

NEW MEXICO OIL CONSERVATION DIVISION

STATE LAND OFFICE BUILDING

STATE OF NEW MEXICO

IN THE MATTER OF:

The Application of Santa Fe Energy
Operating Partners, L.P., for Pool
Contraction and Expansion, Eddy
County, New Mexico.

CASE 10986

The Application of Santa Fe Energy
Operating Partners, L.P., for an
Unorthodox Gas Well Location and
Nonstandard Gas Proration Unit,
Eddy County, New Mexico.

CASE 10987

The Application of Santa Fe Energy
Operating Partners, L.P., for an
Unorthodox Gas Well Location and
Nonstandard Gas Proration Unit,
Eddy County, New Mexico.

CASE 10988

The Application of Santa Fe Energy
Operating Partners, L.P., for an
Unorthodox Gas Well Location and
Nonstandard Gas Proration Unit,
Eddy County, New Mexico.

CASE 10977

The Application of Santa Fe Energy
Operating Partners, L.P., for an
Unorthodox Gas Well Location and
Nonstandard Gas Proration Unit,
Eddy County, New Mexico.

CASE 10989

BEFORE:

JIM MORROW

Hearing Examiner

State Land Office Building

June 9, 1994

COPY

1 Reported by:

2 Carla Diane Rodriguez, CCR
3 State of New Mexico
4 NMCCR No. 4

4

5

A P P E A R A N C E S

6 FOR THE APPLICANT:

7 HINKLE, COX, EATON, COFFIELD & HENSLEY
8 Post Office Box 2068
9 Santa Fe, New Mexico 87504-2068
10 BY: JAMES BRUCE, ESQ.

11 FOR MARATHON OIL COMPANY and
12 NEARBURG PRODUCTION COMPANY:

13 KELLAHIN & KELLAHIN
14 Post Office Box 2265
15 Santa Fe, New Mexico 87504-2265
16 BY: W. THOMAS KELLAHIN, ESQ.

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I N D E X

Page Number

Appearances

2

WITNESSES FOR THE APPLICANT:

1.

GARY GREEN

Examination by Mr. Bruce

5

Examination by Mr. Morrow

11

2.

GENE H. DAVIS

Examination by Mr. Bruce

14, 47

Examination by Mr. Kellahin

25

Examination by Mr. Morrow

35

Certificate of Reporter

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E X H I B I T S

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Exhibit No. 1

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Exhibit No. 2

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Exhibit No. 3

14

Exhibit No. 4

17

Exhibit No. 5

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Exhibit No. 6

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Exhibit No. 7

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Exhibit No. 8A

24

Exhibit No. 8B

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1 EXAMINER MORROW: I'll now call Case
2 10986, and call for appearances.

3 MR. BRUCE: Mr. Examiner, Jim Bruce
4 representing the Applicant. I have two witnesses
5 to be sworn. And I would also ask at this time
6 that this case be consolidated with the next four
7 cases, Case Nos. 10987, 10988, 10989 and 10977.

8 EXAMINER MORROW: All right. That's
9 fine. We will consolidate those cases for
10 purposes of hearing. Would you, Mr. Bruce, go
11 ahead and read the description of those cases for
12 us.

13 MR. BRUCE: Sure. Mr. Examiner, 10986
14 is the application of Santa Fe Energy Operating
15 Partners, L.P., for pool contraction and
16 expansion, Eddy County, New Mexico.

17 The remaining four cases, 10987, 10988,
18 10989 and 10977 are all applications of Santa Fe
19 Energy for unorthodox gas well locations and
20 nonstandard gas proration units in Eddy County.

21 EXAMINER MORROW: I believe there's one
22 other appearance in this case.

23 MR. KELLAHIN: If the Examiner please,
24 I'm Tom Kellahin of the Santa Fe law firm of
25 Kellahin & Kellahin, appearing today on behalf of

1 Marathon Oil Company and Nearburg Exploration
2 Company. I have no witnesses.

3 EXAMINER MORROW: Will the witnesses
4 please stand to be sworn.

5 [And the witnesses were duly sworn.]

6 MR. BRUCE: Call Mr. Green to the
7 stand.

8 **GARY GREEN**

9 Having been first duly sworn upon his oath, was
10 examined and testified as follows:

11 EXAMINATION

12 BY MR. BRUCE:

13 Q. Would you please state your name for
14 the record?

15 A. My name is Gary Green.

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

18 A. I'm a landman for Santa Fe Energy
19 Company.

20 Q. Have you previously testified before
21 the Division as a landman?

22 A. Yes, I have.

23 Q. Were your credentials accepted as a
24 matter of record?

25 A. Yes, they were.

1 Q. Are you familiar with the land matters
2 involved in these five cases?

3 A. Yes, I am.

4 MR. BRUCE: Mr. Examiner, I tender Mr.
5 Green as an expert petroleum landman.

6 EXAMINER MORROW: We'll accept Mr.
7 Green.

8 Q. Mr. Green, first, Case 10986, what does
9 Santa Fe seek in that case?

10 A. Santa Fe seeks to contract the Indian
11 Basin-Upper Pennsylvanian Gas Pool, by deleting
12 from the pool Sections 4 through 8, in Township
13 22 South, Range 24 East, and Section 1 in
14 Township 22 South, Range 23 East, and adding that
15 acreage to the Upper Basin of the Indian
16 Basin-Upper Pennsylvanian Associated Pool.

17 The acreage was once productive in the
18 gas pool, however, recent completions have been
19 oil wells in the interval productive in the
20 Associated Pool.

21 Q. As a result, does Santa Fe believe that
22 additional wells in this area should be governed
23 by the pool rules for the Associated Pool?

24 A. Yes. The transfer of acreage to the
25 Associated Pool will simplify approvals for wells

1 planned in the area by Santa Fe and other
2 operators.

3 Q. What is Exhibit 1?

4 A. Exhibit 1 is the land plat of the area
5 which shows in yellow the six sections that Santa
6 Fe seeks to add to the Associated Pool, and the
7 four proposed well locations.

8 It also shows all the offset operators
9 to the nonstandard unit location applications are
10 identified on the plat.

11 Q. What interests does Santa Fe own in
12 these six sections?

13 A. Santa Fe operates Sections 4 through 8,
14 and owns all the leases except for two 40-acre
15 tracts which are owned by Yates.

16 Q. What about Sections 1 and 6?

17 A. Santa Fe also owns a working interest
18 in Sections 1 and 6. Those sections are operated
19 by Yates Petroleum.

20 Q. How many oil wells on this subject
21 acreage has Santa Fe completed at this time?

22 A. Santa Fe has completed one in the south
23 half of Section 5, one in the south half of
24 Section 8. Both are oil wells.

25 Also, we're currently reentering the

1 well in the north half of Section 8.

2 Q. And Yates is also active in this area,
3 is that correct?

4 A. Yes. Yates has completed one well in
5 Section 6 and also a well down in Section 17.

6 Q. How many additional wells does Santa Fe
7 currently have planned for this acreage?

8 A. Four. In the remaining cases, Santa Fe
9 seeks approval to drill four wells to test the
10 intervals productive in the Associated Pool,
11 which is spaced on 320 acres.

12 Yates has proposed two wells, one in
13 Section 1 and one in Section 6; however, our four
14 proposed wells occur within the boundaries of the
15 gas pool and require approval for nonstandard
16 320-acre units.

17 In addition, all the locations are
18 nonstandard under the special rules for the gas
19 pool, and Santa Fe requests approval of the
20 locations.

21 Q. Now, if the pool contraction and
22 expansion application is granted, should Case
23 10977, which concerns the east half of Section 7,
24 and 10987, which concerns the south half of
25 Section 4 be dismissed?

1 A. Yes. If Sections 4 and 7 are included
2 in the Associated Pool, these well units and
3 locations will then be standard.

4 Q. What about the remaining two cases,
5 10988 and 10989?

6 A. We still need orders on these cases
7 even if the Associated Pool is expanded. The
8 north half of Section 5, Case No. 10988, and the
9 west half of Section 7, Case 10989, are partly
10 comprised of lots that are not standard 320-acre
11 units.

12 Also, the locations are nonstandard by
13 being too close to the quarter/quarter section.

14 Q. Are all of the proposed wells on
15 federal land?

16 A. Yes.

17 Q. And has the BLM changed any of your
18 originally requested well locations?

19 A. Yes, they have. As a matter of fact,
20 yesterday the BLM changed two locations for us or
21 on us. Case No. 10987, the south half of Section
22 4, the new location is 660 from the south line
23 and 2300 from the west line. This is a standard
24 location for a 320-acre unit.

25 Case No. 10989, the west half of

1 Section 7, the new location is 1600 feet from the
2 north line and 1400 feet from the west line, and
3 this location is nonstandard for both 320 and
4 640-acre units.

5 MR. BRUCE: Mr. Examiner, because of
6 that, I believe Case 10989 would have to be
7 readvertised, because it is changed to, probably,
8 a more unorthodox location.

9 EXAMINER MORROW: Was it already
10 unorthodox?

11 MR. BRUCE: It was already unorthodox.

12 EXAMINER MORROW: For my education, why
13 do you feel that way? Offset notice?

14 MR. BRUCE: Really, just for the
15 advertisement, I think. I think we had
16 originally requested 1650 feet from the west
17 line.

18 EXAMINER MORROW: And it's going 1400?

19 MR. BRUCE: Yes.

20 EXAMINER MORROW: All right. Go
21 ahead.

22 Q. (BY MR. BRUCE) Finally, Mr. Green, was
23 notice of the pool contraction/expansion
24 application given to all operators in both the
25 gas pool and the Associated Pool?

1 A. Yes, they were.

2 Q. Was notice of each nonstandard unit and
3 nonstandard location application given to the
4 offsets of each section?

5 A. Yes. Exhibit 2 is my affidavit
6 regarding notice of all applicants.

7 Q. And you rolled all of the notice
8 applications into one letter?

9 A. Yes, I did.

10 Q. In your opinion, is the granting of
11 these five applications in the interest of
12 conservation and the prevention of waste?

13 A. Yes.

14 Q. Were Exhibits 1 and 2 prepared by you
15 or under your direction?

16 A. Yes, they were.

17 MR. BRUCE: Mr. Examiner, I move the
18 admission of Santa Fe Exhibits 1 and 2.

19 EXAMINER MORROW: 1 and 2 are
20 admitted.

21 EXAMINATION

22 BY EXAMINER MORROW:

23 Q. Are wells currently completed in each
24 of the sections, Mr. Green, in the oil section?
25 I know you went through that, but I didn't--

1 A. No, sir. Santa Fe has a well completed
2 in the south half of Section 8, the Old Ranch
3 Knoll No. 2.

4 We have a well completed in the south
5 half of Section 5, which is the Nagooltee Peak
6 Federal No. 2. We're currently reentering a well
7 in the north half of Section 8.

8 Q. Section what?

9 A. Section 8. In the oil pool, there are
10 no wells in Sections 4 or 7. There's currently
11 one in Section 6 that's operated by Yates
12 Petroleum. So, there's no production from the
13 oil pool in Sections 4 or 7 at this time, or 1.

14 Q. Now, the oil completions that are
15 there, what pool are they assigned to at this
16 time?

17 MR. BRUCE: I looked at the well files,
18 Mr. Examiner, and there were some notations on
19 the C-104s, I think notations by the OCD, that
20 they were designated as oil wells in the gas
21 pool, so I believe they were assigned to the
22 Indian Basin-Upper Penn gas.

23 EXAMINER MORROW: Okay.

24 Q. (BY EXAMINER MORROW) Now, these wells
25 shown on Exhibit 1, are they some of those

1 wells?

2 A. No, sir. The wells shown with the red
3 squares, those are the wells that we propose to
4 drill. They are shown on this plat, but they're
5 real small and they're shown as locations on this
6 plat. The Old Ranch Knoll No. 2 is located there
7 in the southeast of the southwest quarter, and
8 the Nagooltee Peak 5 No. 2 is located in the
9 southeast quarter of Section 5.

10 Q. Do you have an extra copy of your notes
11 you were testifying from?

12 A. Yes, sir, I do.

13 Q. I would request that you let me have a
14 copy of that.

15 A. Okay.

16 EXAMINER MORROW: Thank you, sir.
17 Anything more?

18 MR. BRUCE: Nothing from this end.

19 EXAMINER MORROW: Mr. Kellahin, did you
20 have questions?

21 MR. KELLAHIN: No, sir.

22 EXAMINER MORROW: Thank you, then.

23 **GENE H. DAVIS**

24 Having been first duly sworn upon his oath, was
25 examined and testified as follows:

EXAMINATION

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BY MR. BRUCE:

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

A. My name is Gene Davis. I live in Midland, Texas.

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

A. I'm the division geological/geophysical manager for Santa Fe Energy Resources.

Q. Have you previously testified before the Division as an expert petroleum geologist?

A. Yes, I have.

Q. Were your credentials accepted by the Examiner as a matter of record?

A. Yes, they were.

Q. Are you familiar with the geology involved in all five of the applications?

A. Yes, sir, I am.

MR. BRUCE: Mr. Examiner, I tender Mr. Davis as an expert petroleum geologist.

EXAMINER MORROW: Fine. Mr. Davis is accepted as a petroleum geologist.

Q. Would you refer to Santa Fe's Exhibit 3, identify it for the Examiner, and discuss the

1 color scheme for the Examiner?

2 A. Certainly. Mr. Examiner, Exhibit 3 is
3 a land map of what we call the Saginaw Prospect.
4 It is the south portion of the Indian Basin field
5 area.

6 I'll just go through the color scheme
7 with you first. Basically, it depicts the
8 acreage dedications for the Southeast Indian
9 Basin pools. The yellow acreage is acreage that
10 is currently dedicated to the Indian Basin-Upper
11 Penn Gas Pool. The acreage that is shown in
12 orange is acreage that is dedicated to the Indian
13 Basin-Upper Penn Associated Oil and Gas Pool.

14 The acreage that is shown with a green
15 cross-hatch over the yellow, that acreage is
16 acreage that was originally dedicated to the
17 Indian Basin-Upper Penn Gas Pool, and this is the
18 acreage that Santa Fe is requesting to have
19 transferred to the Indian Basin-Upper Penn
20 Associated Oil and Gas Pool.

21 That acreage would include, of course,
22 the south half of Section 8 and the south half of
23 Section 5, which is shown in green on this plat.
24 That is because that acreage is productive from
25 the Indian Basin-Upper Penn Associated Gas Pool,

1 even though that is currently acreage that is
2 classified to be in the Indian Basin Gas Pool,
3 where you have oil wells producing in the gas
4 pool.

5 The discovery well for the Indian Basin
6 Associated Pool is located in the north half of
7 Section 17. That is the well that has the star
8 around it. It would be the farthest south block
9 of the acreage that is colored green. That is
10 the Yates Petroleum Company Hickory ALV Fed No. 1
11 well, which was a reentry of an old Pan American
12 well that was plugged and abandoned in 1965 and
13 then recompleted by Yates in December of 92 as a
14 Morrow well, and additionally completed as a dual
15 completion from the Canyon formation in June of
16 93.

17 Q. What are the red squares, Mr. Davis?

18 A. The red squares are the well locations
19 that Santa Fe Energy is requesting to have
20 approved in the hearing. There are two in
21 Section 7, one in Section 4, and one in the north
22 half of Section 5.

23 The additional red square that is shown
24 in the north half of Section 8 is a well we are
25 currently reentering. It is an old Amoco and/or

1 Trigg well. We call it the Old Ranch Knoll 8 No.
2 1. It is a well that had been productive from
3 the Indian Basin Gas Pool. It was plugged and
4 abandoned in 1982, and we're reentering that
5 well, trying to make a completion in the lower
6 pool of the Indian Basin Associated Pool.

7 What you'll notice, in all of the well
8 locations shown on the acreage that we're
9 interested in here, we have shown the name of the
10 well, also the operators, and I've shown the
11 dates the wells were plugged and abandoned and
12 recompleted or completed, whatever the case may
13 be.

14 Q. Why don't you move on to your Exhibit 4
15 and identify that for the Examiner and discuss
16 its contents.

17 A. Exhibit 4 is a structural cross-section
18 across the area. The line of that cross-section
19 is shown on all of the maps that I'll talk about
20 here in the hearing. You can see that
21 cross-section is shown on Exhibit 3 rather well.
22 It snakes across the acreage from north to south
23 and is labeled A to A', HRG. It's a long
24 cross-section; I apologize.

25 This is a structural cross-section,

1 basically running from south to north, south
2 being on the left-hand side of the cross-section.
3 It is hung on a subsea datum of minus 3700 feet.

4 On the left, on the south, is the
5 discovery well, which is the Yates Hickory ALV
6 well, the No. 1 well. Along the top of the
7 cross-section are the well names for all the
8 wells that are in the cross-section.

9 You'll see that there are five wells
10 that have red squares with a circle on top of
11 them. Those are the wells--four of them are
12 wells that Santa Fe Energy is proposing to drill
13 along the subject acreage. The fifth one, which
14 is located on the northern end of the
15 cross-section, is a well that Yates Petroleum
16 plans to drill in Section 1, the Zingaro ANG Fed
17 No. 1.

18 There are a number of lines on the
19 cross-section, just to orient you. There's a
20 datum of minus 3700 feet. The very top line is
21 the line that delineates the top of the Cisco
22 Canyon dolomite. The basal line, or the base of
23 the Cisco Canyon dolomite, again is another
24 irregular line which trends across the
25 cross-section. And then there are two structural

1 lines shown that are very horizontal lines, minus
2 3754 and 4757.

3 Minus 3754 is what I interpret to be
4 the top of the Indian Basin-Upper Penn Associated
5 Pool, the top of the interval that would be
6 productive of oil and gas and water. Above that
7 point, you'll notice that the reservoir is
8 colored red. That is the Indian Basin-Upper Penn
9 Gas Pool. Within that zone, wells completed
10 there produce gas and water and a condensate,
11 with a degree of gravity of 59 to 62 degrees.

12 The green pool, the Indian Basin-Upper
13 Penn Associated Pool, it produces gas and oil and
14 water as well, the oil having a 42-degree
15 gravity.

16 Q. How many wells are currently completed
17 in the Associated Pool?

18 A. Currently, there are five wells that
19 are actually producing from the--maybe, actually
20 six wells that are actually producing from the
21 pool. In the area where we are located, there
22 are four: The Hickory ALV, operated by Yates;
23 the Nagooltee Peak 5 No. 1, operated by Santa Fe;
24 the Old Ranch Knoll 8 No. 2, operated by Santa
25 Fe; and the Yates Brannigan ANF Fed No. 1 well,

1 operated by Yates again. That's in Section 6.

2 I want to call your attention to the
3 Brannigan well, the well located, the second well
4 on the right-hand side of the cross-section.
5 It's a Yates well. Yates reentered an old
6 Amoco/Trigg well, the Federal IB 1-6 well and
7 renamed it the Brannigan ANF Fed No. 1.

8 On that well, I've shown you that that
9 well is productive from the entire interval, as
10 indicated by the black markings down the center
11 of the log.

12 EXAMINER MORROW: Which well is that?

13 THE WITNESS: That's the Yates
14 Brannigan ANF Fed No. 1, on the right-hand side
15 of your cross-section.

16 A. You'll notice it's producing from perfs
17 all the way down in the upper pool, the gas pool,
18 the red area, and also down into the green pool,
19 the Indian Basin-Upper Penn Associated Pool.
20 This well was originally completed as a gas well
21 from perforations at 7430 down through 7554, and
22 made a very good gas producer, but was plugged
23 and abandoned because of water production in
24 December of 86.

25 It was then reentered and recompleted

1 by Yates in October of 93, from perforations
2 ranging from 7430 all the way down to 7896. It
3 potentialed, producing 10 barrels of oil, 1.7
4 million cubic foot of gas, and 4633 barrels of
5 water per day. The gravity of the crude was
6 estimated at 42 and not 59, which reflects the
7 production of oil from that Indian Basin-Upper
8 Penn Associated Oil and Gas Pool.

9 Q. You mentioned six wells in this area
10 had been completed in the Indian Basin-Upper Penn
11 gas pool. These are reflected on this
12 cross-section, are they not?

13 A. They are. They're all shown having gas
14 symbols with a slash through them.

15 Q. Were they all plugged and abandoned?

16 A. Yes, they've all been plugged and
17 abandoned at this point, except for the Brannigan
18 well, which has been reentered.

19 Q. When were they plugged?

20 A. All of the wells that were producing
21 from the Indian Basin Gas Pool were all plugged
22 in the early to middle 80s. They were plugged
23 because they were producing a large volume of
24 water, which was making the wells uneconomical to
25 operate. So all of the operators plugged those

1 wells.

2 Q. Mr. Davis, let's move on to your
3 Exhibits 5, 6 and 7. Why don't you introduce
4 these exhibits and go over them briefly.

5 A. Okay. Exhibit No. 5 is a structure map
6 on top of the Cisco Canyon dolomite. Exhibit No.
7 6 is an isopach map of the Cisco Canyon dolomite
8 interval itself. That would be the entire
9 reservoir interval. That would include both the
10 Indian Basin Gas Pool and the Indian Basin
11 Associated Oil and Gas Pool.

12 And the last exhibit, Exhibit No. 7, is
13 the gross dolomite isopach of just the Upper Penn
14 Associated reservoir, the actual pool that we're
15 attempting to transfer the acreage into.

16 All of these maps have the same basic
17 legend across the bottom. The red squares,
18 again, are the proposed locations. The stippled
19 acreage is acreage Santa Fe has an interest in,
20 and there are a number of symbols to indicate
21 whether they are Cisco Canyon gas producers that
22 were in the Indian Basin gas field. Those are
23 shown by the six point star.

24 The Cisco Canyon oil producers are
25 shown as a green triangle.

1 Going back to the map, Exhibit No. 5,
2 the structure map, you can see that across the
3 acreage we are basically trending updip, going
4 from south to north, ranging from about minus
5 4050 feet up to a high of minus 3500 or 3450 feet
6 or so.

7 The isopach map of the Cisco Canyon
8 dolomite, Exhibit No. 6, shows that you have a
9 marked thickening of the reservoir interval from
10 south to north as well, across the acreage
11 position, ranging from zero on the south up to
12 greater than 700 feet in thickness.

13 The last map, the gross dolomite
14 isopach of the Upper Penn Associated Reservoir,
15 this shows rather well that the thickness of this
16 particular oil and gas pool ranges from zero,
17 along the south end of the acreage position, or
18 the acreage we wish to have transferred, to
19 greater than 300 feet up on the north end.

20 By using this particular map in
21 conjunction with the cross-section, A to A', you
22 can see that the Upper Penn Associated Pool
23 extends all the way underneath the acreage that
24 we intend to drill on, and this is one of the
25 reasons we would like to have the acreage

1 transferred to that pool, because we do see the
2 presence of that pool underneath that acreage.

3 Q. Do you believe it's easier to exploit
4 the oil pool by using the Associated Pool rules?

5 A. Yes, I do. It allows for the uniform
6 development of the field itself, and gives us the
7 flexibility of using those rules for that
8 process.

9 Q. What are Exhibits 8A and 8B?

10 A. 8A and 8B, these are the completion
11 reports on the two wells that Santa Fe operates
12 in the subject acreage. The first, Nagooltee
13 Peak 5 Federal No. 1, and 8B is the Old Ranch
14 Knoll Fed Com No. 2. You can look at the
15 production from those wells on test and see
16 they're clearly oil wells. The Nagooltee Peak
17 testing for 531 barrels of oil per day, while the
18 Old Ranch Knoll tested for 401 barrels of oil per
19 day.

20 Q. In your opinion, is the granting of
21 these five applications in the interest of
22 conservation, the prevention of waste, and the
23 protection of correlative rights?

24 A. Yes, it is.

25 Q. Were Exhibits 3 through 8 prepared by

1 you or under your direction?

2 A. Yes, they were.

3 MR. BRUCE: I move the admission of
4 Santa Fe Exhibits 3 through 8.

5 EXAMINER MORROW: 3 through 8 are
6 admitted. Go ahead, sir.

7 MR. KELLAHIN: If you please, Mr.
8 Examiner.

9 EXAMINATION

10 BY MR. KELLAHIN:

11 Q. Mr. Davis, let me ask you some points
12 of clarification, if I may.

13 A. Certainly.

14 Q. Are you familiar with the Indian
15 Basin-Upper Penn Gas Pool rule?

16 A. I think so.

17 Q. Are you also familiar with the Indian
18 Basin Associated Pool rules for that Upper Penn
19 pool?

20 A. I think so, yes.

21 Q. The well locations for the gas pool
22 have a setback of 1650 from the side boundaries
23 of the section?

24 A. To the best of my recollection, that's
25 correct.

1 Q. The Associated Pool, you can be as
2 close as 790 to the outer boundary of the spacing
3 unit?

4 A. I would have to check.

5 Q. Subject to check, do you see any
6 reason, as we have the Gas Pool contiguous with
7 the Associated Pool, to have any special rules
8 along the buffer or the boundary where the two
9 pools come together?

10 A. I don't really see any reason to do
11 that.

12 Q. You don't see a problem with having the
13 oil wells, if you will, the Associated Pool
14 wells, being 790 from a gas pool, where the gas
15 wells have to be 1650 from that common boundary?

16 A. Speaking as a geologist, I don't think
17 so, based on the fact that the pools are so
18 different. The way the perforations are
19 generally in the pools, they're so different, and
20 one is much deeper than the other.

21 Q. Have you had discussion with other
22 operators of acreage and wells in this area?

23 A. I've had some discussions with Yates
24 and a couple of conversations with Marathon.

25 Q. Was that an issue of concern to

1 anybody?

2 A. It's never come up at all.

3 Q. What do you do about the current oil
4 wells in the gas pool, in terms of their
5 producing oil allowable? Do you know?

6 A. I believe there's an allowable set
7 for--well, for the current oil wells producing in
8 the gas pool, I don't know that there's any
9 subject on the allowable at all.

10 Q. You don't know whether they're applying
11 a depth bracket oil allowable?

12 A. I would imagine that's what they're
13 doing. I'm not sure.

14 Q. You don't know what acreage they're
15 applying to that calculation?

16 A. No, I do not.

17 Q. Do you know whether any of the oil
18 wells are curtailed or limited by an allowable?

19 A. Not that I'm aware of. The two wells
20 that Santa Fe operates currently, we've just put
21 one on production, the 8-1. The 5-1 is not tied
22 into a pipeline yet.

23 Q. Do you know what the allowable would be
24 for those wells in the Associated Pool?

25 A. The allowable for those wells in the

1 Associated Pool, I believe, is 920 barrels of oil
2 per day.

3 Q. And, under the associated rules, you
4 could have two oil wells in a 320?

5 A. That's correct.

6 Q. Each well located in a different 160?

7 A. That's correct.

8 Q. So that's a little different than what
9 we have for the South Dagger Draw?

10 A. It is a little different than what is
11 in the South Dagger Draw. The South Dagger Draw,
12 you're allowed to drill as many wells as you want
13 as long as you stay under the allowable for that
14 320-acre proration unit, so the rules are
15 slightly different, yes.

16 Q. You commented to Mr. Bruce that there
17 was a flexibility, an advantage, to having these
18 wells in the Associated Pool as opposed to the
19 Gas Pool?

20 A. Being in the Associated Pool, you would
21 obviously be able to drill more wells in that
22 particular section, to drill for that pool. You
23 would have the opportunity of drilling,
24 basically, four wells. You would have two wells
25 each on a 320-acre proration unit. You would

1 have more wells into the Associated Pool, that's
2 correct.

3 Q. That's the basis for having you make
4 that statement, then, that the Associated rules
5 is better applied to these wells in this area
6 than the Gas Pool rules?

7 A. These wells are oil wells, not gas
8 wells, so I believe they should have oil pool
9 rules applied to them.

10 Q. You can have oil wells in a gas pool?

11 A. Yes, you can. That's correct.

12 Q. When we look at the acreage in Section
13 4 of 22/23, that is one of the proposed sections?

14 A. Section 4, 22/24.

15 Q. Yes. It's the westernmost Section 1?

16 A. Yes.

17 Q. That section does not have an oil well
18 in it yet?

19 A. No, it does not.

20 Q. What is your argument or basis to have
21 that section deleted from the Gas Pool and put in
22 the Associated Pool?

23 A. Based on the geology shown on the gross
24 dolomite isopach for the Upper Penn Associated
25 Reservoir.

1 Q. Exhibit 7?

2 A. Exhibit 7, yes, sir. You use that in
3 conjunction with Exhibit No. 4, which is the
4 cross-section that goes across there. You'll see
5 that, based on my work, there is between 200 and
6 300 foot of reservoir that would be within the
7 reservoir column for the associated pool, across
8 that acreage. It's my opinion that a well
9 drilled in Section 4 would encounter that pool,
10 the Associated Pool, and you could produce oil
11 from that pool underneath that acreage.

12 Q. Okay. If you're wrong and it's a gas
13 well, what do you do?

14 A. I guess, if you were to drill the first
15 well in there and you were wrong, and you ended
16 up completing a gas well, you would have to come
17 back to the Commission and ask to get the rules
18 applied for it, or file the sundry notices that
19 are necessary to get it produced. But you would
20 obviously not be able to go in and drill an
21 additional set of wells, more wells in there as
22 oil wells.

23 Q. In the Associated Pool, in this
24 particular pool, are you subject to the
25 preclusion whereby you cannot simultaneously

1 dedicate the same acreage to a gas well as well
2 an oil well? Do you have that in this pool?

3 A. Ask your question again, please.

4 Q. Sure. Under the general Associated
5 Pool rules, unless they've been specifically
6 amended, you are precluded from having the same
7 acreage dedicated to a gas well and an oil well
8 in the same reservoir. So, for example, in the
9 north half of Section 1, if you drill a gas well,
10 you're stuck, unless you shut that gas well in
11 and drill an oil well? You can't produce gas in
12 an oil well in the north half of Section 1. Are
13 you with me?

14 A. Based on the associated rules?

15 Q. Yes, sir.

16 A. That would be correct. You would have
17 to put it back in the Indian Basin Gas Pool.

18 Q. Or do something else. You're aware of
19 that potential issue?

20 A. Yes, I am.

21 Q. All right. Based upon your geologic
22 interpretation for the inclusion of Section 1,
23 how do you draw a distinction between Section 1
24 and Section 12 to the south?

25 A. It would be my opinion that, at some

1 point, Section 12 would probably also--wells that
2 were completed in Section 12, from that lower
3 interval, from the Indian Basin Associated Pool,
4 that acreage would have to be put into that pool
5 as well, because I believe that reservoir is
6 underneath that acreage.

7 Q. What we have here is, as the gas cap is
8 depleted and shrunk, you have the opportunity to
9 replace the gas production with production out of
10 the oil column? Am I visualizing this correctly?

11 A. The way I envision it, Mr. Kellahin, is
12 that there is--actually, an oil reservoir has
13 been sitting underneath the gas pool for many
14 years, it just has never been tapped in this
15 particular area.

16 There were a number of wells that
17 showed oil and gas shows from this particular
18 interval over the years, but the operators never
19 attempted completion attempts from them. Only
20 since Yates completed the Hickory well and the
21 reentry of the Pan Am well, have we begun to
22 understand that this reservoir actually exists
23 underneath this portion of the pool, and that's
24 why we're now going back into this area and we're
25 able to drill the wells or reenter wells and

1 complete them from this lower interval.

2 Q. Is it your geologic conclusion that the
3 gas pool is connected to the oil pool?

4 A. I don't know that.

5 Q. From the geology, can you show a
6 separation?

7 A. No, I cannot.

8 Q. There were two other sections that
9 don't yet have oil wells in them, Section 4--

10 A. --and Section 7.

11 Q. Yes, sir. Let's look at Section 4
12 first. Give me your summary of why you propose
13 to put Section 4 into the oil pool.

14 A. As I said before, Section 4, as I look
15 at the geology, based on my mapping of the Upper
16 Penn Associated reservoir, that dolomite
17 interval, in conjunction with the cross-section
18 that I furnished, it's my opinion that there is
19 between--ranging from 100 to 300 foot of section
20 of dolomite interval there that is within the
21 boundaries of what I interpret to be the Upper
22 Penn Associated Oil and Gas Pool, and I believe
23 that reservoir underlies that portion of that
24 section.

25 Q. And that same conclusion supports your

1 request to add Section 7?

2 A. Yes, sir, it does.

3 Q. Does this map illustrate the limits of
4 the Associated or the Oil Pool, as you move to
5 the west?

6 A. As you move to the west?

7 Q. Yes, sir.

8 A. It maps--I think what the pool's
9 definition is, you go to the west edge of this
10 map. It may go farther to the west, but I don't
11 have it shown on this.

12 Q. There's no reason to believe that the
13 oil reservoir stops at the western boundary of
14 this display?

15 A. Not in my opinion, no. It is certainly
16 thinning in portions of it.

17 Q. Do you have an opinion as to where the
18 water column is? Is there a location of a
19 water/oil contact or a water/gas contact in the
20 reservoir?

21 A. I've arbitrarily used a minus 4057 for
22 the base of the Upper Penn Associated Oil and Gas
23 Pool. That is just--I'm using that based on
24 wells tested in the area. It seems that when you
25 get below a subsea of minus 4057, as you test the

1 interval, the Cisco Canyon dolomite beneath that
2 structural position, it tends to be productive,
3 mostly of water, with a little bit or trace of
4 oil.

5 There are a couple of wells that have
6 been tested that way: The Hickory well, our 8
7 No. 2 well and a few wells to the east of us.
8 The wells that have tried to complete from that
9 interval, below minus 4057, produce in general
10 almost all water.

11 Once you get above that, you start
12 seeing oil. I don't know that there is a
13 definable oil/water contact. I've not seen one
14 in any of the tests or the production information
15 that I've reviewed.

16 Q. We see the interpretation of that minus
17 4057 line on your Exhibit No. 5?

18 A. Yes, you do. It's the lower horizontal
19 line on that cross-section.

20 MR. KELLAHIN: Thank you, Mr. Davis;
21 Mr. Examiner.

22 EXAMINATION

23 BY EXAMINER MORROW:

24 Q. Mr. Davis, what are the pool rules for
25 the Associated Pool that you propose to put these

1 sections into?

2 A. The pool rules?

3 Q. Yes, sir.

4 A. Would you mind if I get the list and
5 consult them? Or would you like me to summarize
6 the best I know them?

7 Q. Summarize.

8 A. My understanding of the rules is that
9 the Associated Pool is based on 320-acre spacing
10 with the opportunity to drill on 160-acre spacing
11 no more than two wells per proration unit.

12 You have production of 960 barrels of
13 oil per day, I believe, maximum from the
14 proration unit, with a GOR of 2,000.

15 Q. 920 a day?

16 A. It's 960 a day, I believe.

17 Q. For each proration unit?

18 A. That's correct. And I believe wells
19 can be drilled within 660 feet from the outer
20 boundary of the section's spacing unit, and
21 cannot be closer than 330 feet to any
22 quarter/quarter section.

23 Q. What was the 790 that you and Mr.
24 Kellahin discussed?

25 A. That's the number Mr. Kellahin-- I

1 don't think it was 790. I think it is 660 from
2 the outer boundary.

3 MR. KELLAHIN: You may have
4 misunderstood. The 790 applies to the South
5 Dagger Draw, and this Upper Penn Associated may
6 be entitled to 660.

7 THE WITNESS: I believe it's 660.

8 Q. When the pool was initially created,
9 was each section developed at that time, or were
10 there some non-oil-producing sections included in
11 the Associated Pool at the time it was created?

12 A. At the time it was created, my
13 understanding was that Section 17 was put in the
14 pool. And then, basically, on half-mile spacing,
15 anything touching it within a mile of that
16 particular north half 320 acres would be put in
17 the pool.

18 After consultation with my lawyer, I
19 understood that the actual acreage that had been
20 dedicated to the Upper Penn Associated Pool was
21 all of Section 27 of 21 South, 24 East, I believe
22 all of Section 34 of 21/24, and portions of
23 Section 3, 10, 9, 16 and 17 of 22/24.

24 That was the only acreage that had been
25 dedicated to the Indian Basin-Upper Penn

1 Associated Pool. There are only three wells that
2 have been completed from that pool within that
3 acreage. There was one in Section 17 of 22/24,
4 there's one in Section 27 of 21/24, and I believe
5 there's one in Section 3 of 22/24. All of those
6 wells are operated by Yates.

7 Q. So there are sections now included in
8 this Associated Pool--

9 A. That do not have production.

10 Q. --that do not have production on them?
11 Is that what you're saying?

12 A. That do not have production, that is
13 correct, Sections 9, 10, 16 and 34.

14 Q. On Exhibit No. 3, I understand there's
15 currently oil production in Sections 8 and 5, and
16 there's not any in 1, 7 and 4, is that correct?

17 A. That's correct. There is oil
18 production in Section 6.

19 Q. Where is that?

20 A. That would be the Yates Petroleum
21 Brannigan ANF Federal No. 1 well, in the
22 northwest of the northwest of that section. It's
23 shown as a gas well gas well.

24 Q. Recompleted 10/18/93?

25 A. That is correct.

1 Q. Is that an oil well now?

2 A. That well is currently producing mostly
3 gas, it does produce some oil. It produces about
4 10 barrels of oil per day. The oil's estimated
5 gravity is 42, which is the gravity of the crude
6 oil produced in the Indian Basin-Upper Penn
7 Associated pool.

8 The oil that was produced with gas
9 production in the Indian Basin Gas Pool had a
10 gravity of between 59 and 62 degrees.

11 Q. Is that shown on the cross-section?

12 A. It's the second well in on the
13 cross-section, from the right-hand side.

14 Q. It's making a million-seven a day now?

15 A. Yeah, right around two million a day,
16 according to the operator, and about 10 to 15
17 barrels of oil. Santa Fe has a 6.25 percent
18 interest in that well, a working interest, so we
19 do have a lot of knowledge of the reservoir of
20 the completion attempt in that well.

21 I understand when Yates went in and
22 completed that wellbore, they tested their way,
23 starting with the bottom perfs, and worked their
24 way up. The original perfs were the perfs of the
25 upper portion. They blanked off those perfs, or

1 set them off with a cast-iron bridge plug and
2 tested the lower interval, and they recovered
3 about 50 to 60 barrels of oil per day on a
4 swabbing test, and that oil was about 42-degree
5 gravity crude oil from the lower interval.

6 But, when they made their completion in
7 the entire wellbore, they elected to include all
8 of the perforations that were possible in that
9 wellbore. I don't know whether they had problems
10 shutting off the upper perms or were reluctant to
11 squeeze those perms. At any rate, they elected
12 to complete the wellbore as shown, and that
13 resulted in having a more productive gas well
14 than anything else; some oil, but mostly gas.

15 In my discussions with the operator,
16 they have no intentions of ever completing a well
17 like that again because they did not get the
18 results that they wanted.

19 Q. Which was what?

20 A. They did not get the results that they
21 intended to have, which were the type of results
22 that they had in the Hickory well and Santa Fe
23 has been able to effect in both of our
24 completions in Section 5 and Section 8.

25 Q. I guess, since it's making nearly two

1 million a day, that would indicate that there's
2 still some gas to be recovered, at least from
3 that part of your proposal?

4 A. Yes, sir. It would be--in my mind, I
5 think if you were to go in here and take a well
6 and just complete it from the Upper Penn
7 reservoir, the gas zone, and put it on a
8 submersible pump, you would be able to produce
9 gas with a large volume of water as well. So,
10 there is gas left there, yes.

11 Q. Are they pumping this one?

12 A. Yes, they are. They have a submersible
13 pump on there in order to produce it.

14 Q. It's making how much water?

15 A. It's making close to 4,000 barrels of
16 water per day.

17 Q. 4,000 a day?

18 A. Yes, sir.

19 Q. I guess that would indicate some
20 connection with the gas cap, at least in those
21 upper perforations, that part of it?

22 A. Yes. There is still gas reservoir
23 present across this acreage position. But there
24 is also the presence of this lower pool as well.

25 Q. Yes, sir. So, when you answered his

1 question, you were talking about the connection
2 between the lower intervals that primarily
3 produce oil and gas now?

4 A. There's certainly a spatial
5 relationship, the fact that they're producing
6 from the same section of dolomite, the Cisco
7 Canyon. Whether or not there's any engineering
8 connection between the two, whether there's
9 actually a physical connection between the
10 reservoir, I'm not an engineer and I can't speak
11 to that.

12 EXAMINER MORROW: Do you all plan to
13 put on anything concerning the justification for
14 the nonstandard location?

15 MR. BRUCE: I meant to follow-up with
16 the topographic. I had forgotten that, Mr.
17 Examiner.

18 EXAMINER MORROW: Were you going to do
19 that?

20 MR. BRUCE: Yes.

21 FURTHER EXAMINATION

22 BY MR. BRUCE:

23 Q. Mr. Davis, looking at your Exhibit 7, a
24 few questions we had omitted to discuss. We had
25 discussed or mentioned in the applications the

1 topographic reasons for the nonstandard
2 locations. Could you first address that?

3 A. Mr. Examiner, the topography across
4 this acreage position is rather rugged, with
5 relief ranging in the order of 300 to 400 feet in
6 places across this acreage position. In a number
7 of locations here, the particular location may
8 have, across the 600 foot drill site pad, it can
9 have relief of easily 100 feet.

10 The BLM is very cognizant of this, and
11 they are very critical as to how much acreage we
12 cut and fill in a particular location that we
13 design out here. So, a number of our locations
14 or all of our locations take into account the
15 extreme topography in the area. We try to find
16 the flatest area to work in, because it costs
17 less for us as an operator and also because the
18 BLM wants us to refrain from cutting and filling
19 very much in this area.

20 So, there is a large amount of
21 topography we have to deal with here.

22 Q. So the BLM, in its environmental
23 assessments, has required or limited the well
24 locations that Santa Fe can have?

25 A. Every location we have out here, the

1 BLM representative, Barry Hunt, in their Carlsbad
2 office, goes out and inspects and is very
3 critical of where we put our locations.

4 EXAMINER MORROW: So all your reason
5 for the nonstandard location is strictly surface?

6 THE WITNESS: It would be strictly
7 surface at this point, yes, sir.

8 EXAMINER MORROW: Go ahead, Mr. Bruce.

9 Q. (BY MR. BRUCE) Mr. Davis, as far as
10 locations, you would like to keep the well spaced
11 far enough apart so you can have, geologically,
12 four wells per section, is that correct?

13 A. We feel we can do that, yes, sir. The
14 topography will allow that.

15 Q. If I could follow up on a couple of
16 questions Mr. Kellahin asked about Sections 4 and
17 7, Mr. Davis, as Mr. Kellahin said, there are no
18 oil wells on that acreage?

19 A. That is correct.

20 Q. But they did have gas wells on that
21 acreage which were plugged and abandoned, is that
22 correct?

23 A. Yes. Both sections had one gas well
24 per section.

25 Q. Which watered out?

1 A. They were plugged in 1982 and 93; 4 in
2 82, 7 in 83, both because of water production.

3 Q. One final question. Discussing the
4 flexibility of the Associated Pool rules,
5 obviously, if this acreage is transferred to the
6 Associated Pool, it will lessen the need to come
7 back for hearings for nonstandard locations and
8 nonstandard units, is that correct?

9 A. That's correct, it would.

10 MR. BRUCE: Thank you, Mr. Examiner.

11 EXAMINER MORROW: The proration unit
12 size, what was the nonstandardness of those
13 applications? I guess each one of the
14 applications also contained nonstandard gas
15 proration unit. Was that strictly because of the
16 size?

17 MR. BRUCE: Mr. Examiner, there are two
18 reasons. If we're seeking 320-acre units,
19 obviously that conflicts with the gas pool rules
20 which have 640-acre spacing. In addition, all
21 the sections on the north tier are comprised
22 partly of lots, and some of these sections are
23 660, 670 acres. So, even if it was Associated
24 Pool rules, you're having 360 or 370-acre units
25 which are, obviously, nonstandard.

1 EXAMINER MORROW: One of them, I think,
2 was even short, wasn't it?

3 MR. BRUCE: Yes, the west half of
4 Section 7 is a short section, yes.

5 EXAMINER MORROW: West half? Is that
6 what you said?

7 MR. BRUCE: Yes, sir.

8 EXAMINER MORROW: In 7, you would
9 divide that east and west proration unit?

10 MR. BRUCE: Yes, sir.

11 EXAMINER MORROW: Mr. Bruce, will you
12 take care of the readvertising on 10989?

13 MR. BRUCE: Yes, sir.

14 EXAMINER MORROW: Thank you, sir.

15 MR. BRUCE: I have nothing further in
16 this matter, Mr. Examiner.

17 EXAMINER MORROW: All right. We'll
18 take Cases 10986, 10987, 10988 and 10977 under
19 advisement, and we'll continue Case 10989 for two
20 weeks.

21 (And the proceedings concluded.)

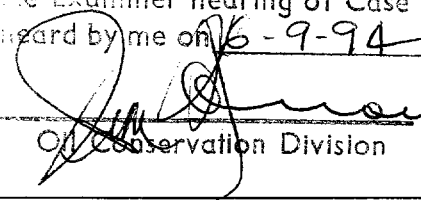
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I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 10986, 8788, 77, + 10989
heard by me on 6-9-94 1994.


Examiner
Oil Conservation Division

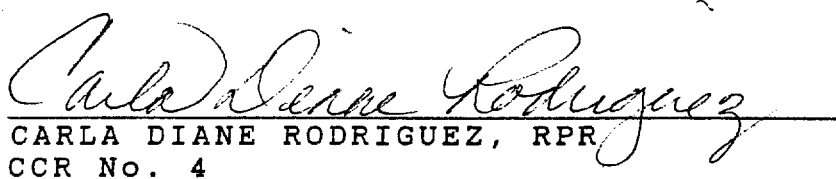
1 CERTIFICATE OF REPORTER

2
3 STATE OF NEW MEXICO)
4) ss.
5 COUNTY OF SANTA FE)

6 I, Carla Diane Rodriguez, Certified
7 Shorthand Reporter and Notary Public, HEREBY
8 CERTIFY that the foregoing transcript of
9 proceedings before the Oil Conservation Division
10 was reported by me; that I caused my notes to be
11 transcribed under my personal supervision; and
12 that the foregoing is a true and accurate record
13 of the proceedings.

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

19 WITNESS MY HAND AND SEAL July 8, 1994.
20

21
22 
23 CARLA DIANE RODRIGUEZ, RPR
24 CCR No. 4
25