

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO

2 May 1985

EXAMINER HEARING

IN THE MATTER OF:

Application of APC Operating Part-
nership for pool creation and spec-
ial pool rules, Lea County, New
Mexico.

CASE
8595

BEFORE: Gilbert P. Quintana, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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RICHARD BRUNNER

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NEWTON L. LANG

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1

2

MR. QUINTANA: We'll call next

3

Case 8595.

4

MR. TAYLOR: The application of

5

APC Operating Partnership for pool creation and special pool

6

rules, Lea County, New Mexico.

7

MR. KELLAHIN: If the Examiner

8

please, I'm Tom Kellahin of Santa Fe, New Mexico, appearing

9

on behalf of the applicant.

10

I have two witnesses to be

11

sworn.

12

MR. QUINTANA: Are there other

13

appearances in this case?

14

If not, would the witnesses

15

please stand up and be sworn in at this time?

16

17

(Witnesses sworn.)

18

19

RICHARD BRUNNER,

20

being called as a witness and being duly sworn upon his oath,

21

testified as follows, to-wit?

22

23

DIRECT EXAMINATION

24

BY MR. KELLAHIN:

25

Q

Mr. Brunner, for the record would you

1 please state your name and occupation?

2 A My name is Richard Brunner. I'm a geolo-
3 gist for Apache Corporation.

4 Q APC Operating Partnership, the applicant
5 in this case, is -- has what relationship to Apache Corpora-
6 tion, Mr. Brunner?

7 A A limited partnership and Apache is the
8 general managing partner of it.

9 Q And you're appearing today on the part of
10 the applicant as a geologist.

11 A Yes, that's true.

12 Q Would you identify for the Examiner when
13 and where you obtained your degree in geology?

14 A I got a Bachelor's degree from the Uni-
15 versity of Colorado in 1975.

16 Q Subsequent to graduation, Mr. Brunner,
17 have you been employed as a petroleum geologist?

18 A As an exploration geologist, that's
19 right, ten years.

20 Q All right, sir, would you describe what
21 your employment experience has been?

22 A I've worked for a consulting geologist
23 in Denver by the name of Perry Rale (sic).

24 I've worked for the USGS, ARCO Petroleum,
25 Diamond Shamrock Corporation, and four years for Apache.

1 Q Does APC Operating Partnership have work-
2 ing interest ownership in some of the area to be included in
3 the proposed new Caudill Pool?

4 A Yes, they do.

5 Q And pursuant to that interest in this
6 area, has APC Operating Partnership a producing oil well in
7 this pool?

8 A Yes, they do, the No. 1 Gilliam Well in
9 Section 2.

10 Q Have you made a study of the geology in-
11 volved in that well and the other wells in the immediate
12 area?

13 A Yes, I have.

14 MR. KELLAHIN: We tender Mr.
15 Brunner as an expert petroleum geologist, Mr. Quintana.

16 MR. QUINTANA: He's considered
17 an expert in petroleum geology.

18 Q Mr. Brunner, let me turn your attention
19 to what we have marked as Exhibit Number One, and before you
20 describe the exhibit, would you please simply identify what
21 it is?

22 A This is a geologic subsurface structure
23 map on the Upper Wolfcamp marker and that data was acquired
24 from both the subsurface well logs and from seismic data.

25 Q In addition to the structure map, have

1 you also included an Isopach of the Wolfcamp formation?

2 A Yes, the Wolfcamp reef zone has been Iso-
3 pached from the effective porosity, and that's indicated by
4 the dashed lines highlighted in blue.

5 Q Would you identify for us what are the
6 two currently producing oil wells that produce out of this
7 Wolfcamp Oil Pool?

8 A Yes. The well labeled the No. 1 Gilliam,
9 originally drilled by Florida Exploration Corporation, now
10 operated by APC, and the No. 1 Scott Well, originally drill-
11 ed by Enstar, now operated by Union Texas Exploration.

12 Q What does APC Operating Partnership pro-
13 pose to accomplish with this application, Mr. --

14 A We propose to space production on stand-
15 up eighties to adequately drain this reservoir and prevent
16 over-drilling.

17 Q Let's have you describe the information
18 now in Exhibit Number One.

19 Tell us the significance of that informa-
20 tion and what conclusions you draw from this information.

21 A What I've shown around the two producing
22 wells is a reservoir limit defined by the structural closure
23 and also by the porosity trend of the Wolfcamp. This poro-
24 sity is continuous, or discontinuous but not erratic.

25

1 What I'm trying to say here is you can
2 Isopach the gross interval and you can see where the poro-
3 sity is better in some places, less in the other, being dis-
4 continuous but not erratic in that it is correlatable from
5 well to well and is continuous over the reservoir area.

6 Q The wells you've located on your exhibit,
7 are all these wells that penetrated or produced from this
8 new Wolfcamp Oil Pool?

9 A Yes, they've all penetrated it.

10 Q Do you have an opinion as a geologist as
11 to whether or not you can reach the opinion that the reser-
12 voir limits for the new oil pool are now reasonably defined?

13 A Yes.

14 Q And have you depicted those limits on Ex-
15 hibit Number One?

16 A I've depicted that, right, in the red
17 area highlighted.

18 Q Within that area, Mr. Brunner, do you
19 have an opinion as to whether the Wolfcamp interval consti-
20 tutes a separate, distinct source of supply for the wells
21 penetrating that interval?

22 A Yes. There's a, I believe, separate
23 source for those wells. Production is defined in the Wolf-
24 camp porosity that is not found through other wells to the
25 north, is found through a well to the south, a Sinclair

1 well, but it's structurally down dip in the water leg.

2 Q Would you now turn, sir, to Exhibit Num-
3 ber Two, which I believe is the A-A' cross section, running
4 from southwest to northeast?

5 A All right.

6 Q Was this also an exhibit which you pre-
7 pared?

8 A Yes, it is.

9 Q Would you identify for us what wells are
10 depicted on this cross section?

11 A From left to right, the PanAm Sinclair
12 Well, a dry hole in Section 11; the next well being the No.
13 1 Gilliam Well HNG operates; and to the north, the Burton
14 No. 1 Alexander Well and the No. 1 Allen Well.

15 Q Is this a structure cross section or a
16 stratigraphic cross section?

17 A This is a structure cross section.

18 Q Would you identify for us on any of these
19 wells that you choose what you propose to define as the up-
20 per and lower limits of this Wolfcamp Pool?

21 A To the left, or to the south part of the
22 cross section, you can see the same porosity in the No. 1
23 Gilliam Well is developed in the Sinclair Well but it's
24 structurally down dip in the water leg.

25 And on this cross section I've designated

1 on the blue bars the effective porosity that is the same as
2 we've contoured on the map.

3 To the other end, to the north end of the
4 cross section, we see that the No. 1 Alexander Well has suf-
5 ficiently less porosity, and this is where the discontinuity
6 comes into, and a bit more porosity is developed again in
7 the No. 1 Allen Well. The Allen Well is falling off, again,
8 structurally down dip, so that the reservoir limits of cross
9 section A-A' are confined just to the side of the Gilliam
10 Well; and we also designate, also, the red marks on the
11 cross section, the red bars are the perforations, and the
12 No. 1 Alexander Well and the No. 1 Allen Well were completed
13 but the No. 1 Alexander Well produced only 500 barrels a
14 day, was abandoned.

15 The No. 1 Allen Well, I believe, produced
16 5000 barrels and was abandoned. Those were very marginal
17 wells.

18 Q The Whitney Alexander No. 1 Well that
19 produced the 500 barrels of oil and then was abandoned, in
20 your opinion has the operator of that well perforated all
21 the potential producing intervals, as indicated on the log
22 section, for this Wolfcamp Pool?

23 A Yes, they have.

24 Q And approximately when was that well
25 abandoned, do you know?

1 A I don't have the exact date on that. I
2 believe it was in the past couple of years.

3 It was drilled -- the No. 1 Scott Well
4 was drilled and completed a year and a half ago, or so.

5 The No. 1 Alexander Well was a develop-
6 ment well to that pool, so the timing was in the past couple
7 years and I don't know the exact dates.

8 Q Let's turn now to the Exhibit Number
9 Three, which is the B-B' cross section.

10 All right, sir, would you identify for us
11 Exhibit Number Three?

12 A This is another structural cross section
13 from B to B' on the map.

14 From the far left, to the west, the So-
15 nio No. 1 Huber Well, including the No. 1 Gilliam Well, the
16 same well that appeared on A-A', then the other well within
17 the field, the No. 1 Scott Well, and the No. 2 Scott Well on
18 the far right, or to the east.

19 This cross section shows the same nomen-
20 clature of porosity and perforations, and it defines the

21

22

23

24

25

1 reef trend to zero porosity to the west side -- the east
2 side, excuse me, and to practically zero porosity on the
3 west side.

4 So this shows the east/west limits of
5 this fairway of porosity of the Wolfcamp Carbonate Reef.

6 Q In terms of sequence, would you describe
7 approximately when the Scott, the Enstar Scott No. 1 Well
8 was drilled and completed in relation to the Florida Gilliam
9 No. 1 Well?

10 A Yes, that well was completed in August of
11 '84, and it was a year later that the No. 1 Gilliam Well
12 was completed.

13 Q Are both these wells still producing oil
14 wells?

15 A Yes, they are.

16 Q And in your opinion are they producing
17 from a common source of supply in the Wolfcamp?

18 A Yes, they are, and this can be shown on
19 the cross section B-B', again, noting the red perforations
20 are the same correlatable porosity.

21 Q Based upon your analysis of the cross
22 section, both Exhibit Numbers Two and Three, can you reach a
23 geologic opinion about the reasonable continuity of the
24 Wolfcamp through this area and whether or not it will con-
25 stitute a separate reservoir?

1 A Yes, it is a separate reservoir. It is
2 discontinuous to some of the other wells but it is, in my
3 opinion, continuous between those two producing wells, not
4 erratic and separate.

5 Q Do you see any geologic evidence that
6 would cause you to conclude that wells could not be drilled
7 on an 80-acre spacing pattern?

8 A Would you repeat that?

9 Q Yes, sir. Do you see any geological evi-
10 dence, such as discontinuities, faulting, or other geologic
11 features that would cause you to believe that you would have
12 to have wells drilled on 40-acre spacing or have wells drill-
13 led on 80-acre spacing?

14 A No, I cannot see discontinuities or erra-
15 tic porosities or faults that say you would have different
16 porosity zones developing this on forties than on eighties.

17 Q In your opinion, then, from a geologic
18 point of view, can this Wolfcamp reservoir be developed ade-
19 quately on 80-acre spacing?

20 A Yes.

21 Q Let's turn now, sir, to Exhibit Number
22 Four.

23 All right, sir, let's look at both Exhi-
24 bit Four and Five together, if you please, and we'll draw
25 some comparisons between the two land plats and the struc-

1 ture map, Mr. Brunner.

2 First of all, let's identify Exhibit Num-
3 ber Four and describe what information is depicted on that
4 exhibit.

5 A This shows the lease and mineral owner-
6 ship in Sections 1 and 2 that concern the No. 1 Scott, No. 1
7 Gilliam Wells. Those are listed on the bottom and are color
8 coded.

9 Q All right, sir, and when we turn to Exhi-
10 bit Five, what are we looking at there?

11 A Five is a more complete ownership of all
12 the minerals in the offsetting acreage, Sections 1, 2, 11,
13 and 12.

14 Q The applicant has requested that we
15 create a new pool on 80-acre spacing and to allow any opera-
16 tors to orient a proration unit in a quarter section, either
17 the north half, the south half, the east half, or the west
18 half of a quarter section.

19 In terms of that orientation, what is
20 your knowledge with regards to how the proration units would
21 be allocated for the two existing wells in the pool?

22 A We'd propose the units to be the east
23 half of the southeast quarter of Section 2; west half of the
24 southwest quarter of Section 1.

25 Q Does the operator of the Apache -- I'm

1 sorry, the Scott No. 1 Well, Enstar, support and concur in
2 the application of APC Operating Partnership in this case?

3 A Yes, that operator is actually Union
4 Texas Corporation. They've purchased the well and they do
5 concur with the spacing.

6 Q In terms of the Isopach and structure
7 map, and overlaying the potential 80-acre proration units
8 versus the 40-acre proration unit, Mr. Brunner, do you see
9 any adverse consequences to any correlative rights of any
10 parties involved in this pool should we now change this from
11 40-acre dedication to 80-acre dedication?

12 A No, I do not. I see that the reservoir
13 is confined to those -- those 80 acres and that the correla-
14 tive rights will be the same in either case of eighties and
15 forties.

16 Q Do the individuals or the percentages of
17 participations in either wells change in any way if we go
18 from 40 to 80 acre dedication?

19 A No, no changes at all.

20 Q Were Exhibits Four and Five supplied to
21 you by the Land Department of Apache Corporation?

22 A Yes, they were. The information was sup-
23 plied and the drafting was done under my supervision.

24 Q All right, sir. In your opinion will ap-
25 proval of this application be in the best interests of con-

1 servation, the prevention of waste, and the protection of
2 correlativer rights?

3 A Yes, it will.

4 MR. KELLAHIN: That concludes
5 my examination of Mr. Brunner.

6 We move the introduction of his
7 Exhibits One through Five.

8 MR. QUINTANA: Exhibits One
9 through Five will be entered as evidence.

10

11

CROSS EXAMINATION

12 BY MR. QUINTANA:

13 Q Let me clarify one point, Mr. Brunner.

14 A Yes.

15 Q You want 80-acre spacing. Would you say
16 stand-up 80-acre spacing or does it matter?

17 A We'd like to ask for stand-up 80-acre
18 spacing, that being the east half of the southeast of Sec-
19 tion 2, the west half of the southwest of Section 1, yes.

20 MR. KELLAHIN: May I clarify
21 that for --

22 MR. QUINTANA: Yes.

23 MR. KELLAHIN: -- the Examiner?

24 Apache and Union of Texas pro-
25 pose to stand each of their two units up but we would re-

1 quest that the special rules allow any subsequent operators
2 the option within 160-acre tract, if they have the first
3 well within the 160, to make the selection of how to orient
4 the proration unit.

5 MR. QUINTANA: That's what I
6 was trying to get at. Thank you.

7 MR. TAYLOR: No questions.

8 MR. QUINTANA: I don't have
9 any further questions.

10 Does anybody have any questions
11 of the witness?

12

13 REDIRECT EXAMINATION

14 BY MR. KELLAHIN:

15 Q I overlooked one point, Mr. Examiner, and
16 that was the question of well locations under the special
17 rules and let me ask Mr. Brunner if he has any recommenda-
18 tion as to the footage location of wells within an 80-acre
19 spacing unit.

20 A Yes. For 80-acre spacing we request that
21 no wells be drilled closer than 330 feet of any side
22 boundary of the 80-acre proration unit.

23 MR. QUINTANA: You have no re-
24 commendation for a north/south boundary limit?

25 MR. KELLAHIN: No, sir, it

1 would be 330 all the way around.

2 MR. QUINTANA: No other ques-
3 tions.

4 He may be excused.

5 You may proceed.

6 MR. KELLAHIN: Our next wit-
7 ness, Mr. Quintana, is Mr. Lang, a petroleum engineer.

8 We have supplied the Commission
9 with a package of his engineering exhibits, which I have
10 used your case stamp and identified as Exhibit Six.

11 Within Exhibit Six are a number
12 of attachments and Mr. Lang has identified each of the at-
13 tachments starting with the letter "E", the number 1, and
14 then proceeding through the exhibits using "E" all the way
15 through, I believe, E-7.

16 MR. LANG: that's correct.

17

18 NEWTON L. LANG,

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

21

22 DIRECT EXAMINATION

23 BY MR. KELLAHIN:

24 Q Mr. Lang, would you please state your
25 name and occupation?

1 A My name is Newton L. Lang. I'm Regional
2 Manager of Reservoir Engineering for Apache Corporation,
3 Houston, Texas.

4 Q Mr. Lang, have you previously testified
5 before the Oil Conservation Division as a petroleum engi-
6 eer?

7 A Yes, I have, but a period of time of 23
8 to 24 years has elapsed and I feel it might be justifiable
9 to restate my qualifications if the Mr. Examiner so wishes.

10 Q All right, sir, if you'll identify for us
11 when and where you obtained your degree?

12 A I graduated from Texas Tech with a Bache-
13 lor of Science in petroleum engineering in 1956.

14 Q Subsequent to graduation, Mr. Lang, have
15 you been employed as a petroleum engineer?

16 A Yes, I have, for 29 years. I've been
17 with several, various oil companies, and also I'm profes-
18 sionally -- a Registered Professional Engineer in the State
19 of New Mexico, essentially for 24 years, also.

20 Q Have you made a study of the information
21 surrounding APC Operating Partnership's application for 80-
22 acre spacing within this pool?

23 A Yes, I have.

24 Q Have you made calculations of the re-
25 serves attributable to the Gilliam No. 1 Well and the econo-

1 mic consequences of 40 versus 80-acre spacing?

2 A Yes, I have.

3 MR. KELLAHIN: We tender Mr.
4 Lang as an expert petroleum engineer.

5 MR. QUINTANA: His qualifica-
6 tions are recognized.

7 Q Mr. Lang, let me show you what is marked
8 as Exhibit Six, the first exhibit 1-E, and have you identify
9 that for us.

10 A Okay. It's a type log on the Apache Gil-
11 liam No. 1. It's a compensated neutron density log with the
12 perforated interval shown on it, along with an initial
13 potential test filed on a C-105 as reported by Florida Ex-
14 ploration Corporation.

15 Q Is this the information that is the same
16 information Mr. Brunner depicted on his cross section for
17 this well?

18 A Yes, it is.

19 Q All right, sir, and would you identify
20 Exhibit Number 6-E2?

21 A This is a computer processed log on the
22 Apache Corporation Gilliam No. 1 over the same productive
23 interval, showing the intervals of potential pay.

24 Q All right, sir, and if we'll turn to E3
25 and have you identify that.

1 A This is my reserve recovery calculations
2 made on a 40-acre spacing.

3 Q All right.

4 A Of which calculated ultimate recovery ap-
5 proximates 44,000 barrels of oil.

6 Q In making an analysis from a petroleum
7 engineer's point of view to determine what is the most ef-
8 fective and efficient way to space wells in this limited re-
9 servoir, what is the process you would go through?

10 A Basically I looked at the economics that
11 would justify the expenditure as far as the costs of drill-
12 ling and completing and equipping the well. Do the reserves
13 justify economic attractiveness to this spacing?

14 Q Have you used standard engineering calcu-
15 lations and methodology to reach your conclusions?

16 A Yes, I have.

17 Q And I assume that you have calculated the
18 recoverable reserves allocated to the Gilliam No. 1 Well,
19 both on 40 and 80-acre spacing?

20 A Yes, I have.

21 Q The engineering parameters that you used
22 to make those calculations are derived from what source,
23 sir?

24 A Mostly experience of factor with this
25 type of pay, although they were verified by API Bulletin D-

1 14.

2 Q Let's talk about the parameters that went
3 into the calculation, first of all, for the 40-acre spacing
4 calculations shown on E3 and have you tell us what those
5 parameters are.

6 A Going through the net pay in the wells,
7 total feet of 28, and this was derived from the computer
8 process log that we saw in Exhibit Number E-2, I continued
9 to use this estimated average pay over the drainage area of
10 40 acres.

11 The porosity of 5.9 percent again was de-
12 rived from the computer process log.

13 The connate water saturation of 32.1 per-
14 cent also derived from the computer process log.

15 Formation volume factor of 1.59 was cal-
16 culated, giving an initial oil in place of 195.5 barrels.

17 The recovery factor that I used for this
18 40 acres was 20 percent, giving the recoverable of 39.1 bar-
19 rels per acre foot.

20 Going back to 40 acres along with 28 feet
21 of net pay, you have a drainage volume of 720 acre feet for
22 a calculated ultimate recovery of 43,792 barrels.

23 Q In your opinion is the use of a 20 per-
24 cent recovery factor percentage a fair and reasonable one in
25 order to make a calculation for the 40-acre spacing reserve

1 number?

2 A Yes, it is.

3 Q All right, sir, when we turn now to
4 Exhibit 3-E, you have made a similar calculation for 80-acre
5 spacing?

6 A Yes, I have.

7 Q Would you identify for us which of the
8 parameters or percentages are different?

9 A The only change I made on this was I
10 dropped the recovery factor of 25 percent to a recovery fac-
11 tor of 15 percent of the original oil in place and going
12 through these calculations we come up with 65,632 barrels of
13 oil recoverable on 80-acre spacing.

14 Q In your opinion is it fair and reasonable
15 to adjust the recovery percentage factor to 15 percent for
16 the 80-acre calculation?

17 A Yes, it is.

18 Q And the ultimate recovery, then, under 80
19 acre spacing is the 65,000 barrels of oil?

20 A Yes, it is.

21 Q All right, sir.

22 All right, sir, now you've calculated the
23 recoverable reserves. Have you then compared the costs of
24 the wells versus the reserve to see whether they're economic
25 on 40 acres versus 80 acre spacing?

1 A Yes, I have.

2 Q And on what document do you now look to
3 see that information?

4 A Exhibit Number E-4.

5 Q This will apply to what type of spacing
6 pattern?

7 A This is the 40-acre spacing.

8 Q All right, sir, would you lead us through
9 the information and show us how you've reached your conclu-
10 sion?

11 A Yes, I will.

12 The Exhibit Number E-4 is cash flow based
13 on recoveries on a 40-acre spacing.

14 Essentially we go through with our gross
15 production, our net production, which is based on 100 per-
16 cent working interest, and net revenue interest of 81.25
17 percent.

18 Along with our pricing parameters we end
19 up with a total revenue of \$1,-68 -- or 069,000.

20 Going down to the next column, taking our
21 tangible costs along with our intangible costs of our well,
22 you'll notice that this approaches \$1.1-million, so that be-
23 fore tax cash flow on this well on a 40-acre spacing would
24 be a negative \$154,000.

25 Going to the next page, which is our cal-

1 culations after tax, you will notice the cash flow after tax
2 of a negative \$39,000, which indicates the well is uneconom-
3 ically attractive on a 40-acre spacing.

4 Q The information depicted on Exhibit E4,
5 is that a standard method of evaluating a prospect to deter-
6 mine whether the spacing pattern is profitable or not?

7 A Yes, it is.

8 Q All right, sir, let's turn now to what
9 happens when we use the 80-acre spacing in the calculation.

10 A Okay, refers to Exhibit Number E-4, this
11 is an economic evaluation for 80-acre spacing, using the
12 same reserve parameters as previously discussed, going
13 through with the net production and pricing parameters, we
14 end up with total revenue of \$1.6-million.

15 Again, our cost of developing, drilling
16 and completing and equipping, is \$1.1-million, and we have a
17 before tax cash flow of \$336,000.

18 Turning to the next page, our after tax
19 cash flow is \$226,000, giving us an after tax rate of return
20 of nearly 36 percent, which is attractive as far as rate of
21 return.

22 But when we get down to the after tax net
23 income divided by the investment, we have only a 1.2 return,
24 which is very marginal, so in these economics you can see
25 that 80 acres is attractive but not especially so.

1 The only reason it is attractive is due
2 to the initial potential or flow rates of the well allowing
3 us to have an early payout on our well.

4 Q Do you have an opinion as to whether or
5 not, should this pool be continued to be developed on 40-
6 acre spacing, whether or not unnecessary wells are going to
7 be drilled?

8 A In my opinion they would be.

9 Q In your opinion as an engineer, do you
10 see that we will need wells on 40-acre spacing in order to
11 recover reserves that are not going to be recovered on wells
12 on 80-acre spacing?

13 A No, I do not.

14 Q All right, sir, let's turn now to Exhibit
15 Number 5, E5, and have you identify that.

16 A This is a production history on Apache
17 Gilliam No. 1 and as you may notice, since the first of the
18 year there has been a rapid drop-off in production of this
19 well.

20 Q All right, sir, and if we turn to E6,
21 would you identify that?

22 A E6 is a production history for the total
23 Caudill Wolfcamp Northeast Field, and as may be noted, again
24 performance of both Union Texas Scott Well and Gilliam Well
25 have started showing noticeable performance drops since the

1 first of the year.

2 Q When you talk about total pool produc-
3 tion, have you added in the production from only the Scott
4 Well and the Gilliam No. 1 Well?

5 A No, also the Brittany Well was also in-
6 cluded in there.

7 Q Are there any other wells besides those
8 three that have contributed production to this history re-
9 port?

10 A No, there has not. There's another well
11 located to the north but it was not included in there. It
12 had a cumulative of about 5000 barrels but it was not in-
13 cluded in this study.

14 Q All right, sir. When we turn to E7,
15 would you describe that information?

16 A This is a 70-hour pressure build-up on
17 the Gilliam No. 1 that Florida Exploration, who was prede-
18 cessor to Apache took on their initial completion.

19 If you will notice, the pressure in a
20 very short period of time approached and reached bottom hole
21 build-up of around 2900 pounds.

22 In my opinion this indicates that this
23 reservoir had been previously drained by production by es-
24 sentially the Scott Well and other wells, but for this datum
25 I would anticipate a bottom hole pressure in the range of

1 about 4500 pounds, or greater.

2 So we're seeing a depressed reservoir
3 pressure in the neighborhood of 1600 pounds, which is essen-
4 tially a depressed or depletion of approximately one-third
5 of the original bottom hole pressure, so we definitely are
6 seeing a very effective drainage occurring in this reser-
7 voir.

8 Q This is a comparison that could be drawn
9 between the Scott Well and the Gilliam Well --

10 A Yes, it is.

11 Q -- that are on 40-acre spacing locations
12 apart?

13 A Yes, they are.

14 Q And within a period of about one year
15 we've seen a drawdown of pressure effect on the Gilliam Well
16 from the production from the Scott Well?

17 A That's correct.

18 Q What do you conclude from that informa-
19 tion?

20 A That production of these wells are ex-
21 ceeding drainage area in excess of 40 acres; that if we will
22 take an arc and draw it a distance between the Scott Well
23 and the Gilliam Well, we'll see that this circle would en-
24 compass an area in excess of 47.3 acres.

25 So it is my opinion that this reservoir

1 is effectively being drained in excess of 40 acres and would
2 sustain and substantiate the completion on 80 acres.

3 Q Was Exhibit Six, which constitutes all
4 the engineering exhibits prepared by you directly or com-
5 piled under your direction and supervision?

6 A Yes, they were.

7 MR. KELLAHIN: We move the in-
8 troduction of Exhibit Number Six.

9 MR. QUINTANA: Exhibit Six will
10 be entered as evidence.

11 MR. KELLAHIN: That concludes
12 our examination of Mr. Lang.

13

14 CROSS EXAMINATION

15 BY MR. QUINTANA:

16 Q You say it's Mr. Lang?

17 A Yes, uh-huh.

18 Q Your recovery factors for your 40-acre
19 spacing and 80-acre spacing calculations, could you repeat
20 to me where you derived those recovery factors from?

21 A Essentially it's experience factor more
22 than anything but to verify the factors we used, there's an
23 API Bulletin D-14, was used to verify these recovery fac-
24 tors, and essentially under that calculation it came up 15
25 percent, so I just arbitrarily used that for my 80-acre

1 spacing and to look at a 40-acre spacing optimistically, I
2 increased it to 20 percent.

3 So I feel that, if anything, the 20 per-
4 cent factor that was used on the 40-acre spacing may be
5 slightly optimistic.

6 But again, it's to -- to look at it on an
7 optimistic view of going to a 40-acre.

8 Q Okay.

9 MR. QUINTANA: I have no fur-
10 ther questions of this witness.

11 Are there other questions of
12 the witness?

13 If not, he may be excused.

14 Do you have anything further in
15 Case 8595?

16 MR. KELLAHIN: No, sir.

17 MR. QUINTANA: If not, Case
18 8595 will be taken under advisement.

19

20 (Hearing concluded.)

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C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8595 heard by me on May 8 19 85.
Silbert P. Quintana Examiner
Oil Conservation Division

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

6 3 September 1986

7 EXAMINER HEARING

8 IN THE MATTER OF:

9 Case 8595 being reopened pursuant to CASE
10 the provisions of Order No. R-7983 8595
11 Lea County, New Mexico.

12
13 BEFORE: Michael E. Stogner, Examiner
14

15
16 TRANSCRIPT OF HEARING

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18 A P P E A R A N C E S

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20 For the Division: No attorney present.
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24 For the Applicant:
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MR. STOGNER: This hearing will come to order concerning Docket No. 27-86, today's date, September 3rd, 1986.

I am Michael E. Stogner, appointed the Examiner for today's hearing.

We will call first Case Number 8595, which is in the matter of Case 8595 being reopened pursuant to the provisions of Order No. R-7983, which promulgated special rules for the Northeast Caudill-Wolfcamp Pool in Lea County.

These rules were made permanent pursuant to a Division order, unknown, so there is no need to have this case, so it will be dismissed.

(Hearing concluded.)

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C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY
CERTIFY the foregoing Transcript of Hearing before the Oil
Conservation Division (Commission) was reported by me; that
the said transcript is a full, true, and correct record of
the hearing, prepared by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 8595.
heard by me on 3 September 1986.

Michael E. Hayes Examiner
Oil Conservation Division