

NEW MEXICO OIL CONSERVATION DIVISION

EXAMINER HEARINGSANTA FE, NEW MEXICOHearing Date DECEMBER 17, 1998 Time 8:15 A.M.

NAME	REPRESENTING	LOCATION
William F. Day Steve Troutman Jim Bueh GORDON HAMMOND Wendy Ryan GARY BURCH MARK VOZAR BARRY VOIGT George COV G. D. Simon	Samuel, Jim, Tony & Gordon Chevron SF UTE Mtn. UTE TRIBE Cross Timbers Oil Company Ute Mtn Ute Tribe	Santa Fe midland SF TOWSON, CO, FORT WORTH, TX Alb. N.M.

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 CROSS TIMBERS OIL COMPANY) CASE NOS. 12,098
FOR AN UNORTHODOX GAS WELL LOCATION AND)
SIMULTANEOUS DEDICATION, SAN JUAN COUNTY,)
NEW MEXICO)

APPLICATION OF CROSS TIMBERS OIL COMPANY) 12,099
FOR AN UNORTHODOX GAS WELL LOCATION AND)
SIMULTANEOUS DEDICATION, SAN JUAN COUNTY,)
NEW MEXICO)

APPLICATION OF CROSS TIMBERS OIL COMPANY) and 12,100
FOR A NONSTANDARD SUBSURFACE GAS WELL)
LOCATION/PRODUCING AREA AND FOR)
SIMULTANEOUS DEDICATION, SAN JUAN COUNTY,)
NEW MEXICO)

(Consolidated)

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OIL CONSERVATION DIV.

REPORTER'S TRANSCRIPT OF PROCEEDINGS
EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

ORIGINAL

December 17th, 1998
Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, December 17th, 1998, 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.

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December 17th, 1998
 Examiner Hearing
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A P P E A R A N C E S

FOR THE DIVISION:

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FOR THE APPLICANT:

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Santa Fe, New Mexico 87504

FOR THE UTE MOUNTAIN UTE TRIBE:

G.D. SIMON
Petroleum Engineering Consultant
Data Consultants Incorporated
P.O. Box 14749
Albuquerque, NM 87191

ALSO PRESENT:

GORDON HAMMOND
Energy Director
Ute Mountain Ute Tribe

* * *

1 WHEREUPON, the following proceedings were had at
2 8:45 a.m.:

3 EXAMINER CATANACH: At this time we'll call Case
4 Number 12,098.

5 MR. CARROLL: Application of Cross Timbers Oil
6 Company for an unorthodox gas well location and
7 simultaneous dedication, San Juan County, New Mexico.

8 EXAMINER CATANACH: Call for appearances in this
9 case.

10 MR. BRUCE: Mr. Examiner, Jim Bruce of Santa Fe,
11 representing the Applicant. I have three, and maybe four,
12 witnesses to be sworn.

13 I would ask at this time that this case be
14 combined with the next two cases and that they all be heard
15 together.

16 EXAMINER CATANACH: At this time we'll call Case
17 12,099.

18 MR. CARROLL: Application of Cross Timbers Oil
19 Company for an unorthodox gas well location and
20 simultaneous dedication, San Juan County, New Mexico.

21 EXAMINER CATANACH: And Case 12,100.

22 MR. CARROLL: Application of Cross Timbers Oil
23 Company for a nonstandard subsurface gas well
24 location/producing area and for simultaneous dedication,
25 San Juan County, New Mexico.

1 EXAMINER CATANACH: Call for additional
2 appearances in any one of these cases.

3 MR. SIMON: Mr. Examiner, my name is Jerry Simon.
4 I'm a petroleum consultant to the Ute Mountain Ute Tribe.
5 Also appearing here with me is Mr. Gordon Hammond, the new
6 energy director for the Ute Mountain Ute Tribe.

7 Also, we'd like to apologize to Cross Timbers and
8 to yourselves that one of our other representatives, a
9 trustee for the Tribe, for some reason or another, just
10 couldn't appear here today. And we would like an
11 opportunity to question the witnesses, if we might.

12 And I also was wondering if it would not be a lot
13 easier to follow if these cases were tried individually
14 instead of combined. We have very little knowledge -- we
15 just received exhibits this morning -- and it might be a
16 lot easier for us to follow if they were put on separately.

17 MR. BRUCE: Mr. Examiner, if I may. When it
18 comes -- the land matters are all pretty similar, and we
19 jut have one land plat for the land matters.

20 As to the individual cases, we will discuss
21 geologically each well separately, so...

22 MR. SIMON: That would be fair enough, I think.
23 We'd appreciate that very much, sir.

24 EXAMINER CATANACH: Okay.

25 MR. CARROLL: Mr. Simon, would you prefer sitting

1 at the table to look at the maps?

2 EXAMINER CATANACH: Feel free to sit up here, Mr.
3 Simon.

4 MR. SIMON: Okay. Do we have a chair for Mr. --

5 MR. BRUCE: Right here.

6 MR. CARROLL: Mr. Bruce, did you receive a copy
7 of this December 16th letter from the BLM?

8 MR. BRUCE: No, I didn't.

9 MR. CARROLL: Maybe you'd like to take a look at
10 it before we begin.

11 Mr. Simon, I take it you've got a copy of the
12 December 16th letter?

13 MR. SIMON: No, sir, I do not.

14 MR. CARROLL: Well --

15 EXAMINER CATANACH: Maybe we should make copies.

16 MR. CARROLL: -- I'll make copies for both
17 parties.

18 MR. SIMON: I apologize for that also, but we
19 don't have a copy.

20 EXAMINER CATANACH: That was just faxed to me
21 this morning by BLM, and --

22 MR. SIMON: Oh --

23 MR. CARROLL: Just let me make copies of that.

24 (Off the record)

25 EXAMINER CATANACH: Will the witnesses please

1 stand to be sworn?

2 (Thereupon, the witnesses were sworn.)

3 WIN RYAN,

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

6 DIRECT EXAMINATION

7 BY MR. BRUCE:

8 Q. Would you please state your name and city of
9 residence?

10 A. My name is Win Ryan. I'm from Fort Worth, Texas.

11 Q. Who do you work for and in what capacity?

12 A. I'm a petroleum landman, and I work for Cross-
13 Timbers Oil Company.

14 Q. Have you previously testified before the Division
15 as a landman?

16 A. Yes, I have.

17 Q. And were your credentials accepted as a matter of
18 record?

19 A. Yes.

20 Q. And are you familiar with the land matters
21 involved in these three Applications?

22 A. Yes, I am.

23 MR. BRUCE: Mr. Examiner, I'd tender Mr. Ryan as
24 an expert petroleum landman.

25 EXAMINER CATANACH: He is so qualified.

1 Q. (By Mr. Bruce) Mr. Ryan, what is it that Cross
2 Timbers seeks in these cases?

3 A. We're seeking -- This is to drill three wells and
4 to seek unorthodox location exceptions and simultaneous
5 well dedications.

6 Q. Okay. Now, two of these wells, the primary zone
7 is the Dakota; is that correct?

8 A. That's correct, the Dakota and the Morrison.

9 Q. And in one of the wells the primary or the first
10 zone that you will test is the Paradox?

11 A. That's correct, and that's the Ute Indians A
12 Number 26 well.

13 Q. Okay. Well, let's refer to your Exhibit 1.
14 Could you identify that for the Examiner?

15 A. Okay, this is a land -- nine-section land plat of
16 the Ute Mountain Ute Tribe leases that cross timber zones.

17 The 160-acre spacing units are for the Dakota
18 formation, and then the 640-acre hashed outline in Section
19 2 is for the Paradox formation.

20 Q. Okay. Where are the proposed wells located?

21 A. Okay, the first well, the Ute Mountain Tribal J
22 Number 6 well, is located in the southwest quarter,
23 southwest quarter, of Section 1, 31 North, 14 West.

24 The Ute Indians A Number 26 well is located in
25 the southwest quarter -- or southeast quarter of Section 2,

1 31 North, 14 West.

2 And the Ute Indians A Number 27 is also in the
3 southeast quarter of Section 2, 31 North, 14 West.

4 Q. Now, these -- this land you have in yellow, is
5 that all Ute Mountain Ute land?

6 A. That's all Ute Mountain Ute Tribe minerals, and
7 it's all Cross Timbers Oil Company leasehold, 100 percent.

8 Q. All right. So as a result, there's no need to
9 notify any offset working interest owner regarding these
10 Applications?

11 A. That's correct.

12 Q. And by the same token, the sole royalty owner is
13 the Ute Mountain Ute nation, is it not?

14 A. Yes, that's right.

15 Q. Okay. So regardless of the simultaneous
16 dedication and the unorthodox location, there's no royalty
17 owner adversely affected?

18 A. No, there is not.

19 Q. Okay. Now, let's go into a little more detail.
20 As to the Dakota, what is the well spacing?

21 A. It's 160 acres, with wells no closer than 790
22 feet to the outer boundary of the well unit.

23 Q. Okay.

24 A. And that is the same for the Morrison also.

25 Q. Okay. Now, these are in the Ute Dome-Dakota Gas

1 Pool?

2 A. Ute Dome-Dakota Gas Pool.

3 Q. What about the Paradox?

4 A. And the Paradox is in the Ute Dome-Paradox Gas
5 Pool, which is space don 640 acres, with wells no closer
6 than 1650 feet to the outer boundary of the unit.

7 Q. Okay. Now, looking at Exhibit 1, let's first
8 discuss the well in the southwest quarter of Section 1,
9 which is Case 12,098. Could you identify the proposed and
10 existing wells in that unit?

11 A. Okay, the propose well is the Ute Mountain Tribal
12 J Number 6 well. It's to be located 450 feet from the
13 south line and 500 feet from the west line, which will
14 require an unorthodox location.

15 Then there's an existing Ute Mountain Tribal J
16 Number 1 well, located up in the northeast quarter of the
17 southwest quarter, which actually produces zero MCF of gas
18 per day.

19 And then the Ute Mountain Tribal J Number 4 well
20 in the northwest quarter of the southwest quarter, which is
21 also a Dakota well producing 83 MCF of gas per day.

22 Q. Okay. Is this unorthodox location based on
23 geology?

24 A. Yes, it is.

25 Q. Okay. Now, let's move to the first well in

1 Section 2, and this is Case Number 12,100, and describe
2 Cross Timbers' proposal for the A well Number 26.

3 A. Okay, this is -- we're seeking to drill this well
4 to the Paradox formation. The surface location will be 570
5 feet from the south line and 1045 feet from the east line,
6 with a bottomhole location of 850 feet from the south line
7 and 1450 feet from the east line. Therefore, the
8 bottomhole location for the Dakota and Paradox will be the
9 same. Therefore, we'll need an unorthodox-location
10 exception for the Paradox, but not for the Dakota
11 formation.

12 And then we'll need a simultaneous well
13 dedication for the Dakota, because there is the existing
14 Ute Indians A Number 20 well, which is about in the center
15 of the southeast quarter of Section 2.

16 Q. Okay.

17 A. And also there's a proposed well, the Ute Indians
18 A 27, in the northeast of the southeast of Section 2.

19 Q. Okay. Now, once again, the reason for the
20 bottomhole location being unorthodox in the paradox is
21 geological?

22 A. It's geological and topography also. We have to
23 directionally drill the well.

24 Q. Okay. The surface location is unorthodox because
25 of topography?

1 A. Yes.

2 Q. You've already mentioned the existing Dakota
3 wells. What about -- There is an existing Paradox well in
4 Section 2, is there not?

5 A. Yes, the Ute Indians A Number 7 well, located in
6 the southeast quarter of the northwest quarter. If we're
7 successful with this well, we will shut in that well, which
8 is --

9 Q. Okay, so there's no reason for simultaneous
10 dedication in the Paradox?

11 A. That's correct.

12 Q. Now, then, Case 12,099 regarding the A well
13 Number 27, what will be the location of that well?

14 A. That well is located 2600 feet from the south
15 line and 1000 feet from the east line.

16 Q. And again, because of the number of Dakota wells
17 in the quarter section, you will need simultaneous-
18 dedication approval?

19 A. That's correct.

20 Q. And what is the reason for that unorthodox
21 location?

22 A. That is also based on geology.

23 Q. Okay. Now, these Applications were set for
24 hearing. They were -- Documentation was filed with the BLM
25 and the Ute Mountain Utes for these wells?

1 A. Yes, that's correct.

2 Q. Including this land plat?

3 A. Well, it was actually somewhat different.

4 Q. A similar land plat?

5 A. Yes.

6 Q. And with geological information also?

7 A. Yes.

8 Q. Okay. Was Exhibit 1 prepared by you or under
9 your direction?

10 A. Yes, it was.

11 Q. And in your opinion, is the granting of these
12 Applications in the interest of conservation and the
13 prevention of waste?

14 A. Yes, it is.

15 MR. BRUCE: Mr. Examiner, I'd move the admission
16 of Exhibit 1 into the record.

17 EXAMINER CATANACH: Exhibit Number 1 will be
18 admitted as evidence.

19 Mr. Simon, do you have questions of this witness?

20 MR. SIMON: Yes, sir, just one question.

21 EXAMINATION

22 BY MR. SIMON:

23 Q. Do you recall the date that you filed this
24 information with the BLM?

25 A. Yes, on November 16th of 1998. And I believe it

1 was overnight into the BLM.

2 MR. SIMON: Okay, thank you.

3 EXAMINATION

4 BY EXAMINER CATANACH:

5 Q. Okay, I just want to make sure I get this
6 straight. Starting with Section 1, southwest quarter,
7 you're drilling the J Number 6, which will be a Dakota
8 well?

9 A. Yes, sir. Dakota and Morrison.

10 Q. Now, is that the same pool, the Dakota and the
11 Morrison? Do you know?

12 MR. BRUCE: Mr. Examiner, I looked that up and I
13 could not determine that from the Division's records. I
14 presume that -- Some of these wells out here may be
15 producing from the Morrison, and I think the geologist may
16 be able to affirm that, but I couldn't locate anything in
17 the orders creating these pools which would state whether
18 they included the Morrison, so I'm presuming that it would
19 be a separate pool.

20 EXAMINER CATANACH: But you couldn't find an
21 existing Morrison pool?

22 MR. BRUCE: I could not.

23 EXAMINER CATANACH: Well, I'll ask the geologist.

24 Q. (By Examiner Catanach) You've got -- Within that
25 southwest quarter of Section 1, you've got the Number 1

1 well and the Number 4 well.

2 A. That is correct.

3 Q. They're both Dakota wells?

4 A. Yes.

5 Q. Are those Dakota and Morrison wells, do you know,
6 or are they just Dakota wells?

7 A. I'm not sure. I'm sure the geologist or engineer
8 will better answer that.

9 Q. The unorthodox location for the J 6 is based on
10 geology?

11 A. Yes.

12 Q. Okay. So you want to dedicate that southwest
13 quarter to all three of those, the 1, the 4 and the 6?

14 A. That's correct, yes, sir.

15 Q. Okay. Section 2, the A 26 is going to be drilled
16 as a Paradox well?

17 A. That's correct.

18 Q. And Dakota?

19 A. Well, the Dakota would be -- If the Paradox is
20 successful, we'll leave the Dakota behind pipe.

21 Q. Will the Dakota eventually be produced in that
22 well?

23 A. I would assume eventually.

24 Q. Are you seeking with this Application to have
25 that well designated as a Dakota well, or is that not

1 included in this Application?

2 A. As a simultaneous well dedication, yes, we are.

3 Q. It is?

4 A. Yes.

5 Q. Okay. That well is to be directionally drilled?

6 A. That's correct.

7 Q. Due to -- The surface location is due to
8 topographic?

9 A. Yes.

10 Q. And the bottomhole location is due to geology?

11 A. Geology.

12 Q. And you currently have a Number 20 that's an
13 existing Dakota well?

14 A. Yes.

15 Q. Do you know what that produces?

16 A. That well, I do not know what it produces.

17 Q. Okay, that is a producing well at this time,
18 though, right?

19 A. Yes.

20 Q. So those three wells will be dedicated to the
21 southwest quarter --

22 A. Southeast quarter.

23 Q. Sorry, southeast quarter. That's the 26, 27 and
24 the 20 in the Dakota?

25 A. Yes, sir.

1 Q. All right. Now, let's talk about the -- Well,
2 the 27 is going to be drilled as a what?

3 A. As a Dakota-Morrison well.

4 Q. Not Paradox?

5 A. No, sir.

6 Q. Okay. And that -- And it's again based on
7 geology?

8 A. Yes.

9 Q. Okay. So there's an existing Paradox well, being
10 the Number 7, which is dedicated to all of Section 2?

11 A. That's correct.

12 Q. So that well, the Number 26, will be dedicated to
13 that 640?

14 A. Well, we actually will shut in that Number 7 well
15 if the Paradox is successful in our Number 26.

16 Q. So you're not seeking simultaneous dedication for
17 a 640?

18 A. That's correct.

19 Q. This area that you've outlined in yellow, this is
20 this a single lease?

21 A. No, that's probably two or three leases.

22 Q. Okay, the area in question, the proration units
23 in question, is that a single lease?

24 A. Yes. Well, the Ute Mountain -- The southwest
25 quarter of Section 1 is a separate lease than Section 2.

1 Q. Okay. And the working interest ownership is 100-
2 percent Cross Timbers?

3 A. Yes, sir.

4 Q. And the only royalty interest owner is the Ute
5 Mountain Tribe?

6 A. That's correct.

7 Q. Do you know if that is somehow split among
8 different allottees? Is that the way it works?

9 A. No, this is all tribal lands.

10 Q. Okay, so a hundred percent of the royalty goes to
11 the Tribe, and you don't know how it's distributed from
12 there? I mean, it just -- It all goes to the Tribe, right?

13 A. It's -- I mean, our -- we paid it, one entity.

14 Q. Are there other Dakota -- I'm trying to get a
15 handle on how big these pools are. Do you know, or what's
16 the extent of production in this area? Is this just a
17 small portion of the pool?

18 A. Well, I'm not sure how much -- Probably the
19 engineer could tell you better where exactly all the Dakota
20 production is in the area. I know Burlington has some,
21 either to the northwest or somewhere.

22 Q. On the -- Do you know if you have prior
23 authorization in the southwest quarter of Section 1, where
24 you dedicated the Number 1 and the 4 well to that unit?

25 A. Well, we acquired these from Amoco about a year

1 and a half ago. And they did this same type program,
2 infill drilling, and they received simultaneous well
3 dedications from the NMOCD, and I would assume that was one
4 of the wells.

5 Q. Okay, you can't put your -- You can't reference
6 the orders that approved those?

7 A. No.

8 EXAMINER CATANACH: Anything else of this
9 witness?

10 MR. CARROLL: I have a couple questions.

11 EXAMINATION

12 BY MR. CARROLL:

13 Q. You stated that the information had been filed
14 with the BLM on November 16th?

15 A. Yes, sir.

16 Q. Was that just the Application, or was that
17 exhibits, or what was filed with the BLM?

18 A. It was everything that was filed with the NMOCD
19 also, an application with the BLM, along with the exhibit.

20 MR. BRUCE: What was filed, Mr. Carroll, was an
21 application signed by Mr. Ryan, a land plat somewhat like
22 this, a Dakota structure map which will be presented today,
23 a Paradox structure map which will be presented today, and
24 a geologic write-up by the engineer, Mr. Burch.

25 Q. (By Mr. Carroll) And all that same information

1 was supplied to the Tribe at that time?

2 A. Yes, it was -- I made about 150 copies, I think.
3 To the NMOCD here, the NMOCD in Aztec, the Ute Mountain Ute
4 Tribe, and the Koyak, the BIA, and to the BLM in Durango.

5 Q. Okay. And did you have any meetings with the
6 Tribe prior to that time, or --

7 A. No.

8 MR. CARROLL: That's all I have.

9 EXAMINER CATANACH: Mr. Simon, did you have
10 another question?

11 MR. SIMON: Yes, Mr. Examiner, I'd like to ask
12 one question here.

13 FURTHER EXAMINATION

14 BY MR. SIMON:

15 Q. Where is the -- As close as you can tell now or
16 predict now, where will the bottomhole location of Number
17 26 be?

18 A. It should be approximately 850 feet from the
19 south line and 1450 feet from the east line.

20 Q. 1040 feet?

21 A. 1450.

22 Q. 1450 feet. From the north line?

23 A. No, from the east line.

24 Q. I'm sorry. East line, okay. That would probably
25 be for your Paradox?

1 A. And the Dakota. The geologist could probably
2 explain it, but he explained to me where once it gets to
3 the top of the Dakota, it's going to go straight down.

4 Q. Oh, okay, it's going to be a straight hole after
5 you hit the --

6 A. Once we hit the top of it, yeah.

7 MR. SIMON: Okay, thank you very much.

8 EXAMINER CATANACH: This witness may be excused.

9 THE WITNESS: Thank you.

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

13 DIRECT EXAMINATION

14 BY MR. BRUCE:

15 Q. Would you please state your name and city of
16 residence?

17 A. My name is Gary Burch, and I reside in Arlington,
18 Texas.

19 Q. By whom are you employed and in what capacity?

20 A. I'm employed by Cross Timbers Oil Company as a
21 geologist.

22 Q. Have you previously testified before the
23 Division?

24 A. No, I have not.

25 Q. Would you please briefly describe your

1 educational and employment background?

2 A. Okay, I have a master of science degree in
3 geology from Texas A&M University in 1984. That same year
4 I went to work as an exploration geologist with Sun
5 Exploration and Production Company. That company became
6 Oryx, and I remained there until 1991.

7 In 1992 I became employed by Cross Timbers Oil
8 Company as a geologist, and I've been in that capacity
9 since.

10 Q. Does your area of responsibility include the San
11 Juan Basin?

12 A. Yes, it does.

13 Q. And are you familiar with the geologic matters
14 involved in these three Applications?

15 A. Yes, I am.

16 MR. BRUCE: Mr. Examiner, I'd tender Mr. Burch as
17 an expert petroleum geologist.

18 EXAMINER CATANACH: Mr. Burch is so qualified.

19 Q. (By Mr. Bruce) Now, Mr. Burch, let's go through
20 these Applications. And Mr. Examiner, these exhibits, the
21 next series of three or four exhibits are marked on the
22 back.

23 Let's first discuss the Ute Mountain Tribal J
24 Number 6 well in the southwest quarter of Section 1. What
25 is Exhibit 2?

1 A. Exhibit 2 is a structure map on the top of the
2 Dakota formation. It is based on a 3-D seismic survey that
3 Amoco shot in 1995 and was reprocessed and re-interpreted
4 by Cross Timbers, and is also based on structural well
5 control. The two have been tied in together to come up
6 with this structure map.

7 On the structure map there are some faults that
8 are shown on the seismic lines that are oriented roughly
9 east northeast to west southwest across the area. The
10 Dakota wells, the current producing Dakota wells, are shown
11 encircled. The contours are on 25-foot contour intervals.

12 Q. Overall, could you describe the Dakota geology in
13 this area?

14 A. Okay. The Dakota produces over a large area in
15 here. It's called the Ute Dome structure. It's also the
16 producing structure that the Paradox formation produces on.
17 The overall size of the structure is about a township in
18 size, and within the overall larger structure there are
19 several of these faults, as I alluded to earlier, cutting
20 across the southern end of the structure.

21 These faults act as trapping mechanisms for
22 hydrocarbons migrating up out of the Basin, which lies to
23 the southeast. You can see on the map the structure falls
24 off very rapidly in the southeast of Section 12, as you go
25 off into the San Juan Basin.

1 Q. Now, Mr. Burch, you mentioned the faults which
2 are, let's just say, roughly east-west in this area, are
3 they not?

4 A. Yes, they are.

5 Q. And are these relatively dark straight lines that
6 you have trending across this map?

7 A. Yes, they are. The black lines are faults which
8 are upthrown to the south, and the red lines are faults
9 that are upthrown to the north.

10 Q. What is the vertical displacement along these
11 faults?

12 A. It can range upwards to probably about 250 feet
13 of vertical displacement.

14 Q. Okay. Now, let's discuss the faulting with
15 respect to the Tribal J Number 6 well. First, with respect
16 to the unorthodox location, why do you want that well
17 there?

18 A. Based on our seismic data, there is a fault block
19 in the southwest corner of Section 1, which extends
20 westward into the southeast of Section 2, where you have a
21 closed structure bounded on the north by a down-to-the-
22 north fault. This structure has not been tested.

23 These structures have been proven productive from
24 the lower Dakota and Morrison sandstones on other similar
25 structures in the area, most notably in the -- the present

1 well in the southwest quarter of Section 1 is up on a very
2 similar fault block. It's separated from the proposed well
3 by a fault. Therefore, the proposed well would not compete
4 with that well for any reserves.

5 But that well -- You were asking if there was any
6 Morrison production. Amoco defines that well in the
7 southwest of Section 1 -- it's the Number 4 well -- as
8 producing from the Morrison. So that's an example of
9 Morrison production.

10 When you get off of these small, closed
11 structures, the Morrison is typically wet, and so that's
12 why we want to get on the very tops of these little
13 structural fault blocks.

14 Q. So number one, you need to be structurally high?

15 A. Yes.

16 Q. And number two, the J Number 6 well is unorthodox
17 because you're trying to move south of that fault?

18 A. That's correct. With the fault acting as a trap,
19 the reserves on that fault block to the south of that fault
20 cannot be accessed by the existing well, and that's the
21 reason for the simultaneous well dedication.

22 Q. And again, you said the existing Number 4 well,
23 the one circled in yellow to the north of the proposed
24 well, is not accessing the reserves south of that fault?

25 A. That's correct.

1 Q. Do these faults act as permeability barriers, or
2 can they?

3 A. Yes, they do, and the way they do that is, you're
4 faulting the Dakota, permeable Dakota sandstones, up
5 against the tight Granero shales. Therefore the
6 hydrocarbons cannot migrate into the shales because they're
7 just too tight.

8 Q. Okay. And once again, because of this faulting,
9 even though you have a simultaneous-dedication request,
10 these two wells, these two Dakota wells in the southwest
11 quarter, the Number 4 and the Number 6, will not be
12 competing for the same reserves?

13 A. That's correct.

14 Q. Okay. And once again, there is another well, the
15 Number 1 well, in the southwest quarter, but that well is
16 currently not producing?

17 A. That well is inactive, and I believe the Number 4
18 well was actually drilled as a replacement for the Number 1
19 well. I don't think they were both ever active at the same
20 time.

21 Q. Okay. Now, let's move on to the Cross Timbers
22 proposal for the A Number 26 well. Now, you have two
23 exhibits for this well, Mr. Burch. They're marked 3 and
24 3A. Just for purposes, to explain, Exhibit 3 is the same
25 geological map as Exhibit 2, is it not?

1 A. Yes, it is.

2 Q. And the only difference is some of the labeling
3 on there?

4 A. That's correct.

5 Q. Okay. Now, this well will be drilled to test the
6 Paradox; is that correct?

7 A. Yes, it will.

8 Q. And it is being drilled as a replacement well for
9 the Number 7?

10 A. That's correct. The Number 7 well was drilled
11 back in 1955, and it produced over 9 BCF of gas from the
12 Paradox.

13 In 1983 the Number 7 well production rate
14 suddenly dropped from about 600 MCF a day to about 40 MCF a
15 day, and several workovers have been attempted on that well
16 to try to get the production back up to where it should be,
17 and none of them have been successful. And our engineers
18 have calculated that there's a substantial amount of gas
19 that that well has failed to recover within the section.

20 Q. Okay. Moving on to your Exhibit 3A for a minute,
21 could you maybe give a little broad description of the
22 Paradox geology in this area?

23 A. Okay, the Paradox produces on the top of the Ute
24 Dome structure, very similar to the Dakota, only there are
25 no small faults bisecting the overall larger structure.

1 The exhibit is a structure map on the top of the Akah
2 formation, which is a member of the Paradox, and the wells
3 circled in blue are wells that currently produce from the
4 Paradox.

5 Q. Are there different producing intervals in the
6 Paradox?

7 A. Yes, the Paradox is actually a group name. It's
8 composed of several formations. Those would be, in
9 ascending order, the Alkali Gulch, the Barker Creek, the
10 Akah, the Desert Creek and the Ismay. And all of those
11 formations produce on the Ute Dome field.

12 Q. Are these separate zones vertically communicated?

13 A. The literature suggests that they are separate
14 zones, that each one has its own individual gas-water
15 contact.

16 Q. Now, looking just at the Paradox, why was this
17 bottomhole location chosen for the replacement well?

18 A. There's basically three reasons why we wanted to
19 test the Paradox down here in the southeast of 2.

20 Number one, as I stated, because the production
21 in the existing well was never able to be brought back up
22 to where it should be, there were -- that well did not
23 recover all of the reserves in the section that it would
24 have normally recovered. And like I said, it made over 9
25 BCF of gas. And to recover the remaining reserves in the

1 section, we wanted to get a fair distance away from the
2 existing well, because it's probably depleted a large part
3 of the -- or -- if not all of the northwest quarter of
4 Section 2. So if there were any reserves remaining in
5 Section 2, it's likely to be down in the southeast quarter.

6 Additionally, the proposed location is on the
7 edge of the Dome where you go from relatively flat-lying
8 strata at the top to steeply dipping strata off to the
9 southern flank, and that forms a kind of a flexure point.
10 And what you see along these flexure points is increased
11 fracturing because of tensional forces created by the
12 folding of the rocks. So we feel that the southeast
13 quarter of Section 2 would be the most highly fractured
14 part of the section. And fracturing plays a very important
15 role in the productivity of these wells.

16 The third reason for putting the well in the
17 southeast of 2 is that the well in Section 11, the Paradox
18 well in Section 11, encountered a carbonate buildup that
19 none of the other Paradox wells in the field have
20 encountered. It's a zone that's unique to that well. And
21 based on the depositional environment, I feel that the
22 buildup that's seen in that well in Section 11 is likely to
23 trend into the southeast part of Section 2, and we want to
24 try to find the porosity trend that that Section 11 well
25 had, because it is by far the best well in the field.

1 Q. Now, as far as the surface location of this well,
2 is that based on topography, or are there...

3 A. Yes, it is. We wanted the surface location to be
4 850 from the south and 1450 from the east, but because of
5 topography we were not able to put it there. The closest
6 location, the closest surface location to that spot that we
7 could find is the one that we have presented here, and that
8 is 570 from the south and 1045 from the east.

9 Q. Now, let's discuss the Dakota geology at this
10 particular location.

11 If you look at your Exhibit 3, which, as I said,
12 is the same geology depicted on Exhibit 2, once again, you
13 will be -- if I can put words in your mouth -- you're going
14 to be south of the fault but at a structurally high
15 location?

16 A. That's correct. The Number 20 well from both log
17 tops and seismic data confirmed that that well was on the
18 downthrown side of the fault. It's very low structurally.
19 It was not even drilled into the Morrison formation. If it
20 would have been, it likely would have been wet.

21 We're wanting to test the Morrison and the Dakota
22 sands on the upthrown side of the fault block.

23 Q. And because, again, the Number 26 well will be
24 fault-separated from that Number 20 well, there won't be
25 any competition for reserves; is that correct?

1 A. That's correct.

2 Q. Okay, let's move on to your final exhibit, Mr.
3 Burch, Exhibit Number 4. It's another Dakota structure
4 map. It's the same Dakota structure map, just with
5 different labeling for the 27 well, is it not?

6 A. Yes.

7 Q. Could you discuss for the Examiner why Cross
8 Timbers wants to drill this well? What is the geological
9 basis for it?

10 A. Again, this is a very similar type of
11 circumstance as the other two Dakota wells. We're testing
12 a small, faulted structural closure that extends from the
13 center of the east half of Section 2 into the northwest of
14 the southwest of Section 1.

15 As I stated before, the existing Dakota well,
16 which is the Number 4 well, has proven already productive
17 from the lower Dakota and the Morrison sandstones on this
18 fault block, and we're just looking to offset that well
19 along the same fault block in Section 2.

20 Q. So what you hope to do is duplicate the J Number
21 4 well over to the east and not the Number 20 well to the
22 south of this proposed well?

23 A. That's correct, we should be well updip of the
24 Number 20 well.

25 Q. Will you be competing for reserves with the

1 Number 20 well in the southeast quarter of Section 2?

2 A. No, we should not.

3 Q. Mr. Burch, were Exhibits 2 through 4 prepared by
4 you or under your direction?

5 A. Yes, they were.

6 Q. And in your opinion, is the granting of these
7 three Applications in the interest of conservation and the
8 prevention of waste?

9 A. Yes.

10 MR. BRUCE: Mr. Examiner, I'd tender the
11 admission of Cross Timbers Exhibits 2 through 4.

12 EXAMINER CATANACH: Exhibits 2 through 4 will be
13 admitted as evidence.

14 Mr. Simon, do you have any questions?

15 MR. SIMON: Yes, Mr. Examiner.

16 EXAMINATION

17 BY MR. SIMON:

18 Q. On your Exhibits 2 and 3, which are somewhat
19 identical as I look at them, the contouring here reflects
20 what?

21 A. This reflects the subsurface structure at the top
22 of the Dakota formation.

23 Q. At the top of the Dakota. And what --

24 A. It's not shown here, but it should be in feet
25 above sea level.

1 So for example, if you see a 3700 contour, that
2 means the top of the Dakota is 3700 feet above sea level at
3 that contour.

4 Q. Okay. But we're keying in on the Dakota.

5 A. Yes.

6 Q. Okay. And the faults that you have here running
7 east and west also are related to faulting in the Dakota?

8 A. Yes.

9 Q. Okay. Let's take -- I guess it's Exhibit 2. In
10 the southeast quarter of Section 2 you have a well with a
11 yellow circle around it?

12 A. Yes.

13 Q. That is a Dakota producer?

14 A. Yes. It's currently only making about 9 MCF a
15 day. It's a very poor well.

16 Q. And right south of that producer is a fault line;
17 is that correct?

18 A. That's -- Yes.

19 Q. In the southwest quarter of Section 2, you also
20 have another well with a yellow circle around it?

21 A. Yes.

22 Q. That's a Dakota well?

23 A. Yes.

24 Q. Okay. That well is not in the same fault block
25 as the previous one we talked about?

1 A. No, it's not. There's a little bit of an error
2 on this map.

3 That well symbol for that well in the southwest
4 corner of 2 should be on the south side of that fault, and
5 it's shown on the map as being just off to the north side.
6 But it's on the south side of that fault.

7 Q. It's on the south side of the fault.

8 A. Yes.

9 Q. So you're inferring, then, that the fault line
10 associated with the second one I mentioned, as well as the
11 fault line associated with the first well, there are no
12 wells in that fault block?

13 A. That's correct.

14 Q. Let's jump up to the northwest corner of Section
15 2. There are two wells with yellow circles around them?

16 A. That's correct.

17 Q. Are those wells in the same fault block as the
18 well in the in the southeast corner of Section 2?

19 A. No.

20 Q. They are separate?

21 A. Yes.

22 Q. Okay. Bottomhole pressure data, I assume, will
23 be discussed by your engineer?

24 A. I believe so.

25 MR. SIMON: Okay, thank you very much.

EXAMINATION

BY EXAMINER CATANACH:

Q. With regards to the 26 well, you mentioned that there were some topographic considerations. Can you discuss those?

A. It's hard to discuss without showing the map, but there's a pretty good hill sitting right there where we wanted the surface location to be. We just could not build a location up there. We had to get off the crest of that hill.

MR. BRUCE: Mr. Examiner, we do have a topographic map marked Exhibit 7.

THE WITNESS: This is a really crude exhibit, but it was our work map.

You see in the southeast of 2 there's a black dot with an arrow on it and the letters "LOC" below it. That's where we wanted the location to be, ideally, from the geology.

The yellow-highlighted dot is where the actual surface location will be. That first location fell on the top of that little mountain or hill or whatever you want to call it. It's very rugged. We actually went out there and confirmed there's no way we could build a location there.

Q. (By Examiner Catanach) Does BLM work with you in conjunction on these locations?

1 A. I am not sure if the BLM has approved our staked
2 location or not.

3 MR. RYAN: I'm not sure, but I believe they do
4 meet with them to go out there.

5 EXAMINER CATANACH: Did you have something else?

6 MR. SIMON: Mr. Hammond might be able to answer
7 that question.

8 MR. HAMMOND: Just going to say that the BLM, the
9 BIA and the Tribe were there when they did stake the
10 locations.

11 EXAMINER CATANACH: Okay. So the BLM and the
12 tribe are in concurrence with the locations they've chosen;
13 is that correct?

14 MR. HAMMOND: Yes, sir.

15 Q. (By Examiner Catanach) The Number 26, again,
16 that's going to be the Paradox test. Do you know what
17 intervals in the Paradox you're going to be completing the
18 well in?

19 A. We're going to test all of the intervals, but we
20 won't know which ones we'll complete in until we test them,
21 so...

22 Q. Is the --

23 A. But ideally, we would like to complete in all of
24 them.

25 Q. Is the Number 7 well produced -- Did that produce

1 from all of the intervals?

2 A. I believe it did.

3 Q. And that whole Paradox interval is all within a
4 single pool; that's not broken up like it is in the Barker
5 Dome?

6 A. Right, as of now, it's all a single pool.

7 Q. On your Exhibit 2, I see a -- in addition to the
8 J 6 well where there's a red circle, there's a red circle
9 down in Section 12 south of there. Is that another
10 proposed location?

11 A. That is a proposed location for a Paradox well
12 that we were only seeking an unorthodox location for.
13 Since there's no existing Paradox well in Section 12, we
14 did not need a simultaneous well dedication, and I believe
15 that unorthodox location was approved administratively.

16 Q. So it's your testimony that a portion of that
17 southwest quarter did not adequately drain the Dakota
18 formation? A portion was not adequately drained by the
19 Number 1 and Number 4 wells; is that right?

20 A. Yes, yes.

21 Q. Do you know what the plans are for the -- Is it
22 the Number 1 well that's inactive?

23 A. Yes, it's currently inactive in the Dakota.

24 Q. Do you know what's going to be done with that
25 well?

1 A. No, I don't.

2 Q. And the Number 27, you've got a similar situation
3 as far as drainage, which is a portion of that proration
4 unit, was not drained by the existing Number 20 well;
5 that's your testimony?

6 A. Yes.

7 Q. Due to the presence of that fault block?

8 A. Yes.

9 Q. And that unorthodox location is necessary to be
10 on the north side of that fault. And is that a
11 structurally high position in that area there?

12 A. At the Ute Indians A 27, yes, that little black
13 contour that's just right on top of the -- or just right
14 above the well symbol --

15 Q. Uh-huh.

16 A. -- is a 3900-foot contour. And the existing
17 Number 20 well is below the 3700-foot contour. So we
18 should expect to be about 200 feet updip, or high, to the
19 Number 20 well.

20 Q. Okay. Back to the Number 6, how much structural
21 position are you gaining with that well?

22 A. The Number 6 well? Well, we expect the top of
23 the Dakota to be a little bit above 3700 foot. We're not
24 gaining structural elevation to any well, because there's
25 no other well in this fault block. So it will be the first

1 test of this fault block.

2 Q. With regards to the Paradox unorthodox location,
3 what tools can you use to determine where the flexure point
4 is within that reservoir, or what data have you used to
5 locate that?

6 A. That's just based on our seismic data and the
7 well-control data. And it's just simply where you see a
8 change in depth.

9 On a contour map, for example, it would be from
10 widely spaced contours to closely spaced contours, where
11 you see that change is what I'm calling the flexure point
12 or the flexure line. And typically that's where you expect
13 the most fracturing.

14 Q. So that's not anything specific that you can
15 point to; it's just in that general area of the southeast
16 quarter --

17 A. Right.

18 Q. -- that you're referring to?

19 A. Right.

20 Q. Explain to me again the significance of the
21 carbonate buildup in the Number 11 well. Was that in the
22 Paradox formation?

23 A. Yes, it's in the basal part of the Ismay
24 formation, or the Ismay member of the Paradox.

25 There's about a 75-foot thick porous buildup in

1 that well that I do not see in any other Paradox well on
2 this structure. And reading up on the depositional history
3 of the area, it is my opinion that if we were to catch that
4 porosity zone in any offsetting location, that the
5 southeast of Section 2 would probably be the best chance to
6 catch it.

7 In other words, the buildup would probably be
8 oriented in a northeast-southwest orientation.

9 Q. Potentially make the Ismay zone more productive
10 in that area; is that --

11 A. Yes, the -- I don't remember how much the well in
12 Section 11 has made, but it has made a considerable amount
13 more than any of the other wells in the field.

14 EXAMINER CATANACH: That's all I have.

15 Do you have anything?

16 FURTHER EXAMINATION

17 BY MR. SIMON:

18 Q. Do you by any chance happen to have a cross-
19 section with you indicating this carbonate buildup?

20 A. No, I don't. I just have a log.

21 MR. SIMON: Okay. That's it.

22 EXAMINER CATANACH: Okay, this witness may be
23 excused.

24 MR. BRUCE: Mr. Examiner, I'd ask that Exhibit 7,
25 the topo map, be admitted into the record.

1 EXAMINER CATANACH: Exhibit Number 7 will be
2 admitted as evidence.

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

6 DIRECT EXAMINATION

7 BY MR. BRUCE:

8 Q. Will you please state your name for the record?

9 A. Barry Voigt.

10 Q. Who do you work for?

11 A. I work for Cross Timbers Oil Company as an
12 engineer.

13 Q. Have you previously testified before the
14 Division?

15 A. No, I have not.

16 Q. Would you please outline your educational and
17 employment background?

18 A. I have a -- received a bachelor's of science
19 degree from Colorado School of Mines in petroleum
20 engineering in 1991. From then until 1993 I worked for
21 ARCO Oil and Gas. From 1993 to 1995 I worked for an
22 engineering consulting firm. And from that point on, I've
23 worked for Cross Timbers.

24 Q. Are you familiar with the engineering matters
25 related to the Applications before the Division today?

1 A. Yes.

2 Q. And your area of responsibility includes this
3 portion of the San Juan Basin?

4 A. Yes.

5 MR. BRUCE: Mr. Examiner, I'd tender Mr. Voigt as
6 an expert petroleum engineer.

7 EXAMINER CATANACH: He is so qualified.

8 Q. (By Mr. Bruce) Mr. Voigt, you have two exhibits.
9 One is for the -- Let's go to the first one, for the Ute
10 Indians A 27 well. Could you discuss what that shows and
11 discuss why you did the reservoir analysis for this well,
12 as opposed to the other Dakota wells we're talking about
13 here today?

14 A. Currently, this well just has one Dakota well
15 producing within the quarter section, in the southeast
16 quarter of Section 2.

17 Since we are planning on drilling additional
18 wells in there, I did volumetric analysis to see if the
19 current well was going to produce the reserves in that
20 quarter section.

21 What I did on the volumetrics was just doing the
22 first three Dakota sands, not including the lower Dakota
23 sands or the Morrison in my volumetric calculation.

24 Total gas in place for the first three sands is
25 approximately 949 million cubic feet.

1 And the Ute Indians A Number 20, has a cumulative
2 production as of 5-98 as of 133 million. It's currently
3 producing at a rate of approximately 9 MCF a day, so I did
4 not increase it from the decline-curve EUR.

5 Recovery of gas in place, based on those numbers,
6 would be about 14 percent, in the quarter section.
7 Therefore, if you go to the remaining reserves, what I did
8 is, I took the gas in place, applied an 85-percent recovery
9 factor to bring the recoverable gas in place down to 807
10 million cubic feet, subtracted off the expected recovery
11 from A 20, and that left a remaining reserves of 674
12 million cubic feet.

13 Q. So in summary, Mr. Voigt, even if the 27 well is
14 not fault-separated from the Number 20 well, there are
15 substantial reserves to be recovered yet in that quarter
16 section?

17 A. Correct.

18 Q. What are the remaining pages of Exhibit 5?

19 A. The remaining pages are just my volumetric
20 calculations and all the input variables that went into
21 them for each of the Dakota sands --

22 Q. Okay.

23 A. -- and where the data was collected.

24 Q. Let's move on to your Exhibit 6 regarding the
25 currently existing A Number 7 well, the Paradox well.

1 Could you identify this exhibit for the Examiner and tell
2 him what it says?

3 A. Exhibit 6 is the Ute Indians A 7, which is the
4 current Paradox producing well in Section 2. That well has
5 produced, as of 5-98, 10 BCF, a little over 10 BCF.

6 From a decline curve EUR, which I have supplied a
7 plot in the following pages, estimated ultimate recovery on
8 that well is about 10.1 BCF.

9 On the second page of this is a P/Z plot on the A
10 Number 7, which shows that the gas in place for the
11 Paradox, based on the pressures, the P/Z plot, is 13.6 BCF.

12 If I apply an 85-percent recovery factor, I end
13 up with 11.5 BCF recoverable.

14 Since the A Number 7 is only going to recover
15 10.1 BCF, the unrecovered reserves from that well are
16 approximately 1.4 BCF.

17 Q. So it's worthwhile drilling another well to try
18 to recover what was left by the A 7?

19 A. Yes.

20 Q. Looking at your page 3 of your exhibit, is this a
21 production history or chart, graph, of the A 7?

22 A. Yes, it's a plot of the production history of the
23 Ute Indians A Number 7.

24 As was previously stated, in 1955 it was
25 originally completed. In November of 1961 they repaired a

1 casing leak at 3815 feet, which you can't see on this plot.

2 In 1984 they perforated an additional zone called
3 the Honnacker Trail. And as you can see, their production
4 problems started during 1984.

5 They found a casing leak in June of 1984 from 377
6 to 439 feet and squeezed that. And as you can see, you
7 still have no real production response.

8 In May of 1985 they pumped a solvent acid cleanup
9 job on both the Honnacker Trail and the Paradox formations.
10 And as you can see, you still have not regained production
11 up to the performance that it was at before.

12 And in June of 1993 they squeezed the Honnacker
13 Trail and re-acidized the Paradox formation, and still had
14 no response.

15 Q. So in your opinion, is the current producing rate
16 a fraction of what it really should be?

17 A. Yes.

18 Q. Were Exhibits 5 and 6 prepared by you or under
19 your direction?

20 A. Yes.

21 Q. And in your opinion, is the granting of these
22 Applications in the interests of conservation and the
23 prevention of waste?

24 A. Yes.

25 MR. BRUCE: Mr. Examiner, I'd tender Cross

1 Timbers 5 and 6 into the record.

2 EXAMINER CATANACH: Exhibits 5 and 6 will be
3 admitted as evidence.

4 Mr. Simon, do you have any questions?

5 MR. SIMON: Yes, sir.

6 EXAMINATION

7 BY MR. SIMON:

8 Q. Mr. Voigt, what have you done, from a reservoir-
9 engineering standpoint, especially relating to bottomhole
10 pressures, to determine whether any effective drainage has
11 taken place between wells? My question to your geologist
12 was earmarked in that direction, in that you have some
13 wells across faults, and unless you have done some very
14 detailed reservoir -- I'm sorry, detailed bottomhole
15 pressure work, if you've taken any interference tests, if
16 you've taken any reservoir-limit tests, you really don't
17 know whether one well is sufficiently draining another
18 area, do you?

19 A. The pressure data would help you out in that
20 instance, yes.

21 Q. What else beside pressure data can you come up
22 with that would indicate that there is any drainage taking
23 place?

24 A. You can look at your volumetrics, and that will
25 help you out. Or if you have P/Z data.

1 Q. Right.

2 A. The -- I do not have any P/Z data on the Dakota.
3 I do have it on the Paradox, but I have not been able to
4 locate any on the Dakota.

5 Q. Well, don't you feel from a reservoir-engineering
6 standpoint that that needs to be very much explored before
7 you start asking for additional Dakota locations, Morrison
8 locations, when in essence some of that area may or may not
9 have been drained?

10 A. In the instance of the Section 2 well, to my
11 knowledge those wells -- the only well you have producing
12 out of the Morrison is the one in the southwest quarter,
13 the Ute Indians A 25.

14 Q. Twenty-five?

15 A. Yes.

16 Q. Uh-huh.

17 A. And since these are a Morrison test, we are
18 trying to go for the Morrison in the southeast quarter --

19 Q. Well, I thought --

20 A. -- and Dakota.

21 Q. -- the primary target was the Dakota?

22 A. Dakota, with the Morrison test.

23 Q. With the additional --

24 A. Yes.

25 Q. -- exploitation of the Morrison?

1 A. Yeah. And by volumetric calculations, I've shown
2 that you're not going to recover all the gas in place with
3 the current well, just in the first three sands. And
4 that's not including the lower sands or the Morrison
5 volumetrics.

6 Q. Well, I was just wondering -- I was trying to
7 read and listen to you at the same time --

8 A. Yes.

9 Q. -- and I apologize for that -- as to what the
10 recovery efficiency is in the Morrison -- I mean, excuse
11 me, in the Dakota, or even in the Paradox.

12 A. I believe the recovery efficiency in the Dakota
13 wells would be approximately 85 percent.

14 Q. In the Dakota wells?

15 A. Yes.

16 Q. Eighty-five percent recovery, okay.

17 A. Correct.

18 Q. How about the Paradox? Have you --

19 A. If you were to do some material balance --

20 Q. Right.

21 A. -- and use the bottomhole pressures for
22 abandonment pressure.

23 Q. Right.

24 A. And in the Paradox, 85 percent recovery factor
25 was basically based on about a 530-pound abandonment

1 pressure.

2 Q. Okay. So really, in summation, we can say that
3 we have no, if you will, *bona fide* evidence to indicate
4 whether the wells that you now have will drain the
5 locations that you are proposing without the benefit of
6 additional bottomhole pressure analysis.

7 Did you say that you had not looked at any
8 bottomhole pressures, or there were no bottomhole
9 pressures?

10 A. In the Dakota, the only pressures that I have
11 found in the well files that we obtained from Amoco were
12 shut-in casing pressures at the time of first delivery.

13 Q. Would you not think it would be advisable, before
14 you haul off and drill these wells and spend the money, to
15 try to do some interference testing? That may be a lot
16 cheaper than drilling a well.

17 A. When you look at it, these wells are not all that
18 expensive to drill. They are approximately \$200,000.

19 Q. Okay.

20 A. And I believe in the volumetrics that I've
21 calculated here, that we will not recover the reserves with
22 the current well. And that well looks like it had problems
23 within its lifetime also, that A 20, if you look at the
24 production history on it.

25 Q. Right.

1 A. Because it fell off dramatically in 1989.

2 Q. Would you say it's proper to conclude that the
3 drilling of these wells, based on what you tell me and
4 based on the evidence that we have to date as to what has
5 been drained and what's not been drained, that one of the
6 purposes of drilling these wells is to get the gas out
7 quicker from an economic standpoint?

8 A. No, it's to recover -- get the highest recovery
9 efficiency possible in the reservoir.

10 Q. Highest recovery efficiency --

11 A. Yes.

12 Q. -- without any relationship to the economics?

13 A. Because -- Well, there's also an economic factor
14 in there. In order to drill, you have to drill an economic
15 well.

16 Q. Correct.

17 A. And if you go back to my Exhibit Number 5 where
18 the Ute Indians A 20 looks like it's only going to recover
19 about 14 percent of the volumetric --

20 Q. Right.

21 A. -- gas in place, when in most gas reservoirs you
22 recover 80-percent-plus, it seems like you are, you know,
23 inefficiently draining that section.

24 Q. But your 85-percent recovery is related not to
25 water-drive reservoirs, gas reservoirs?

1 A. Yes.

2 Q. You're talking about solution gas drive?

3 A. Yes.

4 Q. Okay. I don't know whether you're the person to
5 ask the person of, but it will fall in engineering and the
6 completion area of drilling and completion. Is the
7 question that you mentioned about -- I mean that the
8 geologist mentioned, that you hope to complete in all of
9 the zones in the Paradox --

10 A. In this location, yes.

11 Q. Right. And I just wondered, are you aware of the
12 BLM's position and the Tribe's position that commingling
13 without special permission and without special testing is
14 not going to be permitted?

15 A. Within the Paradox?

16 Q. Within anything that we do on the Indian
17 reservation?

18 Let me rephrase that so I don't confuse you on
19 that.

20 A. Are you saying between the Paradox and the
21 Dakota, or --

22 Q. No, the zones within the Paradox. You've got the
23 Ismay and several others. They will not be totally
24 commingled together, based on what the BLM and the Tribe
25 has done relating to Burlington and what they have done in

1 the adjacent area.

2 In other words, what I'm saying is that we're
3 just not -- the Tribe and the BLM will just not permit you
4 going in and randomly perforating various zones that are
5 separate, geologically separate, and producing them with
6 one volume being related to that well each month, that it
7 will have to be allocated based on some testing or the old
8 spinner survey, which I'm sure you're familiar with, as to
9 allocating what percent of what gas comes out of what
10 zone --

11 A. Yes.

12 Q. -- and the production is then allocated. Either
13 that, or you can quadruple- or triple-complete, whatever
14 you want to do.

15 You know, we would favor total separation so that
16 we could accurately measure the volumes of gas that are
17 coming out of the reservoir.

18 A. Yes.

19 Q. And this is something that we would have to work
20 out. When I say "we", I'm talking about the BLM.

21 And also the OCD, I don't know what their
22 position is on commingling today in this area, but
23 certainly we'd want to work with them as well.

24 Well, I just wanted to bring that to your
25 attention because of what was mentioned, that you may want

1 to complete several zones within the Paradox.

2 A. Yes.

3 Q. Okay. Again, I apologize if I'm asking the wrong
4 person, but --

5 A. Okay.

6 Q. -- you're talking here in some cases about
7 plugging wells, in favor of a new well.

8 A. Yes.

9 Q. For example, this Number 7 well versus the well
10 that you're going to drill to replace it?

11 A. Yes.

12 Q. Again, I'm not certain, but I think it's only
13 fair to mention to you that before you plug any well on the
14 reservation, the Tribe should be consulted and have the
15 right to take the well over.

16 A. Yes. Our intent is to shut in the A 7 well while
17 the other well is producing, and not plugging it.

18 Q. Okay.

19 A. Just shutting it in.

20 Q. Right. Okay. Well, if there was any thought
21 along those lines --

22 A. Yes.

23 Q. -- I thought I would --

24 A. Yes.

25 Q. -- mention that to you, that prior to any

1 plugging, the Tribe would have to have its -- you would
2 have to have the Tribe's approval, in the event that they
3 might want to take it over and produce it themselves.

4 MR. SIMON: Thank you very much, I appreciate
5 your help.

6 MR. BRUCE: Mr. Examiner, could I ask a couple of
7 questions to follow this?

8 EXAMINER CATANACH: (Nods)

9 FURTHER EXAMINATION

10 BY MR. BRUCE:

11 Q. Mr. Voigt, now, looking at this nine-section area
12 of Mr. Ryan's map --

13 A. Yes.

14 Q. -- do you know when the last time Amoco -- You
15 bought all of these leases from Amoco, did you not?

16 A. Correct.

17 Q. When was the last time Amoco drilled a well in
18 that area?

19 A. The last time was the A 25 well in the southwest
20 of Section 2. I don't recall the date. I could find it
21 here.

22 Q. Okay. Is it fair to say that most of these wells
23 were drilled before the Nineties?

24 A. Yes.

25 Q. So Amoco has done very little work in developing

1 these leases over, say, the last decade?

2 A. Correct.

3 Q. Cross Timbers is in the business of drilling
4 wells and making money, is it not?

5 A. Correct.

6 Q. And the only it can do that is by drilling
7 economic wells; is that right?

8 A. Correct.

9 A. And just looking at the Dakota, is the current A
10 20 well an economic well?

11 A. Marginal.

12 Q. Marginally economic?

13 A. Very marginal. It is close to the economic
14 limit.

15 Q. And it has recovered -- It's only producing what,
16 9 MCF a day now?

17 A. Nine MCF a day, correct.

18 Q. And Cross Timbers feels it can drill an economic
19 well for the A 27?

20 A. Correct.

21 MR. BRUCE: Thank you.

22 EXAMINER CATANACH: Mr. Simon, with regards to
23 the Division's position on commingling of the Paradox
24 formation, at the current time this is a single pool, which
25 is called the Paradox pool?

1 MR. SIMON: Right.

2 EXAMINER CATANACH: We have not broken it down
3 into other producing formations, as we did in Barker Dome,
4 I believe it was?

5 MR. SIMON: Well, Barker is where Burlington has
6 been drilling some wells, yes, sir.

7 EXAMINER CATANACH: Right. So we would not --
8 The way that the pool is configured at this time, we would
9 not have an objection to them perforating more than one
10 zone at a wellbore --

11 MR. SIMON: Right.

12 EXAMINER CATANACH: -- because it's not
13 separated --

14 MR. SIMON: Right.

15 EXAMINER CATANACH: -- it's all considered by the
16 Division to be one source of supply. Just for the record
17 I'd like to state that.

18 MR. SIMON: Thank you, appreciate that.

19 EXAMINER CATANACH: I'm also curious to know
20 whether or not the tribe has a position on the drilling of
21 these wells. Are you taking a position or -- I'm just a
22 little curious as to what --

23 MR. SIMON: Mr. Examiner, as I mentioned before,
24 in my initial conversation, we have -- "we" being the Tribe
25 and its technical staff, are kind of Johnny-come-latelys in

1 this area here on these three wells. I seriously apologize
2 that we had not an opportunity to participate when the
3 first three wells by Cross Timbers was requested to be
4 drilled.

5 Right now, we're just trying to gather as much
6 information as we can to determine whether the drilling of
7 these wells is justified. This is relating to my questions
8 on bottomhole pressures.

9 I, you know, have seen very little here presented
10 today indicating anything related to actual drainage of the
11 wells. Perhaps the volumetrics that have been presented
12 are as accurate as they can be. But it's just an estimate
13 or a guess, if you will, as to effective drainage taking
14 place. The only way that can be done would be through the
15 analysis of bottomhole pressures, reservoir-limit tests,
16 what have you.

17 And so we're just trying to seek out as much
18 information as we can and get some clarification. We
19 certainly recognize that the more production on the
20 reservation, the more royalty goes to the Tribe. That is
21 obviously a given in this issue.

22 However, in the past, which I believe the Tribe
23 is now trying to change, a more active participation in the
24 oil and gas activity on the reservation and a much closer
25 relationship with the BLM. I would like to say also, a

1 more -- closer relationship with the OCD. But as you well
2 are aware of this MOU, the BLM is supposedly representing
3 the tribe. And in turn, we will try to get our two cents
4 worth in with the BLM prior to their making a conclusion
5 and a recommendation to you.

6 Again, I profusely apologize because the BLM as
7 not here today, and we are not pleased with that, and I
8 would much rather them be up here talking and questioning
9 than me. But as things turned out they didn't show up, and
10 Mr. Hammond and I felt that it would be appropriate for us
11 to kind of step in and question some of the witnesses in
12 some of these technical areas.

13 Having said all that, in summation, we're just
14 trying to learn a little bit about why Cross Timbers wants
15 to drill these wells, as well as to the support that they
16 have developed to present to you today.

17 EXAMINER CATANACH: So you're certainly not
18 opposing the drilling of these wells; your opposition stems
19 from the lack of information that you think is available?

20 MR. SIMON: Well, I don't want to blame the lack
21 of information on Cross Timbers. I think from what we've
22 heard here, the information has been furnished to the BLM.
23 And I don't think that we want to concur or object at this
24 point, until such time as we have an opportunity to sit
25 down with the BLM and their technical staff, and I think

1 there's a period of time in which they have to get back to
2 you with their particular recommendation.

3 And we will make every effort to do that. I can
4 assure you that the Tribe will be hot on the trail of the
5 BLM in trying to resolve this.

6 Like I say, at this point in time, it's just
7 difficult for us to say, No, we don't like the idea, or,
8 Yes, we concur with it.

9 EXAMINER CATANACH: Okay.

10 MR. SIMON: I apologize for having to be so vague
11 about it, but I have no other choice to make at this time.

12 EXAMINER CATANACH: Okay. Thank you, Mr. Simon.

13 MR. SIMON: You bet. Thank you.

14 EXAMINER CATANACH: I've got a few questions.

15 EXAMINATION

16 BY EXAMINER CATANACH:

17 Q. With regards to the volumetric calculations done
18 on the southeast quarter of Section 2, you didn't do any
19 decline-curve analysis on the A 20 to verify the
20 volumetrics?

21 A. No, did not. Currently the well is producing at
22 about 9 MCF a day. The economic limit is approximately 200
23 MCF a month. So you're looking at 270 a month. So you
24 have about 70 MCF a month, at a decline of, typically,
25 about six percent. So if you use a six-percent decline, it

1 might add, at most, 10 to 11 million cubic feet to that
2 number.

3 But as I said, the well looks like it has been
4 having problems in the past, and in talking to our
5 operations people, it has. And it has a problem flowing.

6 Q. Certainly the Number 20 well at this point will
7 not be able to recover the remaining gas reserves in that
8 southeast quarter?

9 A. Correct.

10 Q. According to your volumetrics?

11 A. Correct.

12 Q. And you believe that 674 million are available
13 for that Number 27 to be produced?

14 A. In the first three Dakota sands, not including
15 the lower Dakota. That does not include what reserves you
16 might find in the lower Dakota or the Morrison, just in the
17 first three Dakota sands.

18 Q. Why was the lower Dakota excluded from this?

19 A. You'll probably have to confer with the
20 geologist. Gary?

21 MR. BURCH: Why was the lower -- ?

22 THE WITNESS: If I may.

23 EXAMINER CATANACH: The Dakota -- Is the lower
24 Dakota being produced in the A 20?

25 THE WITNESS: No, it is --

1 MR. BURCH: No, it's not.

2 EXAMINER CATANACH: But there gas reserves in the
3 lower Dakota that haven't been accessed in the wells in the
4 southeast quarter?

5 MR. BURCH: We feel that if you get up on the
6 structural closure of the southwest fault where you're
7 structurally high, that the lower Dakota sands will be
8 productive there, whereas in the wells that are
9 offstructure the lower Dakota sands are wet.

10 EXAMINER CATANACH: Was the 20 producing from the
11 Morrison?

12 MR. BURCH: No, it didn't even drill.

13 THE WITNESS: Didn't even penetrate.

14 Q. (By Examiner Catanach) Okay, you have not done
15 any reserve calculations for the Morrison in this quarter
16 section?

17 A. (By Mr. Voigt) No, just due to poor well
18 control, as far as what is -- you know, is currently
19 producing in the Morrison.

20 Q. But it is possible that there are some gas
21 reserves that could be produced from the 27?

22 A. Yes. The A 25 is producing on one of those
23 upstructure areas, and it is currently producing out of the
24 Morrison.

25 Q. What are your plans for the Number 26? It's --

1 More than likely, that well is going to be productive in
2 the Paradox; is that correct?

3 A. Correct.

4 Q. But you've got no intention at this point to make
5 that a Dakota completion?

6 A. No, unless the Paradox -- unless something is
7 wrong with the Paradox in that quarter section.

8 Q. At which point you will recomplete to the Dakota?

9 A. Correct.

10 Q. The southwest quarter of Section 1, why didn't
11 you do any volumetrics or decline-curve analysis?

12 A. I have not performed any on that area, as far as
13 a prepared exhibit.

14 Q. Well, when you decide whether or not you're going
15 to drill the Number 6 well, what is that based on? Is that
16 based on some kind of knowledge of some amount of gas
17 reserves that may be recovered from that well?

18 A. Some of it is based on -- If I remember right, I
19 have done volumetric calculations, I just don't have them
20 with me, on that quarter section. So I don't want to state
21 numbers without having the data with me.

22 Q. Can you supply that to the Division?

23 A. Yes, I can.

24 Q. But at this point, from what you recall, there
25 are economic reserves to be recovered by drilling the

1 Number 6 well?

2 A. Yes, in the fact that you appear to be fault-
3 separated from the other wells in the quarter section.

4 Q. Do you have any ideas what may have occurred to
5 the Number 7 well, to make its production drop so
6 dramatically?

7 A. I have researched the well files, and I have not
8 found anything in there to dictate what might have happened
9 there.

10 Q. Would that well have recovered all of the gas
11 reserves, had it produced at that rate, or not taken that
12 downturn?

13 A. I believe so, yes.

14 Q. At this point, the way the well is producing, for
15 the past decade or so, is it your opinion that it cannot
16 recover all the reserves?

17 A. Correct.

18 Q. And that's why it's necessary to drill the 26
19 well?

20 A. Correct.

21 EXAMINER CATANACH: Are there any other questions
22 of this witness?

23 MR. SIMON: I would really appreciate, Mr. Voigt,
24 if you would send a copy of your calculations there in the
25 southwest quarter to the BLM and to the Tribe as well.

1 THE WITNESS: I will.

2 MR. SIMON: I'd appreciate that very much, sir.

3 MR. BRUCE: Nothing further. Mr. Examiner, one
4 thing with respect to the A 26 well. Although Cross
5 Timbers requested a specific location, we would like a
6 drilling window on that directional well. And I forget
7 what the standard Division window is.

8 EXAMINER CATANACH: Are you talking about within
9 a hundred feet of the bottomhole location, something like
10 that?

11 MR. BRUCE: Something like that. Maybe a radius
12 of 100 or 150 feet, something like that.

13 EXAMINER CATANACH: What are you requesting?

14 MR. BRUCE: Let's make it 150..

15 EXAMINER CATANACH: Mr. Bruce, would you -- just
16 for clarification, would you care to draft me some orders
17 in this case --

18 MR. BRUCE: Sure.

19 EXAMINER CATANACH: -- so I make sure I get
20 everything right? You might provide those also to the
21 tribe and to BLM.

22 With that, is there anything further?

23 MR. SIMON: Just mention that the BLM is the BLM
24 office in Durango, not Farmington.

25 MR. BRUCE: Yeah, that's where the original --

1 MR. SIMON: Right.

2 MR. BRUCE: -- locations were submitted by Cross
3 Timbers, was to the Durango office.

4 EXAMINER CATANACH: Okay. There being nothing
5 further, Cases 12,098, 12,099 and 12,100 will be taken
6 under advisement.

7 MR. SIMON: Mr. Examiner, thank you for giving us
8 an opportunity to participate.

9 EXAMINER CATANACH: You bet.

10 MR. SIMON: We appreciate it.

11 (Thereupon, these proceedings were concluded at
12 10:25 a.m.)

13 * * *

14
15
16 I do hereby certify that the foregoing is
17 a complete record of the proceedings in
the Examiner hearing of Case No. 2098, 2099, 1200
heard by me on Oct 7 1997.
18 David P. Catanch, Examiner
19 Oil Conservation Division
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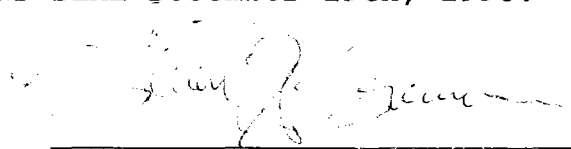
CERTIFICATE OF REPORTER

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 19th, 1998.



STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 2002