They did.

23 Q. And what did they propose?

24 A. They proposed -- I believe they called it the
25 Texsun Number 1, at a location 660 feet from the south and

1 660 feet from the west line of the section.

2 Q. And was that discussed at your August 14 meeting?

3 A. No, that was discussed at a meeting in August of
4 1995.

5 Q. Okay. And then I'm talking now about after the
6 operating agreement expired, then you met in August at your
7 office?

8 A. That's correct.

9 Q. Has there been any proposal to you since that
10 time concerning the drilling of a well?

11 A. Yes.

12 Q. And when was that? After the pooling application
13 was filed?

14 A. Yes.

15 Q. Let's go back to the AFE which is attached to
16 Exhibit Number 3. Could you review the totals on that
17 exhibit, please?

18 A. Dry hole cost is \$367,000, completed cost
19 \$485,000.

20 Q. And these are for a horizontal wellbore; is that
21 correct?

22 A. That's correct.

23 Q. Do you know what the straight-hole costs would
24 be?

25 A. Approximately 50 percent of that amount.

1 Q. Is Exhibit -- Texaco Exhibit Number 5 an
2 affidavit confirming that notice of this hearing has been
3 provided to the affected interest owners in accordance with
4 Oil Conservation Division rules and regulations?

5 A. It is, it is.

6 Q. Have you made an estimate of the overhead and
7 administrative costs to be charged while drilling this well
8 and also while producing it, if it is successful?

9 A. Yes, sir.

10 Q. And what are those figures?

11 A. We propose a drilling rate of \$3500 a month and a
12 producing rate of \$350 a month.

13 Q. And what is the basis for those figures?

14 A. The basis is Ernst and Young's 1995 report.

15 Q. Have they been adjusted for the horizontal
16 wellbore?

17 A. Very slightly.

18 Q. How much of an adjustment, approximately?

19 A. Infinitesimal, almost. For a gas well shallower
20 than 5000 feet, the 1995 mean rate was \$3261, the median
21 rate was \$3000. The 1995 producing rates were \$365 mean
22 and \$330 median. We felt like that proposing \$3500 and
23 \$350 a month was more than fair, since it's a horizontal
24 well and it is a year later.

25 Q. Do you recommend that these figures be

1 incorporated into the order that results from today's
2 hearing?

3 A. We do.

4 Q. Texaco is requesting to be designated as operator
5 of the well, is it not?

6 A. Yes, sir.

7 Q. Have you obtained an approved application for
8 permit to drill --

9 A. We have.

10 Q. Were Exhibits 1 through 5 prepared by you or
11 compiled under your direction?

12 A. Yes, sir.

13 MR. CARR: At this time, Mr. Catanach, we move
14 the admission into evidence of Texaco Exhibits 1 through 5.

15 EXAMINER CATANACH: Exhibits 1 through 5 will be
16 admitted as evidence.

17 MR. CARR: That concludes my direct examination
18 of Mr. Lanning.

19 EXAMINER CATANACH: Mr. Kellahin?

20 CROSS-EXAMINATION

21 BY MR. KELLAHIN:

22 Q. Mr. Lanning, if you'll refer to your Exhibit
23 Number 1 with me, please. In February of 1996 when Texaco
24 and Hartman had competing pooling applications before the
25 Division for a vertical well in the southwest quarter of

1 23, was the Burlington-operated "B" 7 well, in the north
2 half of the northwest quarter of 26, an existing wellbore?

3 A. Yes, to the best of my recollection.

4 Q. All right. So at the time you and Mr. Hartman
5 were disputing development of Section 23, the southwest
6 quarter, the existing vertical well to the south of you, in
7 fact, was there and producing?

8 A. My recollection is that that well was completed
9 and put on line in February of 1996.

10 Q. Yes, sir. When you look at the western boundary
11 of the spacing unit over in 22, there is a gas well. It's
12 the "A" 4. I think it shows as the 4 well on this display?

13 A. Yes, sir.

14 Q. That was also an existing producing Rhodes Gas
15 Pool well at the time that you and Mr. Hartman were
16 disputing how to develop and drill the southwest quarter of
17 23?

18 A. That's correct.

19 Q. Up until August of 1996, in all your dealings
20 with Mr. Hartman, Texaco's position was a single vertical
21 well in the southwest quarter of 23; is that not true, sir?

22 A. That is not correct. We at all times thought
23 there was a high likelihood that in the event the first
24 well was a vertical well, that we would come back and
25 propose a second vertical well.

1 Q. All right. At no time prior to August of 1996,
2 then, did your dealings with Mr. Hartman include the
3 concept of this high-angle horizontal, multi-lateral
4 wellbore?

5 A. I can't recall any specific discussions regarding
6 a horizontal well.

7 Q. And it's not specifically requested in your
8 application for force-pooling of that spacing unit in Case
9 11,473, is it, sir?

10 A. Is that the 1995 case?

11 Q. That's the 1996 pooling case against Mr. Hartman.

12 A. No, it wasn't.

13 Q. And neither did Mr. Hartman propose back to
14 Texaco in Case 11,476 a high-angle horizontal multi-lateral
15 wellbore?

16 A. No, he did not.

17 Q. The dispute between you and Mr. Hartman involved
18 a difference in well locations, did it not, sir, for the
19 southwest quarter of 23?

20 A. I think it's wrong to characterize our dispute
21 with Mr. Hartman as simply a dispute in the locations of
22 the well. As I remember --

23 Q. Let me ask you the question again. My question
24 was, one of the components of that dispute was a difference
25 of well locations?

1 Let me ask you this: There was a difference in
2 well locations between you and Mr. Hartman?

3 A. There was a difference in the initial locations
4 that were proposed between us.

5 Q. All right. Mr. Hartman was proposing a location
6 in his case of 1980 from the south boundary, 660 from the
7 west side; is that not true?

8 A. I'd have to look at it to verify that. I thought
9 it was 1650.

10 Q. All right, let me show you the docket. I'm
11 looking at Hartman Case 11,476, and the footage is
12 described on the docket.

13 A. Yes, he is 1980 from the south line.

14 Q. All right. Now, Texaco's force-pooling
15 application against Mr. Hartman, in your case, asked for
16 the approval of the well in Unit Letter M, which would be
17 the southwest-southwest of 23?

18 A. That's correct.

19 Q. All right. Up until August of 1996, then, there
20 is no other competing offsetting wells to the spacing unit
21 for which there should be any concern; is that not true?

22 A. To the best of my knowledge, yes.

23 Q. So the change between Texaco's agreement for one
24 or more vertical wells in the southwest quarter was not
25 made based upon the offsetting wells?

1 A. I don't think I'm qualified to answer that
2 question.

3 Q. All right. Are you qualified to respond to the
4 fact that in August of 1996, Texaco changed its mind and
5 now proposed a high-angle horizontal multi-lateral
6 wellbore?

7 A. In either July or August of this year, I think
8 it's safe to say, we started looking at the possibility of
9 a horizontal well.

10 Q. And you communicated that to Burlington. I have
11 a copy of your letter of November 21st. I forgot the
12 exhibit number, Mr. Lanning --

13 A. 4, I believe.

14 Q. -- that's Exhibit Number 4, I think. Let's go
15 through the letter, if you don't mind, please.

16 A. Sure. Okay.

17 Q. All right. In the second paragraph, that has got
18 the dot to indicate its position in the first page, it
19 indicates that you've met with representatives of
20 Burlington on August 18th [sic] regarding the drilling of
21 wells in the proration unit, and at this meeting and in a
22 subsequent phone call you are proposing to Burlington the
23 drilling of one horizontal well or two vertical wells?

24 A. That's correct.

25 Q. All right. So the first occasion that I have

1 evidence of, of Texaco suggesting a change in the
2 development of the spacing unit, occurs on August 14th; is
3 that not true?

4 A. With another party, yes.

5 Q. Yes, sir.

6 A. Yes, that's correct.

7 Q. Are you aware --

8 A. May I clarify that answer a little bit?

9 Q. Sure.

10 A. We at all times discussed with Mr. Hartman the
11 possibility of two vertical wells.

12 Q. I am focusing on Burlington's relationship with
13 you, sir.

14 A. Okay.

15 Q. Are you aware, Mr. Lanning, that the closing of
16 the transaction between Hartman and Burlington with regards
17 to this exchange, which removed Mr. Hartman from
18 involvement in the southwest quarter, did not occur until
19 July 10th of 1996?

20 A. I don't remember the exact date. I have a copy
21 of it. I know it was not on April 1st.

22 Q. Okay. So you're not suggesting in your first
23 paragraph that Burlington was in a position by April 1st of
24 1996 to do anything about operations in the southwest
25 quarter, are you sir?

1 A. I suppose I was probably trying to infer that on
2 or about that date they knew they were going to acquire the
3 interest and that they knew that the operating agreement
4 was in effect.

5 Q. By April 1st of 1996, you're inferring that they
6 would --

7 A. I don't know when their discussions with Mr.
8 Hartman began.

9 Q. Have you tried to close a transaction with Mr.
10 Hartman?

11 A. I'm sorry?

12 Q. Have you tried to close an exchange or a
13 transaction or an agreement with Mr. Hartman?

14 A. Yes, sir, we have.

15 Q. They're very complicated, aren't they, sir?

16 A. Yes, sir, they are.

17 Q. They take an incredible amount of time, don't
18 they?

19 A. Yes, sir, they do.

20 Q. All right. So you're not inferring that in April
21 1st of 1996, that Burlington is going to have been in a
22 position that they can begin to assume operations under
23 that operating agreement; isn't that fair?

24 A. Yes.

25 Q. Okay. By mid-July, now, Burlington has closed

1 with Mr. Hartman, and there is a meeting with you and your
2 representatives in August in which you're now suggesting to
3 Burlington for the first time that you need to consider
4 this high-angle horizontal multi-lateral wellbore, right?

5 A. Or two vertical wells.

6 Q. All right. Your proposal of October 9th, that is
7 the formal letter by which you've communicated the AFE to
8 Burlington, and it describes the idea of the high-angle
9 horizontal well; is that not true?

10 A. Correct.

11 Q. Okay. Let's look at that letter. That's Exhibit
12 what, sir? It's the October 9th --

13 A. Three.

14 Q. Exhibit 3? The letter describes that the well is
15 to be drilled vertically to about 3200 feet, and then you
16 anticipate a lateral in the Sand 4, middle Yates, give an
17 approximate distance, and then you say you plan an
18 additional lateral in Sand 6 of the Yates, 1400 feet, and
19 you give him the spacing unit.

20 Did you transmit to Burlington a wellbore
21 schematic for the high-angle horizontal well?

22 A. No, sir.

23 Q. Did you give them a horizontal plan view for the
24 well?

25 A. No, sir.

1 Q. Did you give them a vertical plan view for the
2 well?

3 A. Not that I recall.

4 Q. Did you identify for them your nomenclature of
5 what Texaco thought they were describing when they suggest
6 that one of the laterals is in Sand 4?

7 A. No.

8 Q. Did you identify for Burlington what you were
9 meaning by your nomenclature of putting a lateral in Sand
10 6?

11 A. No.

12 Q. Did you give them a well plan?

13 A. Not that I recall.

14 Q. Did you give them any type of drilling prognosis?

15 A. No, sir.

16 Q. Did you disclose to them the direction of each
17 lateral?

18 A. Well, the bottomhole location is in the letter.

19 Q. Yes, sir, but I'm talking about the direction the
20 lateral takes after you drill the vertical portion.

21 A. Well, if you take from the surface location and
22 you go to the bottomhole location, I believe that gives you
23 the direction, does it not?

24 Q. No, sir, I'm not making myself clear. You've got
25 a vertical well being drilled to 3200 feet.

1 A. Correct.

2 Q. Then they're going to come back uphole a certain
3 distance and they're going to go in some direction 400 feet
4 in one of these sand members; is that not true?

5 A. Correct.

6 Q. You don't tell them what direction you're going,
7 do you? There's nothing in this letter that tells you what
8 direction you're going with that lateral; is that not true?

9 A. Well, in my opinion it does. If I'm not
10 understanding your question, I'm not qualified to answer
11 it.

12 Q. All right. Did you tell them in this letter the
13 angle at which the horizontal well is being drilled through
14 these sands?

15 A. No, sir.

16 Q. Okay. Do you have indication in your records of
17 when Burlington received the October 9th letter?

18 A. Yes, sir, I do.

19 Q. And what day did they get that letter?

20 A. You'll have to bear with me for a moment.
21 October 11th.

22 Q. The next exhibit you gave me was Texaco Exhibit
23 4. It was a letter of November 21st, the first paragraph
24 of which says you have reviewed Ms. Swierc's letter of
25 November 19th. It's not yet been introduced, Mr. Lanning.

1 Do you have a copy of Ms. Swierc's letter of November 19th?

2 A. Yes, sir.

3 Q. Would you please get that in front of you?

4 A. I'm going to take a minute to get this stuff
5 straightened out.

6 Q. Okay.

7 A. Okay.

8 Q. In the last sentence -- second to the last
9 sentence of her first paragraph, she says, BR, referring to
10 Burlington, "is continuing to evaluate our participation in
11 your multi-lateral horizontal well and in order to fairly
12 complete our evaluation, a drilling prognosis and wellbore
13 schematic would expedite the process. Please fax same to
14 the undersigned...at your earliest possible convenience."

15 Do you see that?

16 A. Yes, sir.

17 Q. You got that letter, did you?

18 A. Yes, sir.

19 Q. Did you -- You did not fax her the data, did you?

20 A. No, sir.

21 Q. You did not mail her the data, did you?

22 A. No, sir.

23 Q. You had the data, didn't you?

24 A. I don't think I'm qualified to answer that.

25 Q. Did you ask your technical people if they had the

1 data by which you could respond to her request?

2 A. I don't remember if we discussed it or not.

3 Q. You ignored her request?

4 A. I don't know if "ignore" is a good word.

5 Q. All right, let's look at the November 21st
6 letter. Is there anything in the November 21st response by
7 you to her that give her the information she's asked for?

8 A. No, sir.

9 MR. KELLAHIN: No further questions.

10 MR. CARROLL: Just a couple questions, Mr.
11 Lanning.

12 EXAMINATION

13 BY MR. CARROLL:

14 Q. On the October 9th letter, and the proposal of
15 the horizontal well, is it correct to say that this well is
16 going to be drilled vertically 3200 feet and then the
17 horizontal part of it will start?

18 A. I can't tell you exactly the footage where the
19 horizontal portion will start, but it's uphole from 3200
20 feet.

21 Q. So the bottomhole location is at 3200 feet?

22 A. No.

23 MR. CARROLL: Okay, I guess the questions can be
24 directed at another witness.

25 That's all.

EXAMINATION

1
2 BY EXAMINER CATANACH:

3 Q. Mr. Lanning, you first proposed this well to
4 Burlington October 9th; is that correct?

5 A. That's correct.

6 Q. And now when did Burlington come back and propose
7 their well to Texaco?

8 A. Their letter is dated November the 19th, 1996.

9 Q. Mr. Lanning you have -- I believe you said you
10 had the interest of the -- the Sutton and the Burr
11 interests --

12 A. That's correct.

13 Q. -- that signed Texaco's AFE?

14 A. That's correct.

15 Q. What's the response -- Have you had any response
16 from Nermyr?

17 A. None.

18 EXAMINER CATANACH: I have no further questions.

19 MR. CARROLL: I have one more question.

FURTHER EXAMINATION

20
21 BY MR. CARROLL:

22 Q. Mr. Lanning, was there any correspondence or
23 communications between you and Burlington between October
24 9th and November 19th?

25 A. Not that I recall.

1 MR. CARROLL: Okay, that's all I have.

2 EXAMINER CATANACH: The witness may be excused.

3 MR. CARR: At this time we call Charles Sadler.

4 CHARLES E. SADLER,

5 the witness herein, after having been first duly sworn upon
6 his oath, was examined and testified as follows:

7 DIRECT EXAMINATION

8 BY MR. CARR:

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

10 A. Charles E. Sadler.

11 Q. And where do you reside?

12 A. Midland, Texas.

13 Q. By whom are you employed?

14 A. Texaco E&P, Inc.

15 Q. And what is your position with Texaco?

16 A. Project geologist.

17 Q. Mr. Sadler, have you previously testified before
18 this Division?

19 A. Yes, I have.

20 Q. At the time of that testimony, were your
21 credentials as a petroleum geologist accepted and made a
22 matter of record?

23 A. Yes, they were.

24 Q. Are you familiar with the Applications filed in
25 each of these cases?

1 A. Yes, I am.

2 Q. Have you made a geological study of the area
3 which is involved in this hearing?

4 A. Yes, I have.

5 Q. And are you prepared to share the results of that
6 study with Mr. Catanach?

7 A. Yes.

8 MR. CARR: Are the witness's qualifications
9 acceptable?

10 EXAMINER CATANACH: They are.

11 Q. (By Mr. Carr) You've prepared exhibits for
12 presentation here today?

13 A. Yes, I have.

14 Q. Would you refer to what has been marked for
15 identification as Texaco Exhibit Number 6, identify and
16 review this for Mr. Catanach, please?

17 A. Exhibit Number 6 is a type log from the Rhodes-
18 Yates-Seven Rivers Gas Pool. This well is the Meridian
19 Moberly Rhodes Waterflood Number 2. If you'll refer back
20 to Exhibit Number 1, you'll see that this well is located
21 in Spot 0 of Section 21.

22 While this well is in the oil pool, the oil and
23 gas pool have common stratigraphic boundaries. This was
24 the nearest well that I could find in either the oil or gas
25 pool that completely penetrated the pool.

1 As you can see on Exhibit Number 6, the top of
2 the pool, the Yates, is approximately 2930 feet, and the
3 base of the pool, base of the Seven Rivers or top of Queen,
4 is at approximately 3580 feet. The Yates sands are the
5 primary reservoir within this pool.

6 Q. Let's go to Exhibit Number 7, your structure map.
7 Would you identify and review that for Mr. Catanach?

8 A. Exhibit Number 7 is a structure map prepared from
9 well control, on the top of the Yates Sand 6 member. We
10 see dip down to the southwest. We also see that the
11 proposed location is slightly updip to the Burlington
12 Rhodes "B" Federal Number 7 to the south, as well as the
13 Burlington Rhodes "A" Federal Number 4 to the west.

14 Q. Does structure play a significant part in
15 determining whether or not you make a productive well in
16 this area?

17 A. No, it doesn't.

18 Q. And what we have is a continuous formation
19 running from the proposed acreage across and into the oil
20 pool; is that right?

21 A. That's correct.

22 Q. Let's go to Exhibit 8, your cross-section. Would
23 you identify and review that?

24 A. Exhibit Number 8 is a north-south structural
25 cross-section through the Yates formation. On the left,

1 the north side, we see the then Meridian Rhodes "A" Number
2 3 to the Meridian Rhodes "A" Number 4, both these wells
3 located in Section 22, the proposed location, and then to
4 the south into Section 26, the then Meridian Rhodes "B"
5 Federal Number 7 and Linebery "B" Federal Number 1.

6 The area shaded in green is the reservoir-quality
7 sand which has porosity greater than 15 percent. We see
8 the two targets for the laterals. Sand 4 is the upper
9 lateral, and Sand 6 is the lower lateral. In Sand 4 we see
10 that it is discontinuous to the west in the Rhodes "A"
11 Number 4. And Sand 6, while it is continuous over the
12 area, we see that there are lateral discontinuities within
13 this zone.

14 This cross-section also exhibits some of the risk
15 associated with this area. The Linebery "B" Federal Number
16 1 to the south is a 40-acre east offset to the Rhodes "B"
17 Federal Number 7, and neither Sand 4 or Sand 6 encountered
18 reservoir-quality sands.

19 We also see that the proposed well will be
20 completed in correlative zones that are producing in the
21 Rhodes "B" Federal Number 7, operated by Burlington to the
22 south, as well as the Burlington Rhodes "A" Number 4,
23 completed to the west.

24 Q. Mr. Sadler, when we look at this exhibit, are the
25 sands in which you propose to complete your proposed

1 horizontal well the same sands that extend off into the oil
2 pool?

3 A. Yes, they are.

4 Q. So in fact, this proposed well would be completed
5 in the same interval as the Burlington wells to the south?

6 A. That is correct.

7 Q. When we look at this exhibit and the
8 discontinuous nature of the sand, in your opinion, is there
9 risk associated with drilling this well?

10 A. Yes, there is.

11 Q. Is there a chance that, in fact, this well could
12 not be a commercial success?

13 A. Yes, there is.

14 Q. Are you prepared to make a recommendation to the
15 Examiner as to the risk penalty that should be assessed
16 against any nonconsenting interest owner?

17 A. Yes, I am.

18 Q. And what is that?

19 A. 200 percent.

20 Q. Let's go back now and let's look at your Exhibit
21 Number 9, the isopach, Sand 4. Will you review that for
22 Mr. Catanach?

23 A. Exhibit Number 9 is an isopach map of the Yates
24 Sand 4, again reservoir-quality sand, which -- porosity
25 greater than 15 percent.

1 We see that this sand is discontinuous over the
2 area, however we do anticipate encountering approximately
3 20 feet of sand at the surface hole location, which will be
4 drilled in a northwesterly direction. We anticipate a
5 pinchout in that direction, which will dictate the exact
6 lateral length within Sand 4.

7 Q. And again, if we relate this back to the cross-
8 section, this sand extends from the proposed location to
9 the well that was drilled by Burlington in the northeast of
10 the northwest of Section 26 last year; is that right?

11 A. That is correct.

12 Q. All right. Let's go to Exhibit Number 10, the
13 isopach on Sand 6.

14 A. Exhibit Number 10 is again an isopach map based
15 on the 15-percent porosity cutoff of the Sand 6 package.
16 We see this sand is developed over a larger area. We
17 anticipate approximately 40 feet of reservoir-quality sand
18 through the length of the lateral.

19 Again, it is the -- does extend to the south in
20 Section 26, and also we see the risk associated with this
21 reservoir by the wells to the east which encountered no
22 reservoir sand.

23 Q. If we look at this again and relate it to the
24 cross-section, we are in the same sand as the Number 7 well
25 that's recently been drilled to the south of us in Section

1 26; is that correct?

2 A. That is correct.

3 Q. How close to the common lease line will the
4 proposed -- is the proposed surface location for the Texaco
5 well?

6 A. 660 feet.

7 Q. And how close to that common lease line is the
8 Burlington well south of us?

9 A. 330 feet.

10 Q. And that's permitted because of the difference in
11 the pool rules; is that right?

12 A. That is correct.

13 Q. Can you review for Mr. Catanach the conclusions
14 that you've reached from your study of this area?

15 A. The proposed horizontal well is necessary to
16 protect this tract from offsetting drainage from the south,
17 as well as the west, from Burlington-operated wells.

18 There are two sands, each suitable for a
19 horizontal lateral, and there is sufficient geologic risk
20 to impose a 200-percent risk factor.

21 Q. Were Exhibits 6 through 10 prepared by you?

22 A. Yes they were.

23 MR. CARR: At this time, Mr. Catanach, we would
24 move the admission into evidence of Texaco Exhibits 6
25 through 10.

1 EXAMINER CATANACH: Exhibits 6 though 10 will be
2 admitted as evidence.

3 MR. CARR: And that concludes my direct
4 examination of Mr. Sadler.

5 EXAMINER CATANACH: Mr. Kellahin?

6 MR. KELLAHIN: Thank you, Mr. Examiner.

7 CROSS-EXAMINATION

8 BY MR. KELLAHIN:

9 Q. Mr. Sadler, if you'll turn with me to Exhibit 8,
10 that's your cross-section. This represents your work
11 product, does it, Mr. Sadler?

12 A. I didn't hear your question, sir.

13 Q. This represents your work product?

14 A. Yes, sir.

15 Q. Were you involved as Texaco's geologist in early
16 1996 when you were having the dispute with Mr. Hartman?

17 A. Yes, I was.

18 Q. Had you prepared maps at that time?

19 A. There were some early maps prepared.

20 Q. Did they include this cross-section?

21 A. No, they did not.

22 Q. Did you have the logs of these four wells
23 available then?

24 A. I do not believe I had the two wells to the south
25 of the acreage, the recently drilled Meridian wells.

1 Q. The "B" 7 well for Meridian, Burlington?

2 A. That's correct.

3 Q. Now, in the oil pool, that ownership is divided
4 such that Texaco has the rights to the oil production; is
5 that not true?

6 A. That's true.

7 Q. And Burlington, Meridian, has the gas in the oil
8 pool?

9 A. That is correct.

10 Q. And when we get in the southwest quarter of 23,
11 because of Burlington's succeeding Mr. Hartman, both Texaco
12 and Burlington would share both the gas and the oil?

13 A. That is correct.

14 Q. When we look at this particular prospect, is
15 there any probability that you're going to get oil
16 production here?

17 A. I do not anticipate it.

18 Q. You're looking for gas?

19 A. That is correct.

20 Q. Within the gas pool, you've identified two sands,
21 the 4 and the 6?

22 A. That is correct.

23 Q. Let's look at the log of the "B" 7 well on the
24 cross-section. Describe for me what has caused you to
25 separate the base of the 4 sand from the top of the 6 sand.

1 A. Between those two sands is what I call Sand 5.
2 The cause for separating those two sands is the reservoir
3 quality. From the neutron and density response, this is
4 interpreted as a shaley siltstone, which I would believe to
5 be nonproductive.

6 Q. In this area, apparently, at least on the wells
7 and this cross-section, Sand 5 is not productive?

8 A. That is correct.

9 Q. Have you examined any of the cores in this area?

10 A. No, sir.

11 Q. Do you have any opinion with regards to the
12 relationship between vertical and horizontal permeability?

13 A. No, sir.

14 Q. When you look at Sand 4, it appears in the
15 closest well to this spacing unit to exist in the Rhodes
16 "B" 7 well to the south; is that not true?

17 A. That is true.

18 Q. And if you look at the western offset well, the
19 Rhodes "A" 4, it's absent?

20 A. That's correct.

21 Q. Okay. Do you have a schematic that shows me the
22 direction and the angle for the lateral you're proposing in
23 Sand 4?

24 A. I don't for my exhibits.

25 Q. Let's take your Sand 4 isopach. Let's look at

1 the surface location in the southwest quarter on the
2 display, where the well starts. Okay, you see that?

3 A. Yes, sir.

4 Q. And then it's targeted with a bottomhole location
5 up to the northwest corner of the spacing unit?

6 A. Yes.

7 Q. At some distance between those two points we
8 cross over the zero line and get out of the A sand?

9 A. The "4" sand, yes, sir.

10 Q. I'm sorry, the "4" sand.

11 A. Yes, sir.

12 Q. Do you use or do you have a recommendation as to
13 the minimum thickness using this 15-percent porosity cutoff
14 at which you're going to be able to recover gas?

15 A. No, sir, I don't.

16 Q. Okay. The Application as filed requests approval
17 for a lateral in Sand 4 of approximately 500 feet; is that
18 not true?

19 A. That is true.

20 Q. What is the direction of that lateral?

21 A. The direction of the Number 4 -- or Sand 4
22 lateral is in the same direction as the Number 6 lateral,
23 which is to the 1980-660 location.

24 Q. So the lateral is moving towards the "A" 4 well
25 for which there is no competing Sand 4 --

1 A. Not directly --

2 Q. -- in existence?

3 A. I'm sorry. Not directly towards the "A" 4.

4 Moving to the northeast of the "A" 4 location.

5 Q. Okay. It is moving away from the "B" 7 well, in
6 which there is Sand 4 production?

7 A. That is correct.

8 Q. Okay. What is the thickness of the Sand 4
9 interval in the "B" 7 well? You've got what? 23 feet?

10 A. 23 feet.

11 Q. But you've chosen to move away from that?

12 A. Yes, sir.

13 Q. When we look at the Number 6 sand, do you have a
14 schematic that shows me the angle and the direction for the
15 lateral you're proposing in the Sand 6?

16 A. Exhibit Number 10 shows the direction, but I
17 don't have the exhibit that shows the angle.

18 Q. There is a subsequent exhibit that will give us
19 that information?

20 A. Yes.

21 Q. All right. To the best of your knowledge, is --
22 I assume that it's going towards the northwest corner as
23 you've shown on Exhibit 10?

24 A. That is correct.

25 Q. What is the distance that you understand you're

1 proposing for the lateral in Sand 6?

2 A. The Sand 6 lateral will be approximately 1300
3 feet. The total lateral between the two zones is 1400
4 feet, but the way the well path is designed, some of that
5 distance is lost in Sand 6.

6 Q. All right, say that again.

7 A. My best-guess estimate of the length of the Sand
8 6 lateral is approximately 1300 feet.

9 Q. Okay, let's look, then, at the schematic on the
10 cross-section, where you projected the vertical position of
11 the Texaco well at this point. The well is drilled
12 vertically to about 3200 feet. That's the total depth I
13 saw on the AFE you submitted?

14 A. That is correct.

15 Q. All right. And that will take us down below --
16 substantially below Sand 6?

17 A. That is correct.

18 Q. All right. The idea, then, is to come back up in
19 that wellbore and develop a kickoff point for Sand 6
20 lateral and build angle and then go in some angle through
21 6?

22 A. Actually, it will plug back and initiate the
23 initial lateral in Sand 4.

24 Q. Okay, then what happens?

25 A. Then the second lateral in Sand 6 will drop off

1 of the Sand 4 lateral.

2 Q. There is going to mathematically be a distance,
3 based upon the angle, that moves you farther away from the
4 Rhodes "B" 7 well when you penetrate this Sand 6?

5 A. That is correct.

6 Q. Okay. Do you know the current producing rate of
7 the Rhodes "B" 7 well?

8 A. Our last conversation with Burlington, they
9 indicated the well was making approximately 800 MCF a day.

10 Q. Do you know what the current producing rate is on
11 the Rhodes "A" 4 well?

12 A. I believe it's approximately 500 MCF a day.

13 Q. Okay. Under your plan, you intend to penetrate
14 sand 6 and take the lateral away from the better of the two
15 producing wells for which you say there's competition?

16 A. To maximize the length of the lateral, that is
17 correct.

18 Q. Okay. Now, am I correct in understanding that
19 the plan for the Texaco well does not include any
20 stimulation of the horizontal wellbore, any of the
21 laterals?

22 A. Not fracture stimulation.

23 Q. That's what I'm saying.

24 A. Yes.

25 Q. No fracture stimulation?

1 A. (Nods)

2 Q. Without fracture stimulation, will the Sand 4 and
3 the 6 gas production that's stored in those sands be
4 separated?

5 A. I don't know that I understand your question.

6 Q. All right. In the absence of the Texaco well as
7 it exists now, is Sand 4 and Sand 6 isolated from each
8 other in the reservoir?

9 A. Yes, they are.

10 Q. And when you drill the well and put the laterals
11 in each of those two sands, your intention is to not
12 communicate the two together?

13 A. They will be communicated in the wellbore.

14 Q. I understand.

15 A. Yes.

16 Q. But there is no activity planned that would cause
17 the reservoirs outside the wellbore to be in communication?

18 A. That is correct.

19 Q. Okay. Are there any wellbores in the gas pool
20 that have been drilled, that include this concept of a
21 lateral?

22 A. Not that I'm aware of.

23 Q. In either sand?

24 A. Not that I'm aware of.

25 Q. Is there any high-angle lateral wells in the oil

1 pool in the Rhodes area?

2 A. Not that I'm aware of.

3 Q. Is this your idea for a high-angle horizontal
4 multi-lateral wellbore, Mr. Sadler?

5 A. It is Texaco's recommendation, yes.

6 Q. Yes, sir, but that's not -- you didn't generate
7 this idea, did you?

8 A. As a group, the idea was generated.

9 Q. But not by you?

10 A. Well, not individually by me; as a group. As the
11 team, group, the idea was generated.

12 Q. Okay, whose idea was this?

13 A. I don't recall who actually came up with the
14 idea. It was just recommended as a team.

15 Q. Has the composition of the team changed before
16 and after August of 1996?

17 A. No, it has not.

18 Q. So the team members that participated in this
19 change of plan are the same team members you had in early
20 1996?

21 A. Yes.

22 Q. You've shown even within Sand 6 that there
23 appears to be some vertical separation when we look at the
24 Rhodes "A" 4 well; do you see that?

25 A. Yes, sir.

1 Q. Describe for me what you see that causes you to
2 conclude there is separation within that well.

3 A. Again, like Sand 5, we see that within Sand 6 in
4 the "A" 4 there are zones of low porosity, shaley, silty
5 intervals.

6 Q. And that relationship appears to exist between
7 the Rhodes "A" 3 and the "A" 4, and yet as you move to the
8 "B" 7, the sand separation is interpreted to be divided in
9 only two parts instead of 3?

10 A. That is correct.

11 Q. Let's look at the sand package for Sand 6 on the
12 isopach, Exhibit 10, if you please. What's your basis in
13 using a 15-percent porosity cutoff?

14 A. Based on the available core data in the area,
15 this is my porosity cutoff that I have utilized.

16 Q. I thought you told me you hadn't looked at any
17 core data.

18 A. I have not looked at core; I have looked at core
19 data.

20 Q. All right.

21 A. I believe your original -- Maybe I misunderstood
22 your question. I thought it was, Have you looked at core?

23 Q. All right, but you have looked at the data that
24 someone else generated from their examination of the core?

25 A. In terms of analysis, yes.

1 Q. Yeah, you're looking at somebody else's report?

2 A. Well, from a laboratory report, yes.

3 Q. All right. And in looking at the core data, am I
4 correct in still understanding that you do not have an
5 opinion on the relative permeability between vertical and
6 horizontal?

7 A. No, I do not.

8 Q. You have not. All right.

9 When we look at the isopach for Sand 6, have you
10 attempted to aid your engineer in formulating a conclusion
11 with regards to the drainage area for any of the wells on
12 this map? Are you with me?

13 A. I missed --

14 Q. Yes, sir, let me --

15 A. I misunderstood the first part of your question.

16 Q. All right. Looking at the isopach --

17 A. Right.

18 Q. -- have you taken the isopach here and helped
19 your engineer derive any volumetric calculations of gas in
20 place?

21 A. I don't know exactly what our engineer used in
22 doing the analysis. This data is available.

23 Q. All right. Did you provide him any type of ϕh
24 map for calculating drainage areas?

25 A. No.

1 Q. Did you participate in any way, other than
2 providing the isopach to the engineer, in working on
3 drainage calculations?

4 A. Just providing the geologic input needed to do
5 the analysis.

6 Q. All right. Is that geologic input the same
7 display as we're looking at now?

8 A. Yes.

9 Q. And this is your work product?

10 A. Yes.

11 MR. KELLAHIN: No further questions, Mr.
12 Examiner.

13 MR. CARR: Mr. Catanach, if I could ask a couple
14 of questions.

15 REDIRECT EXAMINATION

16 BY MR. CARR:

17 Q. Mr. Sadler, if we look at this, what you're
18 confronted with is a situation where you have a tract
19 that's offset from two directions; is that right?

20 A. Yes.

21 Q. And the well to the south is 330 from your lease
22 line, and the well to the west is 660 from your lease line;
23 isn't that right?

24 A. That is correct.

25 Q. And you're trying to offset that by drilling a

1 horizontal wellbore, correct?

2 A. That is correct.

3 Q. A horizontal wellbore will give you more access
4 to the actual contact with the formation than a vertical
5 wellbore; is that not fair to say?

6 A. That's correct.

7 Q. And it will also give you access to the formation
8 offsetting the well that's offsetting you to the west?

9 A. Yes.

10 Q. And it will also give you an offsetting interval
11 in that formation that offsets the well to the south; isn't
12 that fair to say?

13 A. That is correct.

14 Q. Mr. Kellahin asked you, Weren't you drilling away
15 from the well to the south? Well, the bottom line is, when
16 you get it done you're going to have a wellbore no matter
17 which way you drill it, correct?

18 A. Correct.

19 Q. And it's going to run from approximately an
20 offset location of the well to the south to approximately
21 an offset location to the well from the west; isn't that
22 what you're trying to achieve?

23 A. Correct.

24 MR. CARR: That's all I have.

25 MR. KELLAHIN: I have an additional response.

1 fracture length from the -- combined between those two
2 wells. But again, you know, that's beyond my specialty,
3 and I'm really not qualified to address the fracture-
4 stimulation issues.

5 Q. Geologically, though, it's acceptable to access
6 the reservoir in one of two ways, if I understand your
7 testimony: You can do that with vertical wells. And, in
8 your opinion, you can do it with this single high-angle
9 horizontal wellbore with the two laterals?

10 A. That is correct.

11 MR. KELLAHIN: No further questions.

12 EXAMINATION

13 BY EXAMINER CATANACH:

14 Q. Mr. Sadler, the first lateral in the Sand 4 will
15 be essentially very close to where the vertical wellbore is
16 at; is that correct? Where you'll first --

17 A. Yes.

18 Q. -- encounter the Sand 4?

19 A. Yes.

20 Q. And that lateral will go a distance of
21 approximately 500 feet to the northwest?

22 A. That is correct.

23 Q. Okay. So at that point you will take another
24 lateral off that, into the Sand 6?

25 A. That is correct.

1 Q. And that will go a distance -- Once you're in the
2 Sand 6, that will go a distance of 1300 feet?

3 A. Depending how far you are away from the vertical
4 well. Once you've reached the sand -- 13- -- That's just
5 my estimate. There will be additional testimony to address
6 those specific numbers.

7 Q. Will your Sand 6 lateral penetrate all of those
8 sands in the Sand 6 interval?

9 A. That is the design.

10 Q. Even the lowermost sand that you have separated
11 there?

12 A. That is the intent of the project.

13 EXAMINER CATANACH: I believe that's all I have.
14 The witness may be excused.

15 MR. CARR: At this time I'd call Charles Wolle.

16 CHARLES R. WOLLE,

17 the witness herein, after having been first duly sworn upon
18 his oath, was examined and testified as follows:

19 DIRECT EXAMINATION

20 BY MR. CARR:

21 Q. Mr. Wolle, would you state your full name for the
22 record, please?

23 A. Charles R. Wolle.

24 Q. How do you spell your last name?

25 A. W-o-l-l-e.

1 Q. Where do you reside?

2 A. Midland, Texas.

3 Q. By whom are you employed?

4 A. I'm employed by Texaco Exploration and
5 Production, Inc.

6 Q. And what is your position with Texaco?

7 A. Project engineer.

8 Q. Have you previously testified before the New
9 Mexico Oil Conservation Division and had your credentials
10 accepted and made a matter of record?

11 A. Yes, sir.

12 Q. And at that time you were qualified as a
13 petroleum engineer?

14 A. Yes, sir.

15 Q. Are you familiar with the Applications filed in
16 each of these consolidated cases?

17 A. Yes, sir.

18 Q. Are you familiar with how Texaco plans to
19 horizontally drill this well?

20 A. Yes.

21 Q. And are you prepared to review these plans with
22 Mr. Catanach?

23 A. Yes.

24 MR. CARR: Are the witness's qualifications
25 acceptable?

1 EXAMINER CATANACH: They are.

2 Q. (By Mr. Carr) All right, Mr. Wolle, let's go
3 back first, just to Exhibit 1, the plat, and just identify
4 for us again the surface location for the well.

5 A. The surface location is 660 feet from the south
6 line, 1100 feet from the west line, Section 23.

7 Q. Now, the project area for this well will be what?
8 The southwest of Section 23?

9 A. Correct.

10 Q. And this exhibit shows the offsetting wells in
11 the Yates formation?

12 A. Yes, sir, that's correct.

13 Q. Has the type log for the well previously been
14 introduced as Texaco Exhibit Number 6?

15 A. Yes, it has.

16 Q. And that was reviewed by Mr. Sadler?

17 A. That's correct.

18 Q. All right. Now, let's go to Texaco Exhibit
19 Number 11, your vertical plan, and I would ask you to
20 review this for Mr. Catanach.

21 A. What we're proposing is to drill a conventional
22 vertical well to approximately 3200 feet, run open-hole
23 logs. That will give us further information on the depth
24 and the thickness of the Sands 4, Sand 6.

25 We'll run and cement the casing and we'll come up

1 to approximately 2775 feet, set a whipstock, cut a window
2 in the casing, drill a short-radius curve to a measured
3 depth of plus or minus 2930 feet. We'll be building angle,
4 about 57.3 degrees per hundred feet. That should get us
5 into Sand 4. We will drill an approximate 500-foot lateral
6 in that sand, depending on the distance that that sand does
7 go in that direction. The 500-feet is an estimate; it will
8 be adjusted as appropriate during the drilling operation.

9 That will take us to a -- or at the end of that,
10 the estimated 500 feet, a true vertical depth at 2885 feet,
11 measured depth approximately 3332 feet. At that point
12 we'll come back and low-side the curve at approximately
13 2895 feet measured depth, build a 10-degree-per-100-foot
14 curve starting at 69 degrees. We'll continue building that
15 curve to a measured depth of about 3090 feet, total
16 vertical -- or true vertical depth, approximately 2906.
17 We'll drill a near-horizontal lateral at 88.6 degrees to a
18 measured depth, 4236 feet, approximately, true vertical
19 depth approximately 2935 feet.

20 That should take us to the base of the Sand 6
21 sand that we will have penetrated from the top of the Sand
22 6 to the base of the Sand 6.

23 The proposed bottomhole location from the surface
24 location, approximately 342.56 degrees azimuth, horizontal
25 displacement approximately 1400 feet, true vertical depth

1 approximately 2935 feet, measured depth approximately 4236
2 feet.

3 Q. All right. Let's go now to Texaco Exhibit Number
4 12, the horizontal view. Would you review that, please?

5 A. Again, this shows the project area, which is a
6 single spacing unit comprised of the southwest quarter of
7 Section 23. It shows the producing area as defined by the
8 red line, which is a drilling window for the proposed well,
9 a standard 660-foot setback from the outer boundary of this
10 standard 160-acre spacing unit in the Rhodes-Yates-Seven
11 Rivers Gas Pool.

12 Q. The wellbore at all times will be at least 660
13 feet from the outer boundary of the project area; is that
14 correct?

15 A. That is correct.

16 Q. And what is the direction of the azimuth of the
17 horizontal portion of the well?

18 A. For both laterals it will be approximately 342.56
19 degrees. The upper lateral will be about 500 feet in
20 length, the lower lateral about 1400 feet in length.

21 Q. In your opinion, will the drilling of the
22 proposed enable Texaco to protect the southwest quarter of
23 Section 23 from drainage from the offsetting Burlington
24 wells?

25 A. Yes.

1 Q. In your opinion, will granting this Application
2 and drilling of this well as proposed be in the best
3 interest of conservation, the prevention of waste and the
4 protection of correlative rights?

5 A. Yes, sir.

6 Q. How soon does Texaco plan to spud this well?

7 A. It's on our rig schedule tentatively for February
8 10th of 1997.

9 Q. Were Exhibits 11 and 12 prepared by you or under
10 your direction?

11 A. Yes, sir.

12 Q. And can you testify as to the accuracy of these
13 two exhibits?

14 A. To the best of my knowledge, they are true and
15 correct, yes, sir. I'm not qualified to speak to all the
16 technical aspects of horizontal drilling, but as far as I
17 know, that is correct.

18 MR. CARR: All right. At this time we would move
19 the admission of Exhibits 11 and 12.

20 EXAMINER CATANACH: Exhibits 11 and 12 will be
21 admitted as evidence.

22 MR. CARR: That concludes my direct examination
23 of Mr. Wolle.

24 EXAMINER CATANACH: Mr. Kellahin?

25 MR. KELLAHIN: Thank you, Mr. Examiner.

CROSS-EXAMINATION

1
2 BY MR. KELLAHIN:

3 Q. Mr. Wolle, did you generate Exhibit Number 11?

4 A. No, sir, I did not.

5 Q. Who prepared that?

6 A. It was prepared by Phoenix Drilling Services, an
7 organization that is employed by Texaco through our Denver
8 drilling office.

9 Q. What's your technical background, sir? You're a
10 petroleum engineer?

11 A. I'm a petroleum engineer, yes, sir.

12 Q. Do you do reservoir engineering work?

13 A. Yes, sir.

14 Q. Do you do drilling engineering work?

15 A. No, sir.

16 Q. Describe for me this team concept that you're
17 working in. Mr. Sadler referred to what I thought was a
18 team. Did I misunderstand?

19 A. No, that's correct.

20 Q. Who's on the team?

21 A. It's just Mr. Sadler, geologist; myself,
22 engineer; Mr. Lanning, our landman. We employ services of
23 our drilling department in Denver for the generation of
24 drilling cost estimates, situations like this for
25 horizontal drilling. They generate the well plan according

1 to information we furnish to them.

2 Q. So you don't generate the AFE?

3 A. That's correct, I do not. That comes from our --

4 Q. You're not an expert in that area concerning
5 comparison of vertical well costs to horizontal costs?

6 A. That's correct.

7 Q. Someone else in your company does that work?

8 A. Yes, sir.

9 Q. Have they provided you an analysis to compare
10 vertical versus horizontal well costs for this area?

11 A. I don't know that we got a formal analysis for a
12 vertical well. I can't remember one way or the other. In
13 conversation, approximately twice the cost for a horizontal
14 well as for a vertical well.

15 Q. Do you have a copy of your well plan or a
16 prognosis with you here now? Did you bring it to the
17 hearing?

18 A. Yes, sir.

19 Q. You didn't introduce it as an exhibit?

20 A. No, sir.

21 Q. Did you as a reservoir engineer do any drainage
22 calculations?

23 A. No, sir, the concern that was addressed by Mr.
24 Sadler, the uncertainty as to the extent of the reservoir
25 to the east, is a big question mark, to the east and the

1 northeast.

2 Q. So when you look at the potential drainage from
3 the south, from the "B" 7, did you attempt to try to
4 quantify the area of drainage being affected by the "B" 7
5 well?

6 A. No, sir.

7 Q. One of your concerns is drainage of the spacing
8 unit?

9 A. That is a question in our minds, yes, sir.

10 Q. Yes, sir. But you have not attempted to quantify
11 whether or not there is any drainage occurring of the
12 southwest quarter of 23 via the Rhodes "B" 7 well?

13 A. That is correct, I have not.

14 Q. And you have not done so for the "A" 4 well?

15 A. That is correct.

16 Q. Okay. Have you attempted to determine what in
17 your opinion is the likely EUR for the horizontal well in
18 the southwest quarter of 23?

19 A. Yes, based on very limited information that we
20 have about recovery from horizontal wells and recovery of
21 vertical wells in the area.

22 Q. Okay, do you have an opinion or have you done a
23 calculation to determine gas in place in the southwest
24 quarter of 23?

25 A. No, sir I have not, again because of the

1 uncertainty as to the extent of the reservoir in the
2 eastern and northeasterly directions.

3 Q. Okay, have you looked at production decline
4 curves on the "A" 4 well and used those curves by which to
5 project an ultimate recovery for the "A" 4 well?

6 A. I have looked at the production curve from the
7 "A" 4 well, and -- I don't recall offhand what the
8 cumulative production is. I recall it's somewhere in the
9 order of a quarter of a billion cubic feet, and I'm sure I
10 ran through a decline analysis, and I do not recall what
11 that indicated.

12 Q. You're unable to testify today as to what in your
13 opinion would be the EUR for any of the existing gas wells
14 in this area?

15 A. I do not have any information that I could find
16 for the Rhodes "A" 7 well to the south, and again I did
17 have the production information from either *Dwight's* or *PI*
18 for the Well Number 4 to the west.

19 Q. Did you request that information of Burlington?

20 A. No, I did not.

21 Q. There are vertical gas wells in the gas pool, are
22 there not?

23 A. Yes, there are.

24 Q. And there are gas wells older than the "A" 4 and
25 the "B" 7?

1 A. Yes, sir.

2 Q. And a reservoir engineer could within reasonable
3 probabilities calculate estimated ultimate gas recoveries
4 for the vertical wells?

5 A. There is another well, I believe the Rhodes "A"
6 Number 1, which indicates a cumulative production on the
7 order of 25 billion cubic feet, if I remember correctly, so
8 there is a significant disparity or difference from well to
9 well.

10 Q. All right, sir --

11 A. It's --

12 Q. -- for the closest offsetting wells in that gas
13 production, you have not done the work and are therefore
14 unable to reach an opinion as to what those gas wells could
15 recover; is that not true?

16 A. I do not have that information with me at this
17 time.

18 Q. The cost of the horizontal multi-lateral wellbore
19 is about half a million dollars?

20 A. \$485,000, if I remember correctly.

21 Q. And that's without the surface facilities?

22 A. Yes, sir.

23 Q. And so you throw in the surface facilities, it's
24 another \$30,000 or --

25 A. \$25,000 -- \$20,000 to \$30,000, somewhere in that

1 range, probably. I think Burlington's estimate was
2 \$19,000, and that's not dissimilar from ours.

3 Q. All right, so -- I'm a lawyer, I work better with
4 round numbers and simple problems. So half a million; is
5 that right?

6 A. Half a million.

7 Q. Okay, half a million. When you're looking at a
8 half-million-dollar investment, don't you also see what the
9 potential gas recovery is by which to justify that
10 expenditure?

11 A. Yes, sir.

12 Q. And what did you look at and what did you find
13 out?

14 A. Again, I'm going on memory. As I recall,
15 something on the order of 1.7 billion cubic feet
16 recoverable reserves from this well.

17 Q. So if that number is right, then it should be
18 enough gas reserves to pay for a horizontal well which is
19 twice the cost of a vertical well?

20 A. Yes, sir.

21 Q. If that number is not right, wouldn't it give you
22 concern about the more expensive drill plan of using the
23 horizontal well?

24 A. I have concerns about that, yes, sir, I do.

25 Q. Uh-huh.

1 A. I have concerns also about what we're going to
2 encounter in this southwest quarter of the section.

3 Q. Pretty risky to do this, isn't it?

4 A. There is risk involved, yes, sir.

5 Q. When we look at the lateral in Sand 6 --

6 A. Yes, sir.

7 Q. -- by the time you get the 88 degrees, we're
8 virtually horizontal in Sand 6?

9 A. Yes, sir.

10 Q. And if I understand the schematic here, by the
11 end of the lateral, you're in the bottom edge of Sand 6?

12 A. That's the intent, yes, sir, that's what we are
13 proposing.

14 Q. Okay. And I also understand that this well is
15 not going to be artificially stimulated in any way?

16 A. That's correct.

17 Q. And as we move farther out into --

18 A. It will not be fracture-stimulated.

19 Q. That's what I'm saying.

20 A. Yes, sir.

21 Q. It will not be fracture-stimulated.

22 As we move farther out and towards the northwest
23 quarter, we have completed the lateral for Sand 6, and
24 you're in the bottom portion of Sand 6. And yet when we
25 look at Mr. Sadler's display we see that Sand 6 further

1 subdivides; is that not true?

2 A. What we're actually intending is that we will
3 enter the top of Sand 6, wherever we enter it --

4 Q. Uh-huh.

5 A. -- and then when we get to the end of the hole,
6 we'll be at the bottom, so that we'll be passing through
7 Sand 6 over the entirety of the lateral.

8 Q. Did you look at how he's interpreted Sand 6?

9 A. Yes, sir.

10 Q. Sand 6 is going to change in its -- He's got a
11 structural cross-section here, doesn't he? Yeah, he's got
12 a structural cross-section, so we see that the reservoir
13 interval in "A" 4 is lower than you intend to find it both
14 in each side? Are you with me? Let me show you.

15 A. No, I'm not following.

16 Q. Do you see the "A" 4? Do you see Sand 6, on the
17 structural cross-section? Do you find it?

18 A. Yes, sir.

19 Q. All right. Look where it is; it's lower down in
20 a vertical sense, it's lower on structure, all right? Do
21 you see that?

22 A. Yes, sir.

23 Q. If you move to the left to see the next log, see
24 the Sand 6 package? It's higher in the reservoir?

25 A. Yes, sir.

1 Q. All right. Look on the other side of that "A" 4.
2 Do you see where your well is projected?

3 A. Yes, sir.

4 Q. You're higher. How are you going to account for
5 the difference of change in vertical elevation in the sand
6 with this horizontal lateral?

7 A. Our intention is to remain within Sand 6 at all
8 times. Where at any particular point in the lateral we
9 are, relative to the top or the base of the Sand 6, we
10 won't know; we're not attempting to control that.

11 Q. Under this interpretation there's the probability
12 that the Sand 6 is subdivided -- it's discontinuous
13 laterally -- and as you move through it, you're going to
14 miss some of those lenses, aren't you?

15 A. Yes, sir. We won't be in all of the lenses at
16 all of the time in our lateral.

17 Q. Nor are these lenses long enough to be accessed
18 by the lateral, at least at one point somewhere in that
19 process? They're too small.

20 A. I can't say one way or the other on that, as to
21 their areal extent.

22 Q. Okay. Were you part of the team prior to August
23 of 1996 with regards to this plan?

24 A. Yes, sir.

25 Q. Prior to August of 1996, it was your

1 recommendation to develop the southwest quarter with one or
2 more vertical wells --

3 A. Yes, sir.

4 Q. -- is that not true? And the first vertical well
5 was to be the direct offset to the "B" 7 well, the one on
6 the south?

7 A. I don't remember the precise location but it was
8 in the southern part of the tract.

9 Q. All right, sir, let me show you the docket sheet.
10 If you'll look at the Texaco advertisement, it says you're
11 going to be in Unit Letter K. You're out of the southwest-
12 southwest, okay?

13 A. 660 from the south line and 660 from the west
14 line.

15 Q. Yeah.

16 A. Which it's not a direct offset, but --

17 Q. I didn't mean to confuse you. The vertical well
18 that you were proposing, urging and willing to participate
19 at that time, was that a well to be drilled vertically and
20 to be artificially fracture-stimulated?

21 A. That was our proposal at that time for
22 consideration, yes, sir.

23 Q. Okay. It is also -- There's also an opportunity
24 to drill a second vertical well, if the parties desire to
25 do so, along the western boundary to meet any competition,

1 if there exists any, from the "A" 4 well?

2 A. A possibility, yes. I'm not sure about the
3 likelihood, because of various considerations. Pool rules
4 call for a single well in a proration unit.

5 Q. Yes, sir.

6 A. And in the northern half of this proration unit,
7 more or less, there's an area of shifting sand.

8 Q. There are some topographical problems.

9 A. Right.

10 Q. Have you examined to see whether the
11 topographical problems of the shifting sand dunes can be
12 overcome with a location that could be up in the north side
13 of the spacing unit?

14 A. Without doing any specific work that can be
15 overcome, probably there will be some additional cost
16 entailed in the construction of the surface location, but
17 that's not been quantified, and it's not -- That's not
18 definitive, but it's a likelihood.

19 Q. Are you also aware, Mr. Wolle, that the Division
20 allows for a second well in a nonprorated gas pool if the
21 second well is necessary to meet offset competition from
22 drainage that the original well cannot protect the spacing
23 unit?

24 A. I might have known that at one time. I do not
25 recollect it.

1 Q. Whose idea was it for Texaco to change from
2 supporting the vertical well concept in the spacing unit,
3 to go to the high-angle horizontal well?

4 A. I've thought about that since you asked a similar
5 question of Mr. Sadler, and I do not recall a specific
6 individual who put forth that idea. It was one that came
7 up, best way I can describe it, in group conversation.

8 We, Texaco, have been doing more horizontal
9 drilling, we're gaining more expertise in that, and this
10 appeared to be a situation where that might have some
11 application.

12 As far as a specific individual who first
13 mentioned it, I just don't recall.

14 Q. This is a low-pressure reservoir, is it not?

15 A. Yes, sir.

16 Q. Have you examined the effect of a low-pressure
17 reservoir on the practicality and the productivity of the
18 horizontal wellbore technology?

19 A. No, sir, I have not.

20 Q. Have you attempted to apply Texaco's expertise in
21 horizontal drilling to a simulation of performance by the
22 horizontal well in this spacing unit versus a vertical
23 wellbore?

24 A. We did some very basic simulation work, inputting
25 the parameters as we knew them, and some of the models that

1 we have available to us, and quite frankly, they gave us
2 what I considered non-believable numbers in terms of
3 initial rate and ultimate recoveries. Initial rates in
4 excess of 8 million a day.

5 Q. When we look at the design plan --

6 A. Yes, sir.

7 Q. -- I'm looking at Exhibit 11 -- I don't believe
8 you talked about where you're going to hang the tubing in
9 the well. I assume there's tubing in the well?

10 A. Initially, it would be inside -- or above the
11 kickoff point, probably. I don't know that for sure.

12 One of the considerations that we had in drilling
13 and casing the well to its TD, if sometime in the future
14 there's any water production associated with this well --
15 and we have no indication that there will be, or not really
16 any particular reason to expect it, but if there is in the
17 future, that would give us some wellbore that would be
18 available as a sump, if you would, to collect water if we
19 have to pump the well.

20 We can set our set our tubing down there and
21 remove water from the wellbore without having to support a
22 column of water in the wellbore.

23 Q. Did you do any calculations or come to any
24 conclusions with regards to the effect that will have on
25 the pressure relationship in the laterals, in your ability

1 to recover the gas?

2 A. No, sir, I did not.

3 MR. KELLAHIN: I have no further questions, Mr.
4 Examiner.

5 REDIRECT EXAMINATION

6 BY MR. CARR:

7 Q. Mr. Wolle, what you're proposing to do is drill a
8 vertical hole and log the hole; is that right?

9 A. Yes, sir.

10 Q. And you're going to kick off, cut a window, based
11 on your information, and drill a lateral in the fourth
12 sand?

13 A. Yes, sir.

14 Q. Then you will come back and kick off of that
15 first lateral and put a second lateral in the sixth sand;
16 is that right?

17 A. That's correct.

18 Q. You testified that by doing that you're probably
19 going to miss some of the lenses within the sixth sand?

20 A. Yes, sir.

21 Q. Do you have a better chance of intersecting the
22 lenses within the sixth sand with a vertical -- or with a
23 horizontal wellbore or with a vertical wellbore?

24 A. With a horizontal wellbore.

25 MR. CARR: That's all I have.

EXAMINATION

1
2 BY EXAMINER CATANACH:

3 Q. The plan is to go to the base of the Sand 6; is
4 that correct --

5 A. Yes, sir.

6 Q. -- laterally?

7 So you will, in fact, encounter the bottom sand
8 interval in the Sand 6?

9 A. Yes, sir, that's our intention to do that.

10 Q. In terms of draining the spacing unit, do you
11 have an opinion as to whether the horizontal well would do
12 a better job than two vertical wells?

13 A. I believe it will in the context that we should
14 be able to contact with our borehole a greater portion of
15 the reservoir with a horizontal lateral or laterals than we
16 could with two vertical wells. I can't quantify that,
17 but...

18 Q. What recent experience has Texaco had with
19 horizontal wellbores? Have there been any drilled in the
20 southeast part of New Mexico?

21 A. In New Mexico we have, within the last couple of
22 weeks, been drilling our first horizontal well. To the
23 best of my knowledge, that's our first well in southeast
24 New Mexico.

25 Q. Have you been involved with a horizontal well

1 elsewhere?

2 A. No, sir, I have not.

3 Q. Do you have knowledge of what Texaco's experience
4 has been with these wellbores anywhere else?

5 A. Yes, sir, we've had an active program in our
6 Bryant G. Devonian field in -- or near Midland, the gas
7 field in the Devonian. We've been successfully drilling
8 some horizontal wells over in -- I believe it's Winkler
9 County of New Mexico [sic], our Little Joe Area, some
10 horizontal wells there. We have drilled multi-lateral
11 wells in our Aneth Unit in Utah.

12 In this area, to the best of my knowledge, the
13 well that we started a couple of weeks ago in Lea County is
14 our first horizontal experience in Lea County.

15 Q. What formation is that well drilling to? Do you
16 know?

17 A. It's in the North Vacuum-Abo West Unit, but I
18 can't be more specific as to the formation.

19 Q. Have you actually started drilling laterals --
20 the lateral in that wellbore yet?

21 A. That's going to be a single lateral. And yes, we
22 have, and I haven't checked in the last couple of days. We
23 should be nearing the end of that. That's -- I've been
24 just keeping up with the progress, but not actively
25 involved in the work itself.

1 Q. The actual benefit you're getting from drilling a
2 horizontal wellbore is, you're going to encounter a greater
3 area of the sand lenses in that --

4 A. Yes, sir, and it will be a better opportunity to
5 fully drain this proration unit.

6 Q. Is it Texaco's opinion that a single well
7 probably wouldn't protect the entire proration unit from
8 offset drainage?

9 A. That's correct, because we have a south offset
10 and a west offset.

11 EXAMINER CATANACH: I have nothing further of the
12 witness.

13 Mr. Carr?

14 MR. CARR: That concludes our presentation.

15 EXAMINER CATANACH: Okay.

16 MR. KELLAHIN: I have a follow-up question to the
17 Examiner, if I may, sir.

18 FURTHER EXAMINATION

19 BY MR. KELLAHIN:

20 Q. Mr. Wolle, if two vertical wells cost the same as
21 this one horizontal well, why don't you drill two vertical
22 wells and place them, one in approximate competition with
23 the 4 "A" and the other one in competition with the "B" 7?

24 A. Well, for one thing, I'm not -- again, as I
25 mentioned earlier, I'm not sure that the cost for another

1 well in the northwest part of the proration unit will be
2 the same as the cost for a vertical well in the southern
3 part, because of the potential difference in location cost.

4 Q. As part of your analysis, did you explore the
5 details of doing that and what it might actually be?

6 A. At the very least it should be equivalent to the
7 cost of a well here.

8 Q. Okay.

9 A. There's no potential lower cost. Any potential
10 cost would be higher than that, if additional location
11 preparation is necessary.

12 Q. I'm having trouble understanding how you could
13 formulate opinions about the preference for a horizontal
14 well until you have done some type of work to determine
15 what the recoveries would be of gas from the spacing unit,
16 and you've not done that. Why not?

17 A. The uncertainty as to the extent of the
18 reservoir, the opportunity for a horizontal well to contact
19 -- or a multi-lateral well to contact more of the
20 productive formation, were the primary considerations.

21 Q. In order to reach that judgment, though, you need
22 to know how effective the vertical wells are being, right?

23 A. There's significant variation among the vertical
24 wells as to exactly what their ultimate recoveries are
25 going to be.

1 MR. KELLAHIN: All right, no further questions.

2 MR. CARR: No further questions.

3 EXAMINER CATANACH: Mr. Wolle may be excused.

4 Let's go ahead and take a break at this point,
5 about 10 or 15 minutes.

6 (Thereupon, a recess was taken at 9:59 a.m.)

7 (The following proceedings had at 10:15 a.m.)

8 LESLYN M. SWIERC,

9 the witness herein, after having been first duly sworn upon
10 her oath, was examined and testified as follows:

11 DIRECT EXAMINATION

12 BY MR. KELLAHIN:

13 Q. Ms. Swierc, for the record would you please state
14 your name and occupation?

15 A. Leslyn Swierc, and I'm a senior staff landman
16 with Burlington Resources.

17 Q. And where do you reside?

18 A. In Midland, Texas.

19 Q. On prior occasions have you testified before the
20 Division and had your qualifications as an expert in
21 petroleum land management accepted and made a matter of
22 record?

23 A. Yes, sir, they have.

24 Q. And have you been the principal landman for
25 Meridian, now Burlington, with regards to consolidating

1 ownership and responding to well requests in the Rhodes Gas
2 Pool, particularly with emphasis on the southwest quarter
3 of Section 23?

4 A. Yes, sir, I have.

5 Q. And when Mr. Lanning refers to individuals at
6 Burlington that he's corresponding to about this topic on
7 behalf of Texaco he, in fact, is corresponding with you?

8 A. Yes, sir.

9 MR. KELLAHIN: We tender Ms. Swierc as an expert
10 petroleum landman.

11 EXAMINER CATANACH: She is so qualified.

12 Q. (By Mr. Kellahin) Let me ask you to help me go
13 through the documents, to identify them. We'll do it
14 rather quickly, and then we'll come back and we'll talk
15 about the major components of your position.

16 A. All right.

17 Q. Let's start, first of all, Burlington Exhibit 1
18 is what, ma'am?

19 A. This is the well proposal dated October 9th from
20 Texaco to Burlington, proposing the multi-lateral
21 horizontal well that Mr. Lanning has been speaking of.

22 Q. Is this -- Your receipt of this letter, is this
23 the first time that you were aware that Texaco was
24 proposing a multi-lateral horizontal well for the southwest
25 quarter of 23?

1 A. Yes, sir, it is. And we had our meeting on
2 August the 14th. We discussed the possibility -- Actually,
3 it was kind of a brainstorming session, and we discussed
4 the possibility of a horizontal well, but there was no
5 mention ever made of a multi-lateral. And when we got this
6 letter it was the first indication that we had that Texaco
7 was, in fact, anticipating a multi-lateral horizontal.

8 Q. In the meetings with Texaco in August of 1996,
9 was that the first discussions you were aware of, of Texaco
10 proposing anything other than one or more vertical wells in
11 the spacing unit?

12 A. Mr. Lanning and I had had conversations prior to
13 August of 1996. He was aware that I was trying desperately
14 to close a transaction with Mr. Hartman concerning the
15 acreage in question, and at that time Mr. Lanning had
16 mentioned that in order to avoid a dispute over operations
17 in the area, that if we would be willing to drill two
18 vertical wells, that they would not object to Burlington or
19 Meridian operating. But there was no mention of a
20 horizontal well at that time.

21 Q. Okay. Upon receiving the October 9th proposal,
22 now, for the well that's before the Examiner, what then did
23 you do with that information?

24 A. I then generated a memo internally, and it was
25 submitted to our reservoir engineer and to our geologist to

1 evaluate the well proposal and look at the possibility of
2 participation with Texaco.

3 Q. Your Exhibit Number 2 is what?

4 A. Exhibit Number 2 is a letter from Mr. Carr with
5 an attached amended application for Texaco's compulsory
6 pooling of an unorthodox location with respect to the
7 Rhodes 23 Fed Com Number 1, the horizontal well, and it was
8 received in my office on November 4th.

9 Q. Okay, Exhibit 3?

10 A. Exhibit 3 is a letter dated November 19th from
11 myself to Mr. Lanning wherein I stated to him that we were
12 continuing to evaluate the horizontal well, that we were
13 again a bit confused and needed more data to be able to
14 carefully and completely evaluate the multilateral idea,
15 and I needed a wellbore schematic and a drilling prognosis,
16 or actually the engineer and geologist needed that
17 information, and I had requested it.

18 But at the same time, within this letter, I
19 suggested an alternative proposal to Texaco, and that was
20 that we drill a vertical well at a legal location in the
21 southwest quarter of the southwest quarter of Section 23
22 for \$234,000, roughly, and pending evaluation of that well,
23 then we could look at the viability of drilling a second
24 vertical well.

25 Q. Why did you choose November 19th to propose an

1 alternative suggestion to Texaco with regards to pursuing
2 the more conventional vertical well?

3 A. Well, I had been dealing with Mr. Hartman since
4 February of 1996, trying to close a transaction with him.
5 It was a very complicated transaction. It involved multi-
6 phases and various transactions, and there was
7 correspondence between Mr. Hartman and myself almost daily,
8 and the question arose as to whether or not we would even
9 close the transaction with Mr. Hartman.

10 Q. When did you finally get that transaction?

11 A. We finally closed that around the 10th of July.
12 And then we had roughly -- later in the -- later on in our
13 discussions with Mr. Hartman, I would say around June or
14 July, was I made aware that there was even an operating
15 agreement in place with respect to the southwest quarter of
16 Section 23.

17 Then we closed with Mr. Hartman, and just because
18 I closed on the documents with Mr. Hartman, my job didn't
19 stop there. I then had to generate internal memos so that
20 accounting, gas marketing, revenue settlement, division
21 orders and numerous other departments were identified of
22 the transactions that had occurred, and there was a lot of
23 internal processes going on there with respect just to the
24 ownership and the settlements with Mr. Hartman, but there
25 was nothing -- no evaluation going on with the well at that

1 time, because my process was not completed yet.

2 Q. When were you able to direct your attentions to
3 Mr. Lanning's requests that activity occur in the southwest
4 quarter of 23?

5 A. The day -- I think it was a couple of days before
6 he had requested that we sit down and discuss the
7 possibility of development, and that was just prior to
8 August 14th.

9 Q. In the November 19th letter, you're asking for
10 information, and you're also proposing a counterproposal,
11 again for the conventional well?

12 A. Right.

13 Q. At this point in time there is no disagreement.
14 The -- If there was an operating agreement in existence, it
15 has expired by now?

16 A. That's correct.

17 Q. And you have already received, now, Mr. Carr's
18 compulsory pooling Application for the high-angle/multi-
19 lateral horizontal well?

20 A. That's correct.

21 Q. In order to provide an alternative solution,
22 then, you have suggested that Burlington go back and --
23 that Texaco go back and reconsider their position and
24 return, then, to the original proposal of the vertical
25 well?

1 A. That is correct. And I might add one other
2 thing. The delay in getting the proposal out on November
3 19th -- We did not exactly understand the well proposal
4 that was proposed in the October 9th letter, particularly
5 the directions of the laterals and the length of both of
6 them. And then it was not until we received, on November
7 4th, the amended application by Mr. Carr, we were able to
8 get additional information as to the laterals within that
9 well.

10 Q. Even with the force-pooling application, you did
11 not have a complete well plan and you did not know the
12 angle and the direction of the laterals?

13 A. That is correct.

14 Q. And you requested that on November 19th?

15 A. That is correct.

16 Q. And you agree that Mr. Lanning, as he testified,
17 did not provide that to you?

18 A. That's correct.

19 Q. All right, let's turn to the next exhibit; it's
20 Exhibit 4. Identify and describe this letter.

21 A. This letter is a letter dated November 27th, from
22 myself to the other owners within the southwest quarter. I
23 had proposed the alternative vertical well idea to Texaco
24 on November 19th and had not heard anything from them, so I
25 proceeded ahead and subsequently proposed the well to the

1 other owners within the southwest quarter, the horizontal
2 -- or excuse me, the vertical well idea.

3 Q. Okay. And then Exhibit 5?

4 A. Exhibit 5 is the letter dated November 21st from
5 Mr. Lanning to myself where he outlines a chronology of the
6 events that have occurred leading up to their continuing on
7 with the force pooling.

8 Q. Let's address yourself to the first paragraph of
9 his letter of November 21st.

10 A. Yes, sir.

11 Q. It was not until July 10th of 1996 that
12 Burlington was substituted in for Hartman in the
13 southeast -- southwest quarter of 23?

14 A. That is correct.

15 Q. So prior to that, you would not have had any
16 control over operations in the southwest quarter of 23?

17 A. No, sir, we would not.

18 Q. Was there a point in time where you were under
19 the misimpression that you might have an interest in the
20 southwest quarter of 23?

21 A. In early 1995, I had lease take-offs done, or
22 mineral take-offs done, by an independent broker, and the
23 results of those take-offs showed that Texaco owned the
24 west half of the southwest quarter and that Oryx owned the
25 east half of the southwest quarter.

1 I subsequently made offers to both Texaco and to
2 Oryx to purchase their interests in those two 80-acre
3 tracts. Various transactions and conversations occurred
4 with respect to both Texaco and Oryx. Oryx actually still
5 believed that they owned the interest, and I made a deal
6 with Oryx to purchase that interest.

7 Prior to closing on the acquisition of Oryx's
8 interest, I had a title opinion done by an attorney, and
9 his results showed that Oryx did, in fact, not own the
10 interest, and I did not close on the acquisition with Oryx.

11 Now, as --

12 Q. At that point, then, you --

13 A. At that point in time.

14 Q. You've abandoned, then, your suggestion that you
15 should participate in a well in the southwest quarter
16 because, in fact, you have no interest?

17 A. That is correct. Now, Mr. Lanning was aware that
18 I was dealing with Oryx. I made him aware that we had made
19 a deal with Oryx, and he said if we closed with Oryx, then
20 they would look at participating in a vertical well with us
21 at that time.

22 Q. Okay. Is the southwest quarter of 23 different
23 than the ownership or relationship in other portions of
24 this immediate vicinity in the Rhodes area?

25 A. Yes, sir, it is. The oil and gas rights are not

1 separated or segregated in the southwest quarter of 23.
2 The oil and gas rights are common, whereas if you look to
3 the south and to the west, within the Rhodes unit itself,
4 the oil rights are owned by Texaco, the gas rights are
5 owned by Burlington.

6 Q. And how are those resources and rights being
7 developed? Who operates the wells, and what's happening?

8 A. Texaco operates and is drilling oil wells within
9 the Rhodes unit area where they own the oil rights, and
10 Burlington is drilling and operating the gas wells, and
11 some of them are in the same proration unit.

12 Q. So there is agreement and cooperation with the
13 companies in order to develop those resources in the oil
14 pool?

15 A. Oh, yes, sir.

16 Q. This agreement here is simply over the type of
17 well to be drilled; is that not true?

18 A. That is correct.

19 MR. KELLAHIN: Mr. Examiner, I have a certificate
20 of notification with regards to the parties. I'll submit
21 it following Ms. Swierc's testimony.

22 But that concludes my presentation of her
23 evidence, and I would move the introduction of her Exhibits
24 1 through 5.

25 EXAMINER CATANACH: Exhibits 1 through 5 will be

1 admitted as evidence.

2 Mr. Carr?

3 CROSS-EXAMINATION

4 BY MR. CARR:

5 Q. Ms. Swierc, you were present for Mr. Lanning's
6 testimony, were you not?

7 A. Yes, sir.

8 Q. And he presented figures that set out the
9 ownership in the southwest quarter of Section 23. Were you
10 present for that testimony?

11 A. Yes, sir.

12 Q. He indicated that it was 50-percent owned by
13 Texaco and 48-percent owned by Burlington, roughly. Do you
14 agree with the ownership numbers that were presented by Mr.
15 Lanning?

16 A. Yes, sir, I do.

17 Q. He also testified that the acreage to the south
18 and also to the west was 100-percent of the gas rights
19 owned by Burlington Resources; do you agree with that
20 testimony?

21 A. Yes, sir.

22 Q. Now, if we look at the testimony presented by Mr.
23 Lanning, he also indicated there were certain wells
24 offsetting this spacing unit in 23, in particular the "A"
25 7, 330 off of the lease line, south of the unit?

1 A. "B" 7.

2 Q. "B" 7, I'm sorry.

3 A. Yes, sir.

4 Q. And the "A" 4 offsetting to the west 660 from the
5 lease line. Do you agree with that?

6 A. Yes, sir.

7 Q. Okay. Now, Burlington or Meridian actually
8 proposed the well on this 160-acre unit in August of 1995,
9 did we not?

10 A. (Nods)

11 Q. That's back when we had the title question?

12 A. Yes, sir.

13 Q. And because of that, there have been efforts
14 between you, Hartman and Texaco to develop this acreage
15 really off and on since that time; is that fair to say?

16 A. Yes, sir, that's fair.

17 Q. At the time that you actually closed the deal
18 with Mr. Hartman, you were aware that Texaco had already
19 filed an application to pool that acreage for one well and
20 had backed off of that as part of the deal?

21 A. Yes, sir.

22 Q. And at the time you acquired that interest, you
23 knew that since, oh, the beginning of 1996, or perhaps
24 before that, Texaco had been trying to get a well drilled
25 out in that acreage?

1 A. I wouldn't say that Texaco had been trying to get
2 a well drilled. I think that that acreage had set dormant
3 for some time, and Burlington actually was try- -- or
4 Meridian, at the time, was driving the boat.

5 In our early conversations with Texaco, they
6 seemed really disinterested in participating or trying to
7 get a well drilled until we had said that we could get the
8 interest from Oryx, and then began pushing. And so I
9 wouldn't say that they were pushing to get the well
10 drilled, but I think they were in cooperation to develop
11 the acreage.

12 Q. When you acquired this interest, did you know
13 that Texaco was interested in drilling a well in that
14 tract?

15 A. I assumed that they were, yes, sir.

16 Q. And that interest was acquired, you said, in
17 July?

18 A. Yes, sir, that's when we closed.

19 Q. All right. And you were involved with follow-up
20 on the Hartman meeting after that time, I believe you said?

21 A. Yes.

22 Q. It was only shortly before your August 14 meeting
23 that you really had time to devote to this project; is that
24 right?

25 A. That is correct.

1 Q. And you were involved in the meeting with Mr.
2 Lanning and Texaco representatives, and other Burlington
3 representatives too, trying to think through what ought to
4 be done; is that right?

5 A. Yes, sir.

6 Q. At that meeting, Texaco indicated that
7 Burlington, if they would go out and drill a couple of
8 wells, could, in fact, operate the tract; isn't that right?

9 A. That is correct.

10 Q. And they asked you to respond by September 13th,
11 did you not?

12 A. Right.

13 Q. From the date of that August 14 meeting until
14 your November, 1996, letter, did you, Burlington, respond
15 to Texaco with any well proposal that acreage?

16 A. Not with any well proposal particularly, but we
17 did let them know that we were in the middle of budget and
18 that pri- -- or subsequent to our August 14th meeting and
19 that we would need at least 30 days, because that was
20 taking up all of our technical time and we couldn't devote
21 it to looking at a well.

22 Q. But from August the 14th to November the 19th,
23 you weren't dealing with Hartman?

24 A. That is correct.

25 Q. And you knew they had given you a 30-day period

1 within which to see if you would drill a well?

2 A. That's correct.

3 Q. And there was no response beyond that formally
4 back to Texaco for that entire period of time?

5 A. That's correct.

6 Q. And that during that period of time, you stated
7 you didn't know about what -- exactly what it was they
8 wanted after you got the proposal for the horizontal well.
9 It wasn't, though, until November the 19th that you even
10 decided to ask; isn't that right?

11 A. We were still trying -- we were wrestling -- and
12 I will defer this to our engineer, but we were still
13 wrestling with trying to assume or make assumptions on what
14 type of evaluation to run.

15 Q. But you stated that you didn't get that data, but
16 you didn't even ask until November the 19th; isn't that
17 right?

18 A. That's correct.

19 Q. And that was two-weeks-plus after you'd already
20 received notice that we were force-pooling -- or seeking a
21 force-pooling order --

22 A. That's correct.

23 Q. -- isn't that correct?

24 A. This is not the only well proposal we were
25 working on at the time.

1 Q. But it's the only one for this acreage?

2 A. Yes, sir.

3 Q. It's the only one you were negotiating with
4 Texaco on this acreage?

5 A. That's correct.

6 MR. CARR: Mr. Catanach, I am trying to beat an
7 11:30 time frame.

8 Q. (By Mr. Carr) But you proposed your well by your
9 letter dated November 27th, correct?

10 A. (Nods)

11 Q. That is -- And you attached your AFE at that
12 time; is that correct?

13 A. Yes, sir.

14 Q. And that went not only to Texaco but it also went
15 to Nermyr, Sutton and Burr?

16 A. It only went to those three parties. It had
17 not -- It did not go to Texaco.

18 Q. When was it formally proposed to Texaco?

19 A. On November 19th.

20 Q. Okay, and did you get any response at all from
21 Mr. Nermyr?

22 A. No. No, sir.

23 Q. Did you get any response from Ms. Sutton or Mr.
24 Burr?

25 A. No, sir.

1 Q. And you understand that they have executed the
2 Texaco AFE?

3 A. I did not understand that until I saw Exhibit
4 Number 2 this morning.

5 Q. You're not the person, actually, to question
6 about comparing costs for a horizontal well with a vertical
7 well; is that right?

8 A. That's correct.

9 Q. We just have the two AFEs, and those numbers
10 speak for themselves?

11 A. (Nods)

12 Q. Has Burlington -- Has it not advised other
13 operators in the area that its interests in these
14 properties are for sale?

15 A. Yes, sir.

16 Q. And if we drill one well with you now, and you
17 sell this to somebody else, we have no assurance that even
18 if we need an additional well out there, that the successor
19 operator would have any interest in that at all; isn't that
20 right?

21 A. That is correct.

22 Q. Do you know anything about the surface of the
23 location in the north half of this spacing unit?

24 A. I know there are sand dunes present, yes, sir.

25 Q. Do you know how they might complicate a second

1 location up there?

2 A. I believe that the research that we've done shows
3 that a second well, vertical well, can be located within
4 the north half of that northwest quarter -- or, excuse me,
5 southwest quarter.

6 Q. Have you gotten an application or permit to drill
7 approved for your well?

8 A. As it's not approved, no, sir.

9 MR. CARR: That's all I have. Thank you.

10 THE WITNESS: Thank you.

11 MR. KELLAHIN: One quick follow-up question, Mr.
12 Examiner.

13 REDIRECT EXAMINATION

14 BY MR. KELLAHIN:

15 Q. Am I correct in understanding that at least up
16 until August of 1996, despite the fact that Texaco had the
17 largest single percentage in the spacing unit, they were
18 willing to let first Hartman and then Burlington operate
19 the vertical well?

20 A. That is correct.

21 Q. And the first idea -- or the first time you had
22 the idea that Texaco was going to propose or suggest a
23 horizontal well was in August of 1996; is that not true?

24 A. That's true.

25 Q. And the first time you became aware that it would

1 involve multiple laterals was not until receiving the
2 force-pooling application in early November of 1996?

3 A. Actually, it was when we received the letter of
4 October 9th that we saw that it was multi-lateral, and then
5 we got the additional information from the force-pooling
6 application.

7 MR. KELLAHIN: Thanks, no further questions.

8 EXAMINATION

9 BY EXAMINER CATANACH:

10 Q. Ms. Swierc, Burlington is not proposing to drill
11 two wells on the proration unit at this time?

12 A. No, sir, we would like to take what we feel is
13 the smart approach and drill one well, watch the results,
14 and then drill a second well if we believe it's necessary.

15 Q. Do you have any idea when that decision to drill
16 the second well will take place?

17 A. Generally when we're developing an area, and
18 again I may defer this to the engineer, but I would say
19 that we would at least have to have six months' worth of
20 production data to know whether or not it's economically
21 viable to drill a second well.

22 Q. Have you been in contact at all with the Nermyr,
23 Sutton or Burr interests in this proration unit?

24 A. I have tried to contact Ms. Sutton and have left
25 messages with both she and Mr. Burr.

1 Q. The November 27th letter was the first time that
2 the well was proposed to these interest owners?

3 A. Yes, sir, it was.

4 Q. And your compulsory pooling application was filed
5 November 26th, the day before that; is that correct?

6 A. I believe that's correct.

7 Q. That's not common practice with Burlington, is
8 it, to file a compulsory pooling application and then try
9 and secure the voluntary agreement?

10 A. No, sir, it isn't. What I was hoping, or
11 actually anticipating, was that we would be able to work
12 out some sort of alternative proposal or alternative
13 agreement with Texaco and then be able to acquire or get
14 the joinder of the additional owners after that point.

15 I might also say that it was in response to
16 having received the application by Texaco that we were
17 being force-pooled.

18 Q. If this acreage is -- if Meridian is -- or
19 Burlington is awarded operatorship of this proration unit
20 and you drill the well and you subsequently sell the
21 acreage, what obligation would the successor operator have
22 to drill a second well on that proration unit? Would he be
23 under any kind of obligation to do that?

24 A. I don't think contractually, but I think as an
25 operator we have fiduciary responsibilities to our

1 nonoperators, and I would assume that anyone that would
2 purchase this -- This part of a much larger package, and
3 anyone that might purchase this interest would have enough
4 operations experience that they would understand those
5 responsibilities to nonoperators to fully develop the
6 acreage, and it only makes economic sense to them to do so.

7 EXAMINER CATANACH: I have nothing further of the
8 witness. The witness may be excused.

9 ADAM W. SZANTAY,

10 the witness herein, after having been first duly sworn upon
11 his oath, was examined and testified as follows:

12 DIRECT EXAMINATION

13 BY MR. KELLAHIN:

14 Q. All right, sir, for the record would you please
15 state your name and occupation?

16 A. Yes, sir, Adam William Szantay, and a geologist
17 for Burlington Resources.

18 Q. Mr. Szantay, on prior occasions have you
19 testified before the Division as a petroleum geologist and
20 had your qualifications accepted and made a matter of
21 record?

22 A. Yes, I have. Yes, they have.

23 Q. And have you continued with Mr. Chris Settle, the
24 reservoir engineer for Burlington, to study the geology and
25 to participate with him on making technical decisions

1 concerning the Rhodes Gas Pool?

2 A. Yes, sir, I have.

3 Q. We're about to look at Exhibits 6 and 7. Are
4 these exhibits that you prepared yourself?

5 A. Yes, they are.

6 Q. And is it based upon your own personal study of
7 and information that you have analyzed in order to prepare
8 these exhibits?

9 A. Yes, it is.

10 Q. Based upon this information, are you now prepared
11 to share with the Division Examiner your conclusions,
12 recommendations and opinions?

13 A. Yes, I am.

14 MR. KELLAHIN: We tender Mr. Szantay as an expert
15 petroleum geologist.

16 EXAMINER CATANACH: He is so qualified.

17 Q. (By Mr. Kellahin) Let's take a moment and set
18 the geologic stage for the Examiner. It might be helpful
19 if we'll just take Exhibit 6, which is the cross-section,
20 and look at the locator map.

21 Texaco's Exhibit 1 had a color-coded map where
22 they showed the acreage and outlined the pool boundary.
23 When we look at the southwest quarter of 23, that's in the
24 gas pool, is it not, Mr. Szantay?

25 A. Yes, it is.

1 Q. All right. And south of that line in Section 26,
2 we're in the oil pool?

3 A. Yes, that's correct.

4 Q. Give us a quick geologic lesson and show us why
5 that makes sense.

6 A. The structural dip in the area is to the
7 southwest, so Section 23 structurally is going to be higher
8 than Section 27. The naturally occurring deposits of oil
9 are downdip in the Yates, the naturally occurring deposits
10 of natural gas are going to be updip in the Yates
11 sandstones.

12 Q. As we move downstructure, then, along that
13 boundary, the lower portion of the reservoir is going to be
14 oil-productive?

15 A. Yes, sir, that's correct.

16 Q. When we get before that structural line in the
17 southwest quarter of 23, even the lower portion of Rhodes
18 Pool, now, is gas-productive, as opposed to gas and oil?

19 A. That's correct.

20 Q. All right. Let's look at the southwest quarter.
21 It appears that you have the same four logs that we saw
22 from the Texaco expert?

23 A. Yes, that's correct.

24 Q. All right. Do you have a copy of his cross-
25 section?

1 A. Not in front of me.

2 Q. All right, let me give you one. Mr. Sadler was
3 specifically describing his target sands as the Sand 4 and
4 the Sand 6.

5 So that we can make the connection, when we look
6 at where you have identified the markers for the top of the
7 Yates and the top and the bottom of the middle Yates
8 sandstone, are you and Mr. Sadler identifying the same
9 points?

10 A. In front of me I have Texaco's Exhibit Number 8
11 and Burlington Resources Exhibit Number 6. The top of the
12 Yates -- top of the Yates agrees on both, as picked on both
13 core sections, cross-section agrees, and the base of the
14 Yates agrees on both cross-sections.

15 Q. And both you and Mr. Sadler have chosen a
16 structural cross-section to display the logs?

17 A. That is correct.

18 Q. When we look at your cross-section, are we going
19 to find Sands 4 and 6 contained within the middle Yates
20 sandstone package?

21 A. That is correct.

22 Q. All right. Why have you chosen not to
23 specifically identify Sands 4 and 6 as the target zones and
24 instead have chosen a wider interval?

25 A. Sands 4 and 6 are gas-productive, but they are

1 not the only gas-productive sands in the acreage in
2 question.

3 Q. Show us the others.

4 A. If I refer to Burlington Resources Exhibit Number
5 6, we have divided the Yates into a middle Yates sandstone
6 and a lower Yates sandstone. The lower Yates sandstone is
7 also gas-productive in the area.

8 Q. All right, let's look specifically at the log of
9 the Rhodes "A" 4 well. It's the second from the left.

10 A. That's correct.

11 Q. You see it's perforated down in the lower Yates
12 sandstone?

13 A. That's correct.

14 Q. All right. Do you believe that the lower Yates
15 sandstone is a target at your proposed location in the
16 southwest quarter of 23?

17 A. Yes, sir, we do.

18 Q. Would it be accessed by a vertical well as
19 proposed by Burlington?

20 A. Not according to what I've seen today.

21 Q. No, your proposal --

22 A. Oh, oh, by --

23 Q. -- Burlington?

24 A. -- Burlington, yes, it would be accessed by
25 vertical wellbore in the area -- in the acreage in

1 question.

2 Q. All right. As you have understood and seen and
3 learned from Texaco, that horizontal lateral is not going
4 to access, expose or otherwise be capable of production of
5 the lower Yates sandstone gas?

6 A. That is correct.

7 Q. That's a big concern for you, isn't it?

8 A. Yes, it is, there's significant amounts of gas in
9 the lower Yates sandstone.

10 Q. Do you agree with Mr. Sanders' conclusion that
11 this use of high-angle horizontal wellbore technology with
12 the dual lateral system is the most appropriate and
13 effective way to develop the gas resources in this spacing
14 unit?

15 A. No, sir, I do not.

16 Q. Why not?

17 A. Drilling a vertical wellbore on the acreage in
18 question will penetrate all of the sands, it will address
19 all of the sandstones which are not vertically continuous,
20 and in my experience, this is not an appropriate
21 application of horizontal technology.

22 Q. Describe for us from a geologic point of view why
23 you conclude that this is not an appropriate reservoir in
24 which to apply horizontal wellbore technology.

25 A. One needs to communicate all of the sand

1 packages, which are separated by less permeable dolomites
2 and some shales, to the wellbore, and that's most
3 effectively done with a vertical wellbore.

4 Q. Mr. Sadler believes to the contrary. He thinks
5 he's going to access more of these little lenses with the
6 horizontal laterals.

7 A. Examination of the permeability and porosity data
8 from sidewall cores that we have from the Moberly Rhodes 2
9 Y, which is in Section 21, in the southeast quarter of
10 Section 21, very close to the acreage, and worked on by our
11 staff petrophysicist, which I supervised, indicates that
12 the vertical permeability is one-third to one-tenth of the
13 horizontal permeability in the Yates sand; therefore it is
14 less than likely that there would be vertical communication
15 between the sands.

16 Q. So how does that affect your recommendation with
17 regards to the application of a horizontal wellbore?

18 A. I would not recommend the use of horizontal
19 technology in this particular case.

20 Q. That normally is applied to reservoirs that have
21 good relationships between vertical and horizontal
22 permeability?

23 A. Yes, sir, in my experience, in horizontal wells
24 that I've drilled, there's much better vertical
25 communication, such as a natural fracturing system or

1 something, that you would want to communicate with a
2 horizontal wellbore here. I believe a vertical wellbore,
3 fracture-stimulated, would communicate all these sands and
4 best drain the gas.

5 Q. Do you see this reservoir as having any kind of
6 natural fracture system in it?

7 A. No, there's no indication to me that it is
8 naturally fractured.

9 Q. It's not that kind of creature?

10 A. No.

11 Q. Let's turn to -- Let me ask you this: Why is it
12 your preference to place the first well as a vertical well
13 in the southwest quarter of 23, and place it along the
14 southern boundary, as you propose, as opposed to along the
15 western boundary to be in relationship with the 4 A well?

16 A. I should probably leave that question to another
17 witness. I don't think I'm qualified to --

18 Q. All right. Geologically, in terms of looking at
19 a position in the reservoir, let's turn to the -- Let's
20 turn to Exhibit 7 and let me ask you this again. All
21 right? Let's look at Exhibit 7. What are you -- I'm
22 getting ahead of you and me. When we look at 7 --

23 A. Right.

24 Q. -- what interval is being mapped on 7 that we can
25 find on 6?

1 A. Okay, Exhibit 7 is a net porosity map based on
2 porosity greater than a 14-percent cutoff of all gas-
3 productive porosity in the area, that contains both the
4 middle and the lower sandstone. And I understand your
5 question now. That location would best address both the
6 gas-productive porosity in the middle Yates sandstone, and
7 that location would also address the gas-productive
8 porosity in the lower Yates sandstone.

9 Q. Okay. When we look at the isopach, it's a net
10 map, is it not?

11 A. Yes, sir.

12 Q. And you've chosen a porosity value greater than
13 14 percent?

14 A. Yes, sir.

15 Q. Why have you chosen 14 percent?

16 A. Based on our drilling experience and our
17 production experience in the area, we have 50-plus wells
18 that pay less than 14 percent, the zones less than 14
19 percent are -- It's an economic cutoff.

20 Q. The isopach has been contoured based upon all the
21 well data available to you in this area?

22 A. Yes, sir, to the best of my knowledge and
23 ability.

24 Q. All right. The conclusion you reach with regards
25 to the isopach is what, sir?

1 A. Is that this is a -- this is a good location to
2 address both the middle and the lower. It's a relatively
3 low-risk location, I should say, based on the fact that
4 it's surrounded by gas production.

5 Q. All right. Now explain to me why you have a
6 preference for drilling the first well in the southwest
7 quarter at the location in the southern portion of the
8 spacing unit, as opposed to some other place in that
9 spacing unit.

10 A. There are surface restrictions out there that
11 keep us from drilling, active sand dunes, I believe, that
12 keep us from drilling.

13 Q. So this location is an easier location to get
14 approved for surface restriction?

15 A. I believe so, that's correct.

16 Q. All right. You have not examined the surface
17 issue, as Mr. Settle has, with regards to the availability
18 of any other location?

19 A. No, I haven't.

20 Q. All right. So you don't know if another location
21 is going to be condemned by surface or not?

22 A. I can't say at this time.

23 Q. Okay. The component of your decision was that
24 geologically, this is suitable, and if it's easier to
25 approve topographically, then there's no reason not to

1 drill this location?

2 A. That's correct.

3 Q. All right. Let's go back and have you
4 characterize some of the geologic reasons, then, in a
5 summary fashion, of why you're recommending to the Examiner
6 that he deny the Texaco Application and approve the
7 Meridian one. Give me your summary.

8 A. Okay. Based on our experience with drilling
9 vertical and horizontal wells, this is a classic vertical
10 well opportunity here. We have vertically discontinuous
11 permeability, porosity horizons in here that are not
12 naturally connected vertically. We have multiple pay
13 zones, including the middle Yates sandstone and the lower
14 Yates sandstone, that are proven gas-productive. A
15 vertical wellbore is the appropriate method of addressing
16 the pay in this area.

17 Q. As compared to a horizontal well, which will not
18 be able to do what, sir?

19 A. Pardon? I couldn't hear.

20 Q. The horizontal well would not be able to do what?

21 A. The horizontal well would not be able to
22 communicate efficiently all of the gas-productive sands on
23 the acreage.

24 Q. Even if that horizontal well has the concept of
25 two laterals, one in the Number 4 sand and the other in the

1 Number 6 sand?

2 A. You're still not addressing the lower Yates
3 sandstone, which is proven gas-productive in the area.

4 MR. KELLAHIN: I have no further questions.

5 We move the introduction of Exhibits 6 and 7.

6 MR. CARR: No objection.

7 EXAMINER CATANACH: Exhibits 6 and 7 will be
8 admitted as evidence.

9 Mr. Carr?

10 CROSS-EXAMINATION

11 BY MR. CARR:

12 Q. Mr. Szantay, if we look at Exhibit Number 7, or
13 if I look at your mapping, you do show, I believe, that
14 there are reserves under the northwest of the southwest of
15 Section --

16 A. Yes, there is.

17 Q. -- 23?

18 A. Yes, sir.

19 Q. And you have stated that you think a conventional
20 well as you propose it is the best location initially on
21 that spacing unit; is that right?

22 A. Yes, a conventional vertical well.

23 Q. It would be more effective to drain those
24 reserves if you have one well on that unit, drain the
25 reserves under the northwest of the southwest with a

1 horizontal wellbore than just by a vertical well down --
2 offsetting 7 B?

3 A. I believe previous testimony has indicated that
4 that would be one, that would be a first vertical wellbore.

5 Q. And that -- But if we have only one well, the
6 horizontal well would better access those than a vertical
7 hole; isn't that right?

8 A. I still don't believe so.

9 Q. You believe, then -- It's your testimony that the
10 well that you're proposing would better drain the reserves
11 under the northwest of the southwest than a vertical well
12 -- than a horizontal well?

13 A. I believe, from work that we've done with the
14 team, that one vertical well in the proposed location will
15 still recover more gas total than the horizontal well.

16 Q. And so your opinion is that you can better access
17 the northwest of the southwest with a vertical well where
18 you're proposing it than with the horizontal well being
19 proposed by Texaco?

20 A. No, I'm saying that we can make more money
21 drilling a vertical well at the proposed location, we can
22 get more gas out of the ground with one vertical well than
23 with a horizontal well.

24 Q. And it is your testimony, then, that one well is
25 all that would be required?

1 A. No, I'm saying that --

2 Q. Do you believe that an additional well would be
3 necessary?

4 A. After analysis of the production characteristics
5 of that first well, we would then base our decision -- we
6 would base our decision on the production characteristics
7 of that first well and see if a second well would even be
8 necessary.

9 Q. And you won't know that until you drill?

10 A. A vertical well, that's correct.

11 Q. And then if a second well is needed, that's a
12 decision that will have to be made by whoever owns the
13 property at a later date?

14 A. If they care to address it, yes, sir.

15 Q. Now, you mentioned sand dunes, but then you
16 stated that perhaps you weren't the person to really get
17 into detail on the topography of the surface. Should I ask
18 you questions about the sand dunes?

19 A. No, I have not done detailed research on the sand
20 dunes.

21 Q. There are sand dunes in the north half of the
22 spacing unit, and with you we'll leave it at that; is that
23 right?

24 A. I'm afraid we're going to have to.

25 Q. All right. Now, I think you were testifying

1 about the problems with these horizontal wells and that the
2 proposal by Texaco would basically leave certain reserves
3 in the lower Yates that would not be produced; is that
4 right?

5 A. Yes, sir.

6 Q. Now, if we go to the Texaco cross-section,
7 Exhibit Number 8 --

8 A. Yes, sir.

9 Q. -- and we look at that cross-section, the second
10 well from the left is the Meridian Rhodes "A" Number 4,
11 correct?

12 A. Yes, sir, that's correct.

13 Q. And the red in that shows the interval that was
14 perforated in that well. Does that go into those other
15 Yates reserves that you were concerned about?

16 A. Okay, let me cross-reference my cross-section.
17 The "A" 4 -- Yes, sir, and if I can reference Exhibit
18 Number 6 BR, there are detailed perforations on the Rhodes
19 "A" 4 log.

20 Q. All right, so if we look at that, that was
21 drilled in June of 1995, and you perforated that lower
22 zone, that lower Yates zone that wouldn't be accessed by
23 these horizontal wellbores?

24 A. That's correct.

25 Q. The next well on the cross-section,

1 chronologically, that you drilled would be the well on the
2 far right, the Meridian Linebery "B" Federal Number 1. The
3 completion date that's the bottom is June 12th, 1995.

4 A. Okay.

5 Q. Do you see that one?

6 A. Yes, sir, I do.

7 Q. Drilled at about the same time. That one also,
8 did it not, -- it perforated that lower Yates interval that
9 you're concerned about?

10 A. The Linebery "B" Federal Number 1.

11 Q. Yes.

12 A. Yes, sir. It is perforated.

13 Q. And that's the zone that you're concerned
14 wouldn't be accessed by a horizontal wellbore, right?

15 A. That's correct, that's one of my concerns.

16 Q. All right. And then the next well that you
17 drilled on this cross-section is the one second from the
18 right. That was drilled in February of 1996, the Rhodes
19 "B" 7; isn't that right?

20 A. That's correct.

21 Q. You didn't even drill into those, did you?

22 A. No, that well did not penetrate the lower Yates
23 sandstone.

24 Q. Isn't it true that the Linebery was so poor in
25 that, that it wasn't worth the drilling cost to go down

1 there for those reserves?

2 A. It's my understanding that there -- it's my
3 understanding that there were -- that sand is oil-
4 productive because of its location. And we do not have oil
5 rights; we have gas rights at that location.

6 Q. And what about in the Rhodes "A" Number 4?
7 Didn't that -- Doesn't that circumstance still apply there?

8 A. No, sir, the Rhodes "A" Number 4 is up in the gas
9 pool and is -- different location.

10 Q. It is downdip, however, is it not?

11 A. I don't have the structure map in front of me
12 right now, but I would guess, knowing the regional dip,
13 that, yeah, it could be on strike or slightly downdip.

14 Q. It is fair to say, however, that the very last
15 well that you've drilled in this area, you didn't even
16 attempt to reach those reserves; isn't that correct?

17 A. You could -- That's correct.

18 Q. And that there is wellbore left below the
19 horizontal, the laterals in the proposed Texaco well, that
20 later could be used to access that zone if, in fact, it was
21 deemed appropriate to do so?

22 A. Please rephrase the question.

23 Q. If you look at the schematic on the proposed
24 Texaco well, it does go deep enough to touch and to reach
25 those Yates reserves, does it not?

1 A. Yes, the pilot hole goes to 3200 feet.

2 Q. And if it was deemed advisable to go back later,
3 they would be accessible in that wellbore?

4 A. I can't address the mechanical probability of
5 success of doing that.

6 MR. CARR: All right, thank you.

7 EXAMINATION

8 BY EXAMINER CATANACH:

9 Q. The reason you didn't drill down into the lower
10 Yates in the Rhodes "B" 7 is because that's an oil-
11 producing zone in that --

12 A. That's my understanding, sir, yes.

13 Q. Within the Rhodes "A" Number 4, do you have any
14 idea what percentage of reserves that the lower Yates is
15 contributing to the production in that wellbore?

16 A. I'm afraid I can't address that subject; that's
17 not my area of expertise. I don't know.

18 EXAMINER CATANACH: I have nothing further.

19 MR. CARR: I have a follow-up question.

20 MR. KELLAHIN: Go ahead, Mr. Carr.

21 FURTHER EXAMINATION

22 BY MR. CARR:

23 Q. My follow-up question is, the producing interval
24 in the Rhodes "A" 4 -- I mean, you're producing these lower
25 -- these reserves -- this interval in the lower Yates in

1 the Rhodes "A" 4; is that not correct?

2 A. Yes, sir, that's correct.

3 Q. And isn't that downstructure, isn't that lower
4 than the "B" 7, that interval in the "B" 7, structurally
5 lower?

6 A. The top is slightly lower by maybe ten feet, five
7 feet. I don't know where the base of it is. We didn't
8 penetrate it in the "B" 7, but structurally it may be a
9 little downdip.

10 MR. CARR: That's all.

11 FURTHER EXAMINATION

12 BY MR. KELLAHIN:

13 Q. Well, let's straighten this up here. Mr.
14 Szantay, let's look at the "B" 7. The lower Yates in the
15 "B" 7 --

16 A. Yes, sir.

17 Q. -- was not drilled and not completed because look
18 where it is in relation to the Texaco water injection well.
19 They're putting water in the lower Yates, aren't they?

20 A. Okay, yes, that is correct.

21 Q. No point in drilling at that location for gas
22 when it's been waterflooded by Texaco?

23 A. It's an active waterflood that we don't have the
24 rights to.

25 Q. That's right, it's in the oil portion?

1 A. Right, absolutely.

2 Q. All right. So that doesn't tell us you're not
3 going to have gas up in the southwest quarter of 23 when
4 you move into the gas pool?

5 A. It doesn't address that, you are correct.

6 MR. KELLAHIN: All right, no further questions.

7 FURTHER EXAMINATION

8 BY MR. CARR:

9 Q. Did you know that before Mr. Kellahin asked you
10 that question?

11 A. I didn't have that on the tip of my tongue.

12 MR. CARR: All right, thank you very much.

13 EXAMINER CATANACH: The witness may be excused.

14 CHRISTOPHER J. SETTLE,

15 the witness herein, after having been first duly sworn upon
16 his oath, was examined and testified as follows:

17 DIRECT EXAMINATION

18 BY MR. KELLAHIN:

19 Q. Sir, would you please state your name and
20 occupation?

21 A. Christopher Joseph Settle. I am a project
22 engineer for Burlington Resources Oil and Gas.

23 Q. Mr. Settle, on prior occasions have you testified
24 before the Division as a reservoir engineer?

25 A. Yes, sir, I have.

1 Q. And you're part of the Burlington technical team
2 that has responsibility for the Rhodes Oil Pool and the
3 Rhodes Gas Pool area?

4 A. That's correct.

5 Q. Pursuant to your responsibilities and employment,
6 have you made a reservoir study of the issue of the
7 practicality of a horizontal well versus a vertical well in
8 this area?

9 A. Yes, sir, I have.

10 MR. KELLAHIN: We tender Mr. Settle as an expert
11 reservoir engineer.

12 EXAMINER CATANACH: He is so qualified.

13 Q. (By Mr. Kellahin) Let's start at the end. Let's
14 get right down to the bottom line. Let's talk about the
15 idea of a high-angle horizontal multi-lateral project,
16 versus the conventional straight-up vertical well that you
17 fracture-stimulate. What's your preference?

18 A. We prefer the drilling, completion, production of
19 a vertical well over a horizontal well because of the
20 discontinuous -- vertically discontinuous nature of the
21 sands and the amount of contact with the pay that you have
22 to the wellbore.

23 Q. Have you analyzed the cost components of those
24 two methods of accessing the gas and compared it to what in
25 your opinion is the recoverable gas to be achieved by each

1 process?

2 A. Yes, sir, I have.

3 Q. And what conclusion have you reached?

4 A. That we can develop more reserves with a vertical
5 wellbore than a horizontal wellbore, for less money.

6 Q. You heard me ask Mr. Wolle the questions I asked
7 him about his reservoir work, and he told me he had not
8 done certain calculations and had no opinion.

9 A. Yes, sir.

10 Q. Have you done that work and do you have those
11 opinions?

12 A. Yes, sir, I have, and I do.

13 Q. All right. Let's turn to Exhibit 8 and have you
14 identify and describe the first display.

15 Q. Exhibit 8 is our determination of what the EUR is
16 for the Rhodes B Federal Number 7 that's located in Section
17 26 of the area.

18 Q. This is the newest of the gas wells in the Rhodes
19 Gas Pool?

20 A. That's correct. It was completed in February of
21 1996.

22 Q. All right. So you have some data and some
23 production information from that well?

24 A. Yes, sir, we do.

25 Q. As part of your analysis, did you make

1 comparisons to the production curves for the Rhodes "A" 3
2 and the Rhodes "A" 4?

3 A. Yes, sir, I did.

4 Q. And based upon that methodology, were you able to
5 forecast within reasonable probability what you expect to
6 be the recovery of gas from the Rhodes 7 B?

7 A. Yes, sir, I did. It was 585 million cubic feet
8 of gas.

9 Q. And to do so, have you applied standard,
10 conventional reservoir methodology, formulas and techniques
11 to come to this conclusion?

12 A. Yes, sir.

13 Q. All right, let's turn beyond the summary sheet,
14 Exhibit 8, and look at the production curves, starting with
15 Exhibit 9. Which one are we looking at here?

16 A. We're looking at Exhibit 9, and it's a production
17 decline model of the Rhodes "A" 3 well, which is in the
18 northeast corner of Section 22, and we have three years of
19 production history on that well. Its current production is
20 159 MCF a day, and we forecasted an EUR of 780 million
21 cubic feet of gas, using the hyperbolic model.

22 Q. Okay. That well is completed and producing out
23 of what interval in the gas pool?

24 A. The middle and lower interval, I believe that's
25 correct.

1 Q. All right. So we've got the middle and the lower
2 in that one?

3 A. Yes, sir.

4 Q. All right. Let's turn to the Exhibit 10. That's
5 the Rhodes "A" 4?

6 A. Yes, sir, that's immediately south of the Rhodes
7 "A" 3. It's the direct western offset of the proposed
8 proration unit. It's been on production for approximately
9 a year and a half. Using the same hyperbolic model of the
10 production history, we determined the EUR to be 645 million
11 cubic feet for that well.

12 Q. Okay.

13 A. And its current production is down to 337 MCF a
14 day.

15 Q. All right, let's turn to Exhibit 11.

16 A. Exhibit 11 is a production decline -- production
17 curve of the Rhodes "B" Federal 7, which is the well just
18 south of the proration unit that we're looking at. It's
19 basically been flat for a period up until about September
20 of this year, maybe August, and there was an allowable on
21 this well, and we were also trying to not draw down the
22 well too much to make sure we didn't have increased sand
23 production.

24 Q. Now there's a reason for that, is there not?
25 This is a gas well in the oil pool?

1 A. That's correct. There is an allowable of 800 MCF
2 a day, as compared to the unrestricted allowable in the gas
3 pool.

4 Q. All right, and as we go into the southwest
5 quarter of 23, we're up under the gas pool rules?

6 A. That's correct.

7 Q. And so a well there in a standard location is not
8 going to have an allowable limit other than capacity?

9 A. That's correct.

10 Q. Okay. What have you concluded about the
11 probability of ultimate gas recovery, then, out of the
12 Rhodes 7 B?

13 A. What I did was, once the well started exhibiting
14 a production decline, I used the analogies of the Rhodes
15 "A" 3 and the "A" 4 to best fit the decline data that we
16 have on the well and determined an EUR to be 585 million
17 cubic feet.

18 Q. Let's talk for a moment while we're looking at
19 the Rhodes 7 B. That well -- Burlington intentionally did
20 not complete this well in the lower Yates, did it?

21 A. That's correct.

22 Q. And why not?

23 A. Because of the injector well that Texaco operates
24 that is injecting water into the lower Yates as a
25 continuation of the waterflood of the lower Yates interval

1 for oil production.

2 Q. All right. Whatever reserves are in the lower
3 Yates at that location are going to be compromised by the
4 water injection?

5 A. That's correct.

6 Q. Let's turn to Exhibit 12. You now have, in your
7 opinion, the reasonable probability of an EUR based upon
8 the Rhodes 7 B. Have you then applied conventional
9 engineering parameters to come up with an area of drainage
10 for that well?

11 A. Yes, sir, I have. Using the EUR, the reservoir
12 pressure of approximately 668 p.s.i. and an average pay of
13 81 feet, which includes all of the pay that's been
14 perforated, there's about 14-percent porosity, that pay
15 across the 81 feet averages 20-percent porosity, water
16 saturation is 22 percent, and from that data I concluded
17 that the drainage area of the well is 25 acres.

18 Q. All right. Mr. Carr expressed concern earlier
19 this morning about having the southwest quarter subject to
20 potential drainage by offsetting wells. Would that
21 drainage come from the 7 B well?

22 A. Doesn't appear that way at this time, sir.

23 Q. Do you see any time-of-the-essence arguments, any
24 urgency to get this wellbore in the ground, then, in order
25 to meet offset drainage?

1 A. Not for this well, nor the Rhodes "A" 4.

2 Q. In your opinion, then, as an engineer, the
3 southwest quarter of 23 is currently not exposed to
4 drainage?

5 A. That's correct.

6 Q. Let's turn to the next exhibit, Exhibit 13.

7 Identify and describe what we're looking at here.

8 A. Exhibit 13 is a determination of what a vertical
9 well would recover at our proposed location in the southern
10 part of the proration unit.

11 What we determine is that we have a drainage area
12 that we're affecting in a reservoir, with the permeability
13 characteristics of the sands, that we're going to drain 25
14 acres. And using that data in conjunction with the average
15 pay map that Adam provided me, I was able to determine that
16 the EUR of a vertical well in that location should be
17 approximately 710 million cubic feet, which is greater,
18 because of the additional pay, than the EUR of the Rhodes
19 "B" 7.

20 Q. So at the Rhodes 23 location, in the southwest of
21 23, your engineering conclusion is that that well will
22 ultimately recover 710,000 MCF?

23 A. That's correct.

24 Q. All right.

25 A. At an investment of \$235,000.

1 Q. So where did the \$235,000 come from?

2 A. \$235,000 is a cost estimate generated for a
3 vertical well.

4 Q. And what is included -- That's taken off the AFE?

5 A. Yes, sir.

6 Q. And that AFE includes costs of stimulation and
7 doing the type of conventional vertical well that's been
8 drilled in this pool?

9 A. That's correct, sir.

10 Q. All right. That would be a profitable well?

11 A. That would be a very profitable well.

12 Q. All right. Let's turn to Exhibit 14. In order
13 to make a comparison and a judgment, ultimately, about
14 which wellbore plan to execute, you have to make a
15 comparison with regards to what would happen with the
16 horizontal well, right?

17 A. Yes, sir.

18 Q. Let's look at 14 and have you describe for us how
19 you've gone through the analysis and what conclusion you've
20 reached.

21 A. What I was trying to determine was what was the
22 drainage area going to be for a horizontal well. What I
23 did first was evaluate the Rhodes "B" Federal Number 7.
24 And what we're looking at, at the middle part of that page,
25 is a cartoon plan view of the wellbore and how it affects

1 the reservoir around it.

2 We determine -- We know the drainage area is 25
3 acres from our prior work, and we determined that the
4 hydraulic fracture length is 750 feet from using a
5 hydraulic-fracture-stimulation simulator.

6 Q. Let me interrupt you. Why have you chosen to
7 give the horizontal well the benefit of a drainage radius
8 based upon a hydraulic frac length achieved by a process
9 that's not going to be applied to the horizontal well?

10 A. What I'm trying to do is determine the effective
11 distance from the wellbore that constitutes the 25 acres,
12 and so every point along that fracture and in that
13 wellbore, I'm trying to determine how much of the reservoir
14 is affected, and then I can apply that to the length of the
15 horizontal well.

16 Q. Well, you've given the horizontal well a bonus?

17 A. At this point, on this page, yes, sir.

18 Q. Okay, continue.

19 A. What I calculated using two radial drainage areas
20 on each end of the hydraulic fracture and a rectangular
21 linear flow area, along the hydraulic fracture, was an
22 affected area of 407 foot from the wellbore and the
23 associated fracture system.

24 If I apply for the Rhodes 23 Federal Number 1,
25 the horizontal well, the horizontal lateral length that I

1 used was 1380 feet, and if the radius of the drainage area
2 that we're going to affect in the reservoir is 407 foot,
3 the our drainage area is 38 acres.

4 Q. All right, so you have given the horizontal well
5 every possibility of a bonus, and by that method you can
6 only increase the drainage area over the vertical well from
7 25 acres to 38 acres.

8 A. That's correct, sir.

9 Q. So you have added eight acres [*sic*], but you've
10 doubled the cost?

11 A. A little more than eight acres, but yes, sir,
12 doubled the cost.

13 Q. All right. Let's set that aside a moment and,
14 separate and aside from cost, if we were willing to spend
15 all the money that Texaco wants to spend and some more, is
16 this still a good idea to drill a horizontal well here?

17 A. No, sir.

18 Q. We're not going to access any more of the
19 reservoir than we would with a vertical well?

20 A. That's correct, and we will go into that in more
21 detail on Exhibit 15.

22 Q. Let's do that now.

23 A. What we have in Exhibit 15 at the top is a model,
24 a cartoon of a hydraulically fractured wellbore. This time
25 we're looking at it from the side. And what we've done is,

1 we've got the interlayered sand-dolomite packages, and we
2 know that we have perforated each of those sand packages.
3 We have not ignored any of the pay.

4 And once we've hydraulically fractured it, we've
5 created two fracture lengths away from the wellbore that
6 contact each sand package the entire length of the
7 hydraulic fracture. So the entire length of the fracture
8 in that sand, we're communicated with the wellbore.

9 Now, if I take that and I move down to the bottom
10 of the page and look at the horizontal wellbore -- and for
11 the purposes of the cartoon I've left that length the same
12 at 750 feet -- and you place two horizontal wells at an
13 angle through the pays, the interlayered pays, what we came
14 up with was a 40-percent vertical contact.

15 So for instance, if you look at the top sand and
16 you look at the length of the horizontal well that's open
17 and exposed to that sand, it's 40 percent of the entire
18 lateral length.

19 Now, we did not understand what Sand 6 and what
20 Sand 4 were, and so what I did was, I sat down and drew
21 scale drawings of each of the package intervals in each of
22 the lateral lengths, and I drew a multitude of wellbore
23 paths that we could go through the pay, and the highest
24 that I could come up with was 40 percent. There were
25 numbers as low as 20 percent, depending on how you drilled

1 through the vertically discontinuous sand packages.

2 Q. Mathematically, then, you're drawing schematics
3 that -- every possible, conceivable way to drill the
4 horizontal well, whether it's 88 degrees or some other
5 difference, to get this thing through the reservoir, and
6 the greatest vertical contact that you can achieve by any
7 of the calculations is only 40 percent?

8 A. That was the most optimistic.

9 Q. All right. Now, let's go back and put this in
10 real-world terms and put some prices on it.

11 If you'll turn to 16, let's compare the EUR that
12 you're going to get with the horizontal well using the 38
13 acres of drainage, and put a price on it and see what
14 happens.

15 A. If we use the radius of the drainage area of the
16 407 feet that we calculated from our model, the fracture
17 stimulation system, in their lateral length of 1380 feet,
18 average pay is greater at 104 feet along the path of
19 lateral, and apply our individual sand contact of 40
20 percent, then we come up with an EUR of 450 million cubic
21 feet of reserves, and for an investment -- and that's a
22 typo on your page, I apologize for that -- of \$505,000,
23 which was the \$485,000 plus the \$20,000 additional
24 facilities that weren't included in Texaco's AFE.

25 The 40 percent is very important, because the

1 dolomites, or in shale strangers between the sands are
2 impermeable, so there's not going to be a vertical path up
3 into the wellbore once you exit that sand.

4 And even within the sand, the vertical-to-
5 horizontal permeability relationship tells you that if
6 you're at the base of that sand with a horizontal well and
7 you're trying to flow gas into that wellbore vertically
8 down into it, your flow rates are going to be lower because
9 your permeability is lower, because we're only looking at
10 reserves, and we're not looking at production. It's really
11 not included in our analysis, but it's something that has
12 to be addressed in the performance of the well.

13 Q. When we make the direct comparison, then, let's
14 compare Exhibit 13 to 16. On a vertical well, the
15 investment is \$235,000 for a return of gas of 710 MMCF?

16 A. That's correct, and as I stated, that's a very
17 attractive project.

18 Q. And if we turn to the horizontal comparison for
19 an investment of half a million dollars, your forecast of
20 ultimate gas recovery is only 450,000 MCF?

21 A. That's correct, and that is an uneconomic
22 project.

23 Q. If the spacing unit is not being exposed to
24 drainage -- And by your calculation you have come to that
25 solution, is that not true?

1 A. That's correct.

2 Q. You drill the first well, and if it only drains
3 25 acres then you still have time an opportunity to have an
4 infill well to drain the rest of your spacing unit, and you
5 can still do so for the -- less cost than it is to drill a
6 single horizontal well?

7 A. That's correct.

8 Q. And there is no urgency to drill the second well,
9 because there's no competition for that gas from this
10 spacing unit?

11 A. Not according to my calculations.

12 Q. Okay. Let's address the topographic question.
13 Have you satisfied yourself that Burlington and Texaco --
14 we need the same surface location for the first well --
15 that that's an available topographic surface location?

16 A. Yes, sir, it is.

17 Q. This is a federal lease area, the BLM manages the
18 surface, I guess. It's a federal lease effort. Anyway --
19 You don't know?

20 A. I don't know.

21 Q. Okay. You are aware that there are sand dunes on
22 the surface?

23 A. Yes, sir, I am.

24 Q. And is there an individual at Burlington that
25 manages topographic issues with regards to the BLM?

1 A. Yes, sir, there is.

2 Q. Have you inquired and have you been advised as to
3 whether or not there is an available surface location in
4 the northern portion of the spacing unit that could be
5 utilized in the future in order to drill a well to access
6 those reserves if they're not drained by the first well?

7 A. Yes, sir, I have.

8 Q. And what conclusion have you reached?

9 A. The conclusion was that we could locate a
10 wellbore in the northern half, but it would have to be --
11 it would have to be a deviated wellbore, but the total
12 deviation of wellbore would be less than 30 percent -- 30
13 degrees, excuse me.

14 Q. Based upon your study, is it necessary to have
15 this high-angle horizontal well that Texaco proposes in
16 order to access the reserves in the spacing unit?

17 A. No, sir.

18 Q. Let's turn to the summary sheet. Let's look at
19 Exhibit 17. These are your conclusions?

20 A. Yes, sir, they are.

21 Q. Have you shared these conclusions with your other
22 technical members on your team?

23 A. Yes, sir, I have.

24 Q. And do they also share this opinion with you?

25 A. Yes, sir, they do.

1 Q. Let's go through the summary and have you
2 describe your concerns and your opinion.

3 A. Burlington Resources is a leader in horizontal
4 technology, and we've done work horizontally across the
5 nation. Our problem is, we think this is a gross
6 misapplication of the technology. We believe that it
7 produces reserve development waste, it's obviously a waste
8 of money to go to such an extreme, complex wellbore in this
9 type of environment. It's a misapplication.

10 The -- in addition, the completion -- The
11 probability of a successful completion is going to be lower
12 for the complex multilateral wellbore that they're
13 proposing, as opposed to the conventional hydraulically
14 fractured wellbore that we are proposing. There have been
15 great improvements in the technology, but it's still
16 inherently more risky than what we're proposing.

17 The other issue is, how do you operate the
18 wellbore? The wells in the area have scale problems, they
19 do have some sand problems occasionally, and what we're
20 going to have here is two open-hole wellbores that are
21 cutting across dolomite sand interfaces with possible
22 debris, we're going to have scale precipitation. If it
23 occurs out in the horizontal part of the wellbore, it's
24 going to be more difficult to clean that up and keep the
25 wellbore open for production than it will be for vertical

1 completion.

2 In addition, the wells in the area do make some
3 water. And this is a very low pressure reservoir, you've
4 got a pipeline pressure of less than 25 p.s.i. Reservoir
5 pressure is in the -- just over 650 p.s.i.

6 A little bit of water will, without artificial
7 lift, limit your recovery of the reserves from the well?
8 And their proposal has two -- well, excuse me, a single
9 kickoff point, and there's about a 100-foot radius, looking
10 at their exhibit, before they're going to enter the
11 wellbore. So they're going to enter a wellbore 100 foot
12 higher than where they're in the sand.

13 And so if they're using the bottom cased interval
14 of the wellbore as a sump to pump out of, as opposed to
15 being able to lower their pump, they're going to have 100
16 foot of water head if that wellbore does fill up with
17 water. So the drawdown they're going to get for that
18 reservoir is going to be lower.

19 Now, I didn't take that into account in my work.
20 I didn't know the radius of the wellbore. I thought it
21 might be smaller, larger, and didn't put the numbers to
22 that. But there's an additional 45 p.s.i. of drawdown
23 you're not going to get if that wellbore does fill with
24 water. And there is a history on a lot of wells in the
25 area that do make some water, and they're very difficult to

1 operate vertically and are going to provide even more
2 difficulty and expense operating horizontally.

3 Q. The wellbore instability, what are you talking
4 about there?

5 A. If they were staying in one sand package, then --
6 and there's no interfaces between going in and out of these
7 sand packages -- You know, in a hard rock area, I would
8 think that maybe those issues are lower. But because
9 they're going in and out of sand, dolomites and shales,
10 that the interface, there could be potential problems of
11 wellbore stability and sloughing into the well.

12 Q. What's your recommendation?

13 A. My recommendation is, we drill vertically.
14 There's no offset drainage that we've calculated. We'll be
15 able to address the issue of a second wellbore, if
16 necessary, in the future, and there's no reason to hurry up
17 and make a bad decision.

18 MR. KELLAHIN: That concludes my examination of
19 Mr. Settle.

20 We move the introduction of his Exhibits 8
21 through 17.

22 MR. CARR: No objection.

23 EXAMINER CATANACH: Exhibits 8 through 17 will be
24 admitted as evidence.

25 Mr. Carr?

CROSS-EXAMINATION

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BY MR. CARR:

Q. Mr. Settle, you've testified about the "B" 7 well as your Exhibit Number 11. I have a couple of general questions. You've talked about that well being allowable-restricted because of the pool rules for the oil pool?

A. That's correct.

Q. And the allowable is what, 800 --

A. That's correct.

Q. -- 800 barrels a day, is that what it is? 800 MCF a day?

A. 800 MCF a day.

Q. And a well offsetting it to the north would be unrestricted. That's no concern on our part, is it, whether or not the well is unrestricted? You don't see any drainage anyway, do you?

A. No, sir.

Q. What would that "B" 7 well make if it was not allowable-restricted? Do you know?

A. Currently?

A. Yeah.

A. It is not restricted currently. It is down below 500 MCF a day.

MR. CARR: Okay.

MR. KELLAHIN: I'm sorry, I didn't hear your

1 answer.

2 THE WITNESS: It is not restricted currently.
3 The wellbore is below 500 MCF a day.

4 Q. (By Mr. Carr) And so same rules that permit the
5 oil wells to be 330 from the lease line and north of it,
6 gas well 660; isn't that right?

7 So that's just a fact of our lives. I mean,
8 we're not -- you're not making an issue about allowable
9 restriction; I'm asking you that.

10 A. That's correct, I'm not.

11 Q. All right. When we look at that lower zone that
12 you didn't complete in, in the "B" 7, you said that was
13 because there is an offsetting waterflood operation by
14 Texaco.

15 Were you involved with the drilling -- I think
16 it's the Linebery well that was drilled prior to that time,
17 that was completed down in that interval?

18 A. No, sir, I wasn't.

19 Q. Have you any -- Do you know that it was completed
20 down in that interval?

21 A. Yes, sir.

22 Q. That Linebery well was a very poor well, was it
23 not? Is it not?

24 A. It is a poor well.

25 Q. You don't have any idea of what is actually

1 coming out of that lower zone, do you? There's no way to
2 know?

3 A. Not --

4 Q. -- in this poorer well?

5 A. That's correct.

6 Q. If we look at your schematic drawing, Exhibit
7 Number 14, the top part of that exhibit is what you're
8 estimating to be the number of acres drained by a vertical
9 well; is that right?

10 A. That's correct.

11 Q. And that's 25 acres?

12 A. Yes, sir.

13 Q. If we go down to the bottom portion of that
14 exhibit, that's what you are estimating would be drained,
15 38 acres, with the proposed horizontal well; is that right?

16 A. That's correct.

17 Q. And in doing this, what you're looking at is only
18 the sixth sand, are you not?

19 A. I am looking at all of the sands as mapped by my
20 geologist.

21 Q. Have you also factored into this exhibit the 500-
22 foot horizontal lateral for the number 4 sand?

23 A. The -- I guess I'm confused by your question.

24 Q. What -- if I see this -- the bottom portion of
25 this exhibit, you're showing a horizontal lateral of 1380

1 feet; is that right?

2 A. That's correct.

3 Q. And what we've got here is that you're draining
4 38 acres with that, all right?

5 A. Correct.

6 Q. Now, when you're looking at this bottom part of
7 the exhibit, you're focusing just on what you're doing in
8 the sixth sand, you're assuming there will be less drainage
9 in the fourth sand; isn't that right?

10 A. No, I'm not. I'm assuming that --

11 Q. How did you factor in the fourth sand?

12 A. My analysis is based on the total package of all
13 productive sands, and so it includes --

14 Q. All right.

15 A. -- the 4 and the 6 sand, plus sands that you guys
16 are not considering gas-productive.

17 Q. So you have in this calculation rolled both
18 together?

19 A. That's correct.

20 Q. Okay. If we then go to your Exhibit Number 16,
21 where you're looking at the EUR for the Rhodes 23 Number
22 1 --

23 A. Yes, sir.

24 Q. -- and to get this 450 MMCF, are you again
25 looking at the total package?

1 A. Yes, sir, I am.

2 Q. And when you say 40-percent individual sand
3 contact, you're assuming that when you look at the
4 horizontal portion of the wellbore in both the number 4
5 zone and the number 6 together, that they'll only be in
6 contact with the sand 40 percent of the time? Is that what
7 you're saying?

8 A. When you look at them together, they can only be
9 in each individual sand package, and I'm defining a sand
10 package smaller than just the 4 and the 6. The 6 is
11 divided into many intervals on the cross-section that you
12 guys submitted.

13 Q. And so you're looking at smaller intervals than
14 what Mr. Sadler was looking at?

15 A. I'm looking at all of the intervals.

16 Q. And when we look at what Mr. Sadler had
17 projected, the wellbore would be in what he shaded green on
18 his cross-section as the sand throughout most of the
19 interval; isn't that right?

20 A. Okay, the exhibits and the pay that are on your
21 exhibits, for instance, for the Rhodes "B" 7, are 75 feet.
22 And what we're looking at there is -- Oh, I'm sorry, I'm
23 looking at the wrong map. I am looking at a greater
24 interval of the sand packages than the exhibits that were
25 submitted by Texaco.

1 Q. You're looking at a greater interval and then
2 you're breaking out individual sand packages within that
3 interval, isn't that right?

4 A. That's correct, and what I'm saying is, you wind
5 up with in a horizontal well, as you go in and out of each
6 of those intervals, you wind up with an ellipse of
7 production that is 40 percent of the entire wellbore
8 length, and that ellipse moves down as you enter each sand
9 package, going further and further along the lateral.

10 Q. And are you saying that only 40 percent of that
11 wellbore is actually going to be in contact with the sand
12 packages?

13 A. I'm saying that 40 percent of the wellbore will
14 be in contact -- I'm saying that the wellbore will only be
15 in contact with that sand package 40 percent of the entire
16 length of the wellbore.

17 Q. And if it was 50 percent, then your EUR would go
18 up?

19 A. That's correct.

20 Q. And what you have done is characterized this as a
21 number of individual sand lenses, where Mr. Sadler has
22 looked at a larger interval and shaded that green on his
23 cross-section? He's looking at larger --

24 A. That's correct.

25 Q. And so if we take his interpretation, and the

1 fact that that sand is there, you may have more than 40-
2 percent contact; isn't that possible? I mean, we're --

3 A. Well --

4 Q. -- looking at just two interpretations, aren't
5 we?

6 A. Correct, but the two interpretations are, one,
7 that you stay in one sand package, but you're ignoring the
8 rest of the pay when you do that you do that.

9 The other interpretation is, you cut across the
10 multiple sand packages, and when you do that you're only
11 contacting the reservoir 40 percent of the time.

12 Q. And if you were drilling a horizontal well, would
13 you recommend cutting across all the sand packages to get
14 all of them tied in, or would you stay in the sand?

15 A. No matter which technique that I drew up on a
16 scale model, I never came out with over 45 -- 40 percent of
17 the total sand package -- or excuse me, for each individual
18 sand package.

19 MR. CARR: That's all I have.

20 EXAMINATION

21 BY EXAMINER CATANACH:

22 Q. Mr. Settle, did you calculate a drainage area for
23 the "A" Number 4?

24 A. Yes, I did.

25 Q. What was that?

1 A. It was 26 acres.

2 Q. Is it typical for these wells in this area to
3 exhibit small drainage areas such as you've calculated for
4 the "A" 4 and the "B" 7?

5 A. I have not calculated drainage area of -- for an
6 area outside of this area of interest, so I can't answer
7 that.

8 Q. Well, based upon what you know of the drainage
9 area of the "B" 7 and the "A" 4, do you believe that a
10 single well would effectively drain the southwest quarter,
11 a vertical well?

12 A. I think it more effectively drains it than a
13 horizontal well.

14 Q. Do you think it effectively drains the southwest
15 quarter?

16 A. I think an evaluation would have to be done with
17 additional data from the first well to make that
18 determination.

19 Q. Well, do you have any indication that the
20 drainage area would increase in that vertical well, as
21 opposed to the offset wells?

22 A. No, sir.

23 Q. Do you know what the -- You said that if you
24 drilled a well in the north half of the southwest quarter,
25 it would have to be deviated?

1 A. Yes, sir, it would.

2 Q. Do you know what the cost of a deviated wellbore
3 would be in the north -- in that --

4 A. It was an additional \$50,000 over the vertical
5 wellbore.

6 EXAMINER CATANACH: I have nothing further of the
7 witness.

8 Anything further?

9 MR. KELLAHIN: That concludes my presentation of
10 Mr. Settle.

11 I have the certificate of notice buried here
12 somewhere.

13 I've marked the certificate of notification for
14 hearing, Mr. Examiner, as Burlington Exhibit A. I would
15 ask that you introduce it at this time.

16 EXAMINER CATANACH: Exhibit A will be entered as
17 evidence in this case.

18 May I suggest we dispense with closing statements
19 and submit rough draft orders in this case?

20 MR. KELLAHIN: I understand you're pressed for
21 time, and we would be more than happy to submit our draft
22 orders to you, Mr. Examiner.

23 EXAMINER CATANACH: Any preference as to a time
24 frame for that, Mr. Kellahin?

25 MR. KELLAHIN: I understand that you'll be out of

1 the office for a while on or after the first of the year.

2 MR. CARR: If we can't have an order by
3 Wednesday...

4 EXAMINER CATANACH: Good luck.

5 MR. CARR: I don't see any reason to make
6 everybody work between now and Christmas and New Year's
7 when you're not going to be here.

8 Could we contact you and just agree on a date
9 after we see what everyone's schedule is and get it in as
10 early as possible to you in January?

11 EXAMINER CATANACH: Sure, I mean, I'll be back
12 the 2nd. Give me a call and --

13 MR. KELLAHIN: Let Bill and I talk to it, and
14 we'll get it to you as soon as we can.

15 MR. CARR: We'll file on the same date, and we'll
16 do it just as quickly as we can get it to you.

17 EXAMINER CATANACH: There's going to be a backlog
18 on cases at that point anyway, surprisingly enough, so I
19 don't know what the schedule -- my schedule -- is going to
20 be, so...

21 MR. KELLAHIN: So you don't want to hear any
22 fishing stories about Mr. Carr?

23 MR. CARR: I could tell you fishing stories about
24 Tom, but he never catches a fish.

25 EXAMINER CATANACH: Okay, is there anything

1 further, gentlemen?

2 There being nothing further, we will take Case
3 11,678 and 11,656 under advisement.

4 (Thereupon, these proceedings were concluded at
5 11:39 a.m.)

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CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
 COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL December 31st, 1996.



STEVEN T. BRENNER
 CCR No. 7

My commission expires: October 14, 1998

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 11656, 11678 heard by me on December 19 1996.

David R. Leland, Examiner
 Oil Conservation Division

STEVEN T. BRENNER, CCR
 (505) 989-9317