

1 STATE OF NEW MEXICO
2 ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
3 OIL CONSERVATION DIVISION
4
5
6

7 EXAMINER HEARING
8

9 IN THE MATTER OF:
10

11 Application of Mallon Oil Case 9790
12 for pool creation and special
13 pool rules, Rio Arriba County,
14 New Mexico.
15
16

17 TRANSCRIPT OF PROCEEDINGS
18

19 BEFORE: MICHAEL E. STOGNER, EXAMINER
20

21 STATE LAND OFFICE BUILDING

22 SANTA FE, NEW MEXICO

23 October 18, 1989
24

25

ORIGINAL

A P P E A R A N C E S

1

2

3 FOR THE DIVISION:

ROBERT G. STOVALL
Attorney at Law
Legal Counsel to the Divison
State Land Office Building
Santa Fe, New Mexico

6 FOR THE APPLICANT:

MONTGOMERY & ANDREWS, P.A.
Attorneys at Law
P.O. Box 2307
Santa Fe, New Mexico 87504-2307
BY: W. PERRY PEARCE, ESQ.

7

8

9 FOR MERIDIAN OIL,
10 INC.:

KELLAHIN, KELLAHIN & AUBREY
Attorneys at Law
117 N. Guadalupe
Santa Fe, New Mexico 87504
BY: W. THOMAS KELLAHIN, ESQ.

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

I N D E X

Page Number

Appearances	2
JOE COX	
Direct Examination by Mr. Pearce	5
Cross-Examination by Mr. Chavez	20
Cross-Examination by Hearing Examiner	27
Further Examination by Mr. Chavez	33
Certificate of Reporter	36

E X H I B I T S

Applicant's Exhibit 1	7
Applicant's Exhibit 2	7
Applicant's Exhibit 3	9
Applicant's Exhibit 4	10
Applicant's Exhibit 5	15
Applicant's Exhibit 6	15

1 HEARING EXAMINER: We'll call the next
2 Case, No. 9770, which is the application of Mallon Oil
3 Company for pool creation and special pool rules, Rio
4 Arriba County, New Mexico.

5 At this time I'll call for appearances?

6 MR. PEARCE: May it please the examiner, I
7 am W. Perry Pearce of the Santa Fe office of the law
8 firm of Montgomery & Andrews, appearing in this matter
9 on behalf of Mallon Oil Company, and I have one
10 witness who needs to be sworn.

11 HEARING EXAMINER: Are there any other
12 appearances?

13 MR. KELLAHIN: Mr. Examiner, I'm Tom
14 Kellahin of the Santa Fe law firm of Kellahin,
15 Kellahin & Aubrey, appearing on behalf of Meridian
16 Oil, Inc.

17 HEARING EXAMINER: Do you have any
18 witnesses, Mr. Kellahin?

19 MR. KELLAHIN: No, Mr. Examiner.

20 HEARING EXAMINER: Are there any other
21 appearances.

22 MS. WILLIAMS: My name is Sarah Williams.
23 I'm an attorney here in Santa Fe and representing NM&O
24 and Larry Sweet.

25 HEARING EXAMINER: NM&O?

1 MS. WILLIAM: Correct, Operating Company.

2 HEARING EXAMINER: And Larry Sweet? How do
3 you spell that last name?

4 MS. WILLIAM: S-w-e-e-t.

5 HEARING EXAMINER: Okay. Are there any
6 other appearances?

7 Miss Williams, do you have any witnesses?

8 MS. WILLIAM: No, I don't.

9 HEARING EXAMINER: Will the witness please
10 stand to be sworn? Mr. Pearce, how much witnesses do
11 you have?

12 MR. PEARCE: Only one, Mr. Examiner.

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

16 DIRECT EXAMINATION

17 BY MR. PEARCE:

18 Q. For the record, sir, would you please state
19 your name and place of residence.

20 A. Joe Cox. I live in Denver, Colorado.

21 Q. Who is your employer, Mr. Cox?

22 A. I work for Mallon Oil Company.

23 Q. What are your responsibilities for Mallon
24 Oil Company?

25 A. I'm the production manager at Mallon.

1 Q. Mr. Cox, have you appeared before the
2 Division or one of its examiners previously and had
3 your credentials made a matter of record?

4 A. Yes, I have.

5 Q. And you were qualified as an expert in the
6 field of petroleum engineering; is that correct?

7 A. Yes.

8 Q. And you are familiar with the application
9 filed by Mallon that's being heard today?

10 A. Yes, I am.

11 MR. PEARCE: Mr. Examiner, at this time I
12 would ask the recognition of Mr. Cox as an expert in
13 the field of petroleum engineering.

14 HEARING EXAMINER: Are there any
15 objections? Mr. Cox is so qualified.

16 Q. (BY MR. PEARCE) Mr. Cox, before we begin,
17 I'd like for you to step back for a moment and give us
18 a general description of what Mallon Oil Company seeks
19 this morning.

20 A. Okay. We are trying to form a pool
21 separate from Blanco-Mesa Verde pool to produce Mesa
22 Verde gas in the area of township 25 North, Range 2
23 West.

24 Q. Let's look, please, if you would at what
25 we've marked as Exhibit No. 1 to this proceeding.

1 Would you describe the information reflected on that
2 exhibit for the examiner?

3 A. This is just kind of a general outline
4 map. It shows the outline of Blanco-Mesa Verde pool.

5 Q. That is the area shaded in green; is that
6 correct?

7 A. In green. It also shows the proposed pool
8 boundary for the pool we're proposing, which I'll
9 refer to as Gavilan Mesa Verde.

10 Q. I notice looking at Exhibit No. 1 that
11 there are a tremendous number of well symbols out
12 there. I would ask you in that regard to look now at
13 what we've marked as Exhibit No. 2 to this proceeding
14 and describe the information reflected on that
15 exhibit.

16 A. This is a map that shows shut-in pressure
17 data from the initial test from as many of the Mesa
18 Verde producing wells in the area as I could obtain
19 data for.

20 The color-coded index in the lower
21 left-hand side shows the pressure scale indicated for
22 each well symbol, and then the shape of the symbol
23 shows what interval within the Mesa Verde is
24 completed.

25 Q. There appear to be three separate regions.

1 Let's look first at the western portion of that, and
2 that, looking at Exhibit 1, would be an area within
3 the present Blanco-Mesa Verde pool. Almost all of
4 those well symbols appear to be colored blue, and that
5 indicates that they are lower-pressured wells; is that
6 correct?

7 A. That's correct. Within that group of
8 pressures we've got, they average around 1,200 pounds
9 as indicated on Exhibit 1.

10 Q. Then to the northeast of that area, there
11 is an area of wells which appear to be various
12 colors. Could you describe that area for us, please.

13 A. That area we have wells that get into the
14 1700 to 1800-pound range, and using the higher
15 pressure is the more valid test in both areas, I
16 assume an average of about 1700 pounds for the extra
17 shut-in pressures as indicated on Exhibit 1 again.

18 Q. Then there are two colored well symbols in
19 the southeastern portion of the map displayed. And
20 looking at Exhibit 1, that appears to be the area of
21 the proposed pool; is that correct?

22 A. That's correct.

23 Q. What do the pressure tests in that area
24 show?

25 A. Those two wells are Mallon's Davis No. 3-15

1 in Section 3 of 25 North, 2 West.

2 Q. That's the red symbol; is that correct?

3 A. Red symbol. That shows a shut-in pressure
4 of over 1800 pounds. And then the green symbol in
5 Section 23 is Mesa Grande's North Lindrith 23-1, and
6 it's in the 1500-to-1600 pound region.

7 Q. Anything else you'd like to highlight on
8 that exhibit before we turn to 3?

9 A. There are some wells that are circled on
10 there. As indicated by the key, those are wells that
11 were either attempted as Mesa Verde completions or
12 completed the Mesa Verde but weren't commercially
13 successful.

14 Q. We have some additional information on
15 those wells that we'll discuss later; is that correct?

16 A. That's correct.

17 Q. Let's turn to Exhibit No. 3, which may be
18 somewhat disorienting to look at, but describe it for
19 the examiner, please.

20 A. This is a structure contour map based on
21 top of the Menefee formation and the -- it's a small
22 area just because of time constraints for mapping, but
23 the location of this area is in a tight corner of the
24 basin.

25 It's bounded on the east side by the

1 Nacimiento uplift, which has affected the structure
2 behavior immediately east of here, and as indicated on
3 here, has apparently produced some faulting in the
4 area.

5 Q. The faulting shown on that is your
6 interpretation of material that you've looked at; is
7 that correct?

8 A. Right. The faulting is based primarily on
9 the behavior of the structure contours, but it also
10 fits in with the pressure behavior on the wells
11 because the Mesa Verde is divided into three separate
12 depositional histories, and the faulting would be
13 about the only way to explain how you would have a
14 pressure-isolated portion of those three sands.

15 Q. Let's now look at what we've marked as
16 Exhibit No. 4, which appears to be some well data and
17 go back to Exhibit No. 2 to the red well circles that
18 you addressed earlier.

19 What's reflected on Exhibit No. 4?

20 A. It's just a list of the wells as indicated
21 with the red circles on the map. And before our
22 recompletion of the Davis 3-15, the red well symbol on
23 Exhibit 2, we had data review and noticed that we were
24 adjacent to an area of a number of dry holes and poor
25 tests. We were concerned about the risk of

1 recompleting those wells.

2 This just shows -- there's kind of a barren
3 area out there where tests have been made, and no
4 commercial production has been achieved.

5 Q. Let's walk through these very quickly. As
6 they are listed on Exhibit No. 4, the No. 3 Davis is
7 shown in Section 10 of 26-2. Where is that well an
8 Exhibit 2?

9 A. Section 10 is about the upper middle
10 portion of 26 North, 2 West. It's the gas well symbol
11 without a color code on it.

12 Q. Southeast of the square blue symbol; is
13 that correct?

14 A. Yes, the green symbol.

15 Q. I'm sorry; I said "blue," and I meant
16 "green." I apologize. Then continuing down from
17 there, we have the effect of a crescent of dry or
18 subeconomic Mesa Verde wells that have been attempted
19 in this area; is that correct?

20 A. Right.

21 Q. On the basis of the results of drilling
22 those wells and other structural studies, that's part
23 of the basis of your Exhibit No. 3; is that correct?

24 A. That's correct.

25 Q. So we've got some well data and some

1 structural data, and we've gone back and forth a
2 couple of times, and you interpret the faulting shown
3 on Exhibit 3?

4 A. That's correct.

5 Q. Anything else you'd like to point out to
6 the examiner on Exhibit No. 4?

7 A. I don't believe so. It does include all of
8 the Mesa Verde wells. Between the color-coded symbols
9 and these, there aren't any commercial wells have been
10 left out of the exhibits.

11 Q. The other well symbols reflected on that
12 are non-Mesa Verde wells; is that correct?

13 A. Right. There's a Pictured Cliffs producing
14 trend, and there's also Mancos production down through
15 here.

16 Q. One of the things we have done when we
17 filed the application in this case was request some
18 special pool rules, and I'd like to take a moment and
19 run over our requests in that regard with you.

20 We are requesting 320-acre spacing; is that
21 correct?

22 A. That's correct.

23 Q. What is the basis for that request after
24 your review of this area?

25 A. It just seemed like a safe spacing to start

1 out with. Anyway, the well producing intervals are
2 similar to the Blanco-Mesa Verde producing intervals,
3 at least in log character. Those wells of infill
4 program of Blanco have shown some depletion between
5 the wells, which seems to indicate that they're
6 capable of affecting a 320-acre spacing. That's what
7 we're starting out with.

8 Q. We're also asking for well location
9 requirements of 790 feet from the quarter section line
10 and 130 feet from the quarter-quarter section lines;
11 is that correct?

12 A. That is correct.

13 Q. Those are the well location requirements
14 currently existing in the Blanco-Mesa Verde pool?

15 A. That's correct.

16 Q. And you believe that they allow sufficient
17 well location flexibility to allow recompletions as
18 necessary of wells existing in the boundary of the
19 proposed Gavilan Mesa Verde pool?

20 A. There may be some wells within the proposed
21 pool boundaries that conflict with these. In general,
22 I think they would be acceptable.

23 Q. In that regard, are we seeking to have an
24 exception or a grandfather provision put in the order
25 for wells which have already been recompleted?

1 A. Yes.

2 Q. Finally, let's turn --

3 A. Let me back up. I think looking for an
4 exemption for wells that are already drilled and
5 producing from lower zones.

6 Q. So that those wells could be recompleted in
7 the Gavilan Mesa Verde pool without further
8 administrative authorization?

9 A. Correct.

10 Q. Let's look now at the proposed vertical
11 boundaries of the pool. What is your recommendation
12 with regard to the vertical boundaries?

13 A. Well, we departed a little bit from the
14 rules used in Blanco on this. We have effectively
15 moved the Chacra line south of this entire proposed
16 pool area.

17 The Chacra line is a line that delineates
18 an area of Chacra production potential to the
19 southeast to southwest of the line, and none to the
20 northeast, and the Mancos logs, we don't see any
21 Chacra potential within the proposed pool boundary.
22 The Huerfanito Bentonite should be the upper limit of
23 the vertical boundary of the pool.

24 Q. What are you proposing for the lower limit?

25 A. The lower limit would be the same as

1 Blanco, which is 500 feet below the Point looktop.

2 Q. Let's look now at what we've marked as
3 Exhibit No. 5 to this case. Could you tell us what
4 that document is?

5 A. This is the induction guard log from the
6 David 3-15 well we've recompleted and are presently
7 producing from the Mesa Verde. It is within the
8 proposed pool boundaries. We've just gone through and
9 picked the interval that would be the pool boundaries
10 as proposed.

11 The Huerfanito Bentonite is picked and
12 indicated on the second page of the exhibit. What
13 would be the Blanco vertical pool is indicated on the
14 third page. Top of the Point Lookout is indicated on
15 the fourth. And then the last page would be the 500
16 foot below the top of the Point Lookout or lower limit
17 of both Blanco and the proposed pool.

18 Q. On this particular exhibit, the lower limit
19 falls at about 6310; is that correct?

20 A. That's correct.

21 Q. In your preparation of this case, did you
22 cause notice to be provided as set forth in Rule 1207?

23 A. Yes, we did.

24 Q. Let's look at what we've marked as Exhibit
25 No. 6, and could you describe for the examiner the

1 documents reflected in Exhibit No. 6?

2 A. Exhibit 6 is just a collection of letters
3 from operators that would be within the proposed pool
4 boundary. Prior to submitting our proposal to form
5 the pool, we had met with operators in order to get
6 everyone's feelings about the idea of a separate pool
7 down there, and we have had no parties that were not
8 in favor of it. And, in general, everybody feels like
9 it's something that should be done.

10 Q. The documents included in Exhibit No. 6, a
11 letter in support by Dugan Production Corporation,
12 Meridian Oil, Oryx Energy Company, Amoco Production
13 Company, Mobil Exploration and Producing US, and NM&O
14 Operating Company; is that correct?

15 A. That's correct.

16 MR. PEARCE: Mr. Examiner, due to an
17 oversight, we do not have a list of all of the parties
18 who received written notice of this application
19 available to you. I would ask to be allowed to submit
20 that subsequent to the hearing. Under the provisions
21 of Rule 1207, the notice required is only regular mail
22 notice, and we will provide you with a list of parties
23 who received that notice.

24 HEARING EXAMINER: Were they mailed with
25 return receipts, Mr. Pearce?

1 MR. PEARCE: No, sir. Under the provisions
2 of Rule 1207, I believe it is subpart 4, the rule
3 requires regular mail rather than certified return
4 receipt requested.

5 HEARING EXAMINER: That will be sufficient,
6 Mr. Pearce.

7 MR. PEARCE: Thank you, sir.

8 Q. At this time, Mr. Cox, do you have anything
9 further to add to the record of this proceeding?

10 A. I would like to mention back in Exhibit 2,
11 the pressure color-coded map, I have indicated the
12 Davis well at 1800 pounds plus and the Mesa Grande's
13 North Limit 23-1 well to the southeast of it as being
14 1500 plus. And that Mesa Grande well which was
15 completed back in about March of this year has
16 produced unusually high volumes of water with its Mesa
17 Verde gas production, and the pressures indicated on
18 these maps are surface-measured pressures.

19 I feel like, since the higher 1880-pound
20 pressure we saw in our well is unusual, as far as the
21 data that I've seen on all the wells out there, it's
22 entirely possible that water within a wellbore on the
23 Mesa Grande well may have suppressed the surface
24 pressure, and it may be in that same pressure regime
25 as the Davis well is at.

1 The 1880 pounds would put it above all the
2 other pressures measured in there, which would
3 indicate to me that we are isolated from the Blanco
4 production area to the north and west of it.

5 Q. And based on your review of all of the
6 available pressure data, have you reached a conclusion
7 that the proposed Gavilan Mesa Verde area is a
8 separate source of supply not in communication with
9 the present Blanco-Mesa Verde pool?

10 A. Yes, that's my conclusion. And then, of
11 course, the distance from the commercial Blanco
12 production is what made us start looking into this in
13 the first place.

14 Q. In the course of that study, you have found
15 this crescent-shaped series of dry or noneconomical
16 Mesa Verde producers between the proposed Gavilan Mesa
17 Verde pool and the present Blanco-Mesa Verde pool; is
18 that correct?

19 A. That's correct.

20 Q. Do you have anything further at this time?

21 A. Well, there is another area of barren,
22 nonproducing intervals shown on both of these maps.
23 It's most clear on Exhibit 1, and it does seem to be
24 associated with the area that we've interpreted as
25 being fault-bounded. So the two areas may have some

1 similar origin.

2 Q. Just so the record is clear, we are not
3 proposing any change in the designation of that area
4 to the north and west of the proposed Gavilan Mesa
5 Verde, are we?

6 A. No, even though it does not appear to be a
7 common source of supply with the area to the
8 south-southwest.

9 Q. All right. Is that it?

10 A. That's correct.

11 MR. PEARCE: Mr. Examiner, at this time I
12 would request the admission of Mallon Exhibits 1
13 through 6 to this proceeding.

14 I have no further questions of of the
15 witness at this time. He is available.

16 HEARING EXAMINER: Are there any
17 objections? Exhibit 1 through 6 will be admitted into
18 evidence at this time.

19 Miss Williams, your witness.

20 MS. WILLIAM: Nothing at this time. Thank
21 you.

22 HEARING EXAMINER: Mr. Kellahin?

23 MR. KELLAHIN: No questions, Mr. Hearing
24 examining.

25 HEARING EXAMINER: Mr. Chavez, why don't

1 you please identify yourself?

2 FRANK CHAVEZ: Frank Chavez, District
3 Supervisor, New Mexico Oil Conservation Division,
4 District 3, in Aztec.

5 CROSS-EXAMINATION

6 BY MR. CHAVEZ:

7 Q. Mr. Cox, in evaluating your dry and
8 subeconomic Mesa Verde test, I'm looking specifically
9 at No. 4 on Exhibit 4, Well No. 1, Tapacitas,
10 Southland Royalty Company well, it's produced over
11 218,000 Mcf of gas over 4,500 barrels of oil. Why is
12 that well uneconomic?

13 A. That really is one that should not have
14 been on this list, and I don't have it circled on the
15 map. It doesn't really change the area too much for
16 that barren area.

17 I don't know that we could recomplete a
18 well, certainly not drill a well for 218,000 Mcf of
19 gas presently, but that sort of volume I would not
20 include in my list, ordinarily.

21 Q. Specifically, looking at wells in 25-2 on
22 your Exhibit 4, you show only two wells in that
23 township that were dry or uneconomic; is that
24 correct? Numbers 10 and 11 on page 2 of that exhibit?

25 A. Right, that's correct.

1 Q. No. 10 on that exhibit, the No. 1
2 Stephenson boring well, that shows that all three Mesa
3 Verde zones were in an open-hole test; is that
4 correct?

5 A. That is correct. It is a real old well.

6 Q. No stimulation?

7 A. I don't believe so. The records on it on
8 are very poor, and the PI lab are in Denver, and they
9 just indicated open-hole test. No stimulation
10 indicated.

11 Q. Is that an adequate test of the Mesa Verde,
12 open hole, or does it actually need to be stimulated
13 to get a good test?

14 A. I think you would get some gas, and I don't
15 know exactly what their procedure was, but,
16 presumably, they would use that for their criteria to
17 decide whether to stimulate the well or not.

18 Q. Then No. 11 on that exhibit, which is the
19 second well in 25-2, shows that there was no
20 stimulation of the Point Lookout zone, but the other
21 two zones, the Cliff House and the Menefee were
22 stimulated. That was in 1958.

23 Would that be an adequate test of the Point
24 Lookout without it being stimulated?

25 A. I don't recall why they squeezed that off,

1 and I think it may have been water production. It
2 would not give you an idea of potential to Point
3 Lookout as far as what it's able of producing.

4 And I believe that should be 25 North, 3
5 West, on that well, by the way. I didn't catch that
6 before, it is in 25-3.

7 Q. So then you only have one well on this
8 listing that's in township 25-2?

9 A. That's correct.

10 Q. Looking at Exhibit 4, it looks almost as if
11 surveying the area would preclude an attempt at a Mesa
12 Verde completion in this area. Why did you try one
13 when apparently there's been such poor results in the
14 past?

15 A. We had a Mancos producing well that had
16 been recompleted in the Dakota unsuccessfully, at
17 least from a commercial standpoint. The Mancos
18 production was not commercial. And we were faced with
19 losing that well if we weren't able to get production
20 out of it.

21 The Mesa Verde was the best shot, and I was
22 convinced that there was a fairly good chance in spite
23 of the poor tests north of us that the log looked
24 better than the tests that I had modern logs on. So
25 we did go ahead and recomplete it.

1 Q. Looking at Exhibit 2, it appears that it's
2 not unusual to have some wide variations in pressures
3 between wells in the existing Blanco-Mesa Verde pool,
4 even on section-to-section basis.

5 Did you find that to be the case?

6 A. Due to the nature of the shut-in pressure
7 tests, there is no accounting for the condition of the
8 well at the time, how soon after the frac or how much
9 clean-up flow was done. And because of the scatter in
10 these points, that's the reason this map was presented
11 the way it was and the color symbol. There's about
12 320-some wells represented here, pressure points
13 represented, and, statistically, they begin to sort
14 out the pressure regimes then, even though all the
15 tests are not necessarily valid in either area.

16 Q. So the pressures themselves aren't
17 delineating that you would have a separate pool in
18 that we do have the wide variations, for example, in
19 that area to the northwest of your proposed pool?

20 A. Run your question by again. I'm sorry.

21 Q. How do the pressure differences that you
22 show in your new wells indicate -- the wells you're
23 referring to in 25 North, 2 West, show you've got a
24 different source of supply when have you the similar
25 variations in pressures to the northwest of the

1 existing Blanco-Mesa Verde pool?

2 A. The maximum pressure recorded in a well is
3 meaningful. The surface pressure doesn't account for
4 what the density of fluid column is from the surface
5 to the producing zone, but I think the maximum
6 pressure should represent a value that would be -- you
7 wouldn't be any lower than that value as far as if you
8 extrapolated a certain bottom-hole pressure using a
9 gas rating or something.

10 I don't know if that answers your
11 question.

12 The difference in the two wells in our
13 proposed pool area I think is influenced by the fluid
14 column in the wells, and it probably has a lot to do
15 with the scatter in all the other points on here too.

16 Q. Is the interval, recalling Blanco-Mesa
17 Verde or the Mesa Verde interval itself, continuous to
18 this area from the existing pool to your proposed new
19 pool?

20 A. Is the pool itself?

21 Q. Yes. Are the formations continuous?

22 A. I think to some extent, if you take all
23 three units within the Mesa Verde, they are continuous
24 as far as being able to drill a well and recognize
25 them on a log. The sands tend to follow lines of

1 deposition along shore line trends at Point Lookout
2 and Cliff House, and the Menefee is a subaerial
3 deposition that's got sands laid down by streams in
4 it, and they may or may not be intercepted by any
5 given well.

6 But as far as deposition of the intervals,
7 they are present in all the wells across there.

8 Q. Are there characters on the logged
9 intervals through the Mesa Verde zone from the
10 existing pool to your proposed pool that would lead
11 you to surmise that they are different sources of
12 supply?

13 A. There's not a lot of data points to draw an
14 isopach map or some other map that might be used to
15 indicate that, whether they be continuous across there
16 or not.

17 One problem is a lot of these wells are
18 old, and we don't have porosity logs on them.

19 But the wells that are indicated and
20 circled in red that I do have modern logs on show
21 generally poor sands. For whatever reason, I don't
22 know.

23 Q. What do you mean by poor sands?

24 A. Lower porosity and a little higher gamma
25 ray account.

1 Q. Does that type of character exist across
2 the Blanco-Mesa Verde pool, to your knowledge; that
3 there are changes in porosities across the pool as it
4 exists?

5 A. There's a lot of variation within the pool,
6 yes.

7 Q. So this could probably cause just another
8 variation in the pool where we could continue the
9 existing pool to your proposed area?

10 A. If it weren't for all the poor and dry
11 holes within that area and the apparent pressure
12 differences, that would probably be true.

13 Q. Did you study the completion techniques
14 used on those poorer wells to see whether or not that
15 might have contributed to and perhaps not being as
16 good a well as they could have been, judging from the
17 modern completion techniques?

18 A. Yes, I did. And, in general, most of the
19 wells follow the same practices that are being
20 followed today.

21 Q. If the Blanco-Mesa Verde pool were extended
22 to include the area that you're proposing as a new
23 pool, would that be a detriment to the development of
24 the pool, considering the pool rules that you are
25 proposing?

1 A. I'd have to say yes, to some extent,
2 because the economics are somewhat poorer under the
3 proration rules of Blanco.

4 Q. Is that the only detriment that you think
5 would hinder development is the proration?

6 A. Yes. I can't see any other reason, from
7 the standpoint of Mellon Oil Company, that we would be
8 -- every well, of course, has to have an economic
9 decision, and that's what's primary but --

10 MR. CHAVEZ: I think that's all the
11 questions I have, Mr. Examiner.

12 CROSS-EXAMINATION

13 BY HEARING EXAMINER:

14 Q. Mr. Cox, I'm referring to Exhibit No. 1.
15 You referred to the two general producing areas in the
16 Blanco-Mesa Verde, the one that showed 1,200 psi and
17 then 1,700 psi. Were there any plugged and abandoned
18 or dry wells between those two producing areas in the
19 Blanco-Mesa Verde?

20 A. Yes, there are some dry and abandoned
21 tests. I don't know of any wells that produced
22 inbetween.

23 Q. And there are some plugged and abandoned
24 wells between your proposed area and the Blanco-Mesa
25 Verde pool; is that correct?

1 A. That's correct.

2 Q. I'm still a little confused on what is
3 actually separating your proposed pool and the
4 Blanco-Mesa Verde. Could you enlighten me a little
5 bit on that? How would I make a finding?

6 A. What is separating them as far as our
7 feeling why they should be separate or --

8 Q. I'm not asking your feeling. You're
9 telling me they're separate. Why are they separate?

10 A. I think the biggest single factor for our
11 feeling on that is the pressure difference that's, I
12 think, indisputable between these two areas.

13 As far as why there's a higher pressure out
14 here, the most reasonable guess I would make is fault
15 isolation of the reservoirs and possibly charging from
16 the uplift outcrop of Mesa Verde for the higher
17 pressure on the east side.

18 Q. So you're saying the geological explanation
19 is the fault differential?

20 A. I would think, yes, that's how the pressure
21 difference came to be.

22 Q. I believe I show some wells on the east
23 side of that fault that's in the Blanco-Mesa Verde, or
24 am I seeing things?

25 A. I don't think there are, but I didn't study

1 that real carefully.

2 Q. I'm sorry. You didn't what?

3 A. I didn't go back and make sure that the
4 faults did not include any, but I don't think there
5 are any in there.

6 Q. Also, in your presentation of Exhibit No.
7 2, you mentioned something about you didn't have
8 enough -- I'm sorry -- Exhibit No. 3, that there was
9 little time to prepare an isotope map? What did I
10 hear?

11 A. I just limited the area that I went through
12 and did my structure map on because of time. I would
13 have liked to have filled in this entire exhibit area,
14 but I didn't get that much data put together.

15 Q. What kind of time did you have to prepare?

16 A. Well, this was just within the last three
17 weeks that most of the exhibits were prepared for this
18 hearing.

19 Q. Were you familiar with the nomenclature
20 case that was called on April 12, 1989, in Case No.
21 9650, and I'll refer to Paragraph D to extend the
22 Blanco-Mesa Verde pool in this area to include some of
23 your acreage? Were you familiar with that particular
24 case?

25 A. Yes. We made an appearance at that

1 hearing.

2 Q. And you only had three weeks between now
3 and April to prepare for this case?

4 A. That was my own scheduling. It wasn't
5 because of the -- but I think that this is a
6 sufficient map area to create an understanding of
7 what's happening there structurally as far as --

8 Q. Did you prepare any cross-sections today?

9 A. Not for presentation. Again --

10 Q. You mentioned something about the pool
11 rules, and their being similar to the Blanco-Mesa
12 Verde, and I don't see any proposed pool rules here;
13 so bear with me. You were seeking 320 spacing or 160
14 spacing?

15 A. 320-spacing.

16 Q. What would be the location of a single well
17 since this would be an unprorated pool of a single
18 well within 320-acre spacing?

19 A. What would be -- pardon me?

20 Q. The well location requirements for a single
21 well to drain a 320-acre proration unit?

22 A. Again, looking at the Blanco rules, just as
23 a guide, the only location requirements we saw were
24 the 790 feet from the quarter line and 130 feet, I
25 believe it is, from the quarter-quarter lines.

1 Q. And you feel a single well would adequately
2 drain 320 acres?

3 A. Based on the very limited amount of
4 information we've got, that is the best idea we've got
5 is 320-acre spacing.

6 Q. Why shouldn't it be based on 160? I'm
7 still not catching you.

8 A. We have a very similar section on logs to
9 what's been found in Blanco. I mentioned, the infill
10 drilling there, even though the 320 spacing may not
11 have been completely recovering all the gas, it was
12 influencing the pressure between wells. And just as a
13 measure of protecting correlative rights, until we
14 have some more production history, we are proposing
15 320-acre spacing to start out with.

16 If that should change in the future, after
17 we've got some wells producing in there and
18 volumetrically feel like we're draining less than we
19 proposed, that we can come back.

20 Q. How many wells do you have in your proposed
21 area in the Blanco-Mesa Verde pool?

22 A. In the Gavilan Mesa Verde --

23 Q. Yes. In your proposed Mesa Verde pool?

24 A. There are two producing wells right now.
25 One of them is shut in, and our Davis well is

1 producing.

2 Q. You have two wells, and you want this big
3 of an area? I'm sorry. Where are the wells?

4 A. Section 3, the southwest quarter of the
5 southeast quarter.

6 Q. And the other well?

7 A. It's in northeast-northeast of Section 23,
8 both in 25 North, 2 West.

9 Referring to your interest in the pool
10 area, that was really from the meeting we had with
11 operators trying to avoid more administrative work
12 immediately after the pool is formed, if it's formed,
13 because of interest in recompleting more wells in
14 there.

15 Q. What would be the vertical extent of your
16 proposed pool?

17 A. From the Huerfanito Bentonite to 500 feet
18 below the top of the Point Lookout.

19 Q. That's what your Exhibit 5 is showing?

20 A. That's correct. It shows those markers.

21 Q. How much time are you proposing that we
22 make these rules temporary before permanent rules are
23 adopted?

24 MR. PEARCE: We are requesting two years,
25 Mr. Examiner. I apologize. I did not cover that with

1 the witness.

2 HEARING EXAMINER: Are there any other
3 questions of this witness? Mr. Chavez?

4 MR. CHAVEZ: Just one last question.

5 FURTHER EXAMINATION

6 BY MR. CHAVEZ:

7 Q. Mr. Cox, is there any significant
8 difference between the rules that you propose as
9 against the rules of the Blanco-Mesa Verde pool?

10 A. The only difference would be the upper
11 vertical limit of the proposed pool and the -- we were
12 not seeking prorated production within the Gavilan
13 proposed pool.

14 Q. Have you determined what might be your
15 allowable if these wells were taken into the
16 Blanco-Mesa Verde pool to determine that such a
17 detriment would occur to your wells?

18 A. I've done some economic work, making
19 assumptions based on the past year's proration.

20 Q. How would that restrict the production from
21 the existing wells?

22 A. Well, the work that I did -- and, of
23 course, there are a lot of assumptions that have to be
24 made about future allowables and future potential
25 tests, deliverability tests -- but I think there is an

1 impact on the bottom line, discounted cash from the
2 well of, as I recall, 35, 40 percent.

3 Q. Does that make these wells uneconomical to
4 draw?

5 A. Like the Davis well, even if we weren't
6 prorated, we will probably lose money because it was
7 an expensive well to recomplete. So there's certainly
8 going to be -- there's not a lot of room even on
9 recompletions for either/or expenditure or being able
10 to produce less than forecast, and it's a big factor.

11 Q. But on the other well, would proration make
12 a well uneconomical?

13 A. Well, if I just took what I've considered a
14 typical well in there, it very well could, yes.

15 MR. CHAVEZ: That's all the questions.
16 Thank you.

17 HEARING EXAMINER: Let me make sure.
18 You're not proposing infill drilling provisions, are
19 you?

20 THE WITNESS: We are not.

21 HEARING EXAMINER: So that's another
22 significant difference between these?

23 THE WITNESS: That is correct.

24 HEARING EXAMINER: If there are no other
25 questions of this witness, he may be excused.

1 Anything further in Case No. 9790 at this
2 time?

3 MR. PEARCE: Nothing, Mr. Examiner.

4 HEARING EXAMINER: This case will be taken
5 under advisement.

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

