

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
State Land Office Building
Santa Fe, New Mexico

5 June 1985

EXAMINER HEARING

IN THE MATTER OF:

Application of Yates Petroleum CASE
Corporation for an exception to the 3614
Special Rules and Regulations for
the Bluit-Andres Associated Pool
as promulgated by Division Order
No. R-5353, as amended, Roosevelt
County, New Mexico.

BEFORE: Gilbert P. Quintana, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Maryann Lunderman
Division: Attorney at Law
Energy and Minerals Department
Santa Fe, New Mexico 87501

For the Applicant:

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MR. QUINTANA: Okay, we'll call
next Case 8614.

MS. LUNDERMAN: Application of
Yates Petroleum Corporation for an exception to the Special
Rules and Regulations for the Bluit-San Andres Associated
-- Associated Pool as promulgated by Division Order No. R-
5353, as amended, Roosevelt County, New Mexico.

The applicant has asked that
this case be continued, Mr. Hearing Examiner, until June
19th.

MR. QUINTANA: Case 8614 will
so be continued until June 19th, 1985.

(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 Con-
servation Division was reported by me; that the said tran-
script 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 and true transcript of the proceedings in
the Examiner's hearing of Case No. 8614,
heard by me on June 5 1985.

Gilbert P. Quintana, Examiner
Oil Conservation Division

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

19 June 1985

EXAMINER HEARING

IN THE MATTER OF:

Application of Yates Petroleum Corporation for an exception to the Special Rules and Regulations for the Bluit-San Andres Associated Pool as promulgated by Division Order No. R-5353, as amended, Roosevelt County, New Mexico.

CASE
8614

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Jeff Taylor
Counsel for the Division
Oil Conservation Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For Yates Petroleum: Jerry Losee
Attorney at Law
LOSEE AND CARSON
P. O. Drawer 239
Artesia, New Mexico 87501

A P P E A R A N C E S

1
 2 For Union of Cal.: William F. Carr
 3 Attorney at Law
 4 CAMPBELL & BLACK P. A.
 5 P. O. Box 2208
 6 Santa Fe, New Mexico 87501

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MR. STOGNER: Call next Case
8614.

MR. TAYLOR: Application of
Yates Petroleum Corporation for an exception to the Special
Rules and Regulations for the Bluit-San Andres Associated
Pool as promulgated by Division Order No. R-5353, as amend-
ed, Roosevelt County, New Mexico.

MR. STOGNER: Call for --

MR. LOSEE: A. J. Losee, Losee
and Carson, Artesia, New Mexico, appearing on behalf of
Yates Petroleum Corporation.

MR. CARR: William F. Carr,
Campbell and Black, P. A., of Santa Fe, appearing on behalf
of Union Petroleum Company of California.

MR. STOGNER: Are there any
other appearances?

How many witnesses are there?

MR. LOSEE: We have one wit-
ness.

MR. CARR: I have two.

MR. STOGNER: Will all witen-
ses please stand and be sworn?

(Witnesses sworn.)

1

2 MR. STOGNER: Mr. Losee, before

3 we get started, I may have a statement here.

4 You are representing Yates Pet-

5 roleum Company?

6 MR. LOSEE: Yes.

7 MR. STOGNER: What's Yates Pet-

8 roleum Company's relationship with Yates Drilling Company?

9 MR. LOSEE: They've got some of

10 the similar stockholders.

11 MR. STOGNER: How about the

12 president?

13 Who's president of Yates Petro-

14 leum?

15 MR. LOSEE: S. P. Yates.

16 MR. STOGNER: Okay. Who's

17 president of Yates Drilling?

18 MR. LOSEE: Peyton Yates.

19 MR. STOGNER: What's Peyton

20 Yates' relationship to Yates Petroleum?

21 MR. LOSEE: He's Vice Presi-

22 dent.

23 MR. STOGNER: Okay. Mr. Losee,

24 Mr. Carr, I have a statement at this time for the record.

25 I have been living in Santa Fe,

1 New Mexico since January of 1980 and reside at 1509 Paseo de
2 Peralta. That's the Covered Wagon Mobile Home Park.

3 In June of 1983 this property
4 was purchased by Yates Drilling Company, Peyton Yates, Pres-
5 ident.

6 Last month I was informed by
7 the management to vacate these premises by April 1st, 1986.

8 Since the applicant in this
9 case is one and the same, essentially, or have similar hold-
10 ings, and since this case is of a contested nature, and in
11 most contested natures the judgement favors one party over
12 another, therefore, in the sense of fairness and profes-
13 sional courtesy, I'm making it a matter of record that I'm
14 somewhat involved personally and financially with the appli-
15 cant, but in a totally separate matter.

16 I am prepared to hear this case
17 today and make a decision based upon the testimony and evi-
18 dence presented, without prejudice from any outside influ-
19 ence, but only if both parties agree unequivocally.

20 If there would be any questions
21 of my integrity, I would remove myself from this case and
22 assign, or get the Alternate Examiner to hear this case to-
23 day.

24 Mr. Carr, Mr. Losee, I'm as-
25 signing you as the spokesmen for your representative

1 clients. At this time I will call for a five minute recess
2 to allow everybodyd to discuss this matter openly. Upon re-
3 convening I will call for your decision.

4

5 (Thereupon a recess was taken.)

6

7 MR. STOGNER: This hearing will
8 come to order.

9 Mr. Carr, we'll hear from you
10 first.

11 MR. CARR: Mr Stogner, we're
12 prepared to go forward with the case and have you hear it.

13 We certainly don't feel that
14 you have -- there's any reason that we would not want you
15 hearing the case and entering an order in this matter.

16 MR. STOGNER: Thank you, Mr.
17 Carr. Mr. Losee.

18 MR. LOSEE: Mr. Stogner, I
19 first need to explain the relationship between Yates Dril-
20 ling Company and Yates Petroleum Corporation.

21 The family that owns Yates
22 Drilling Company owns approximately one/third of the stock
23 of Yates Petroleum. The rest of it's owned by the Martin
24 Yates III family and John A. Yates family.

25 I know nothing of the eviction

1 notice but I understand from talking to Mr. Mahfood that
2 that is a project of Richard Yates, who is an architect
3 here, and his brother Peyton Yates, and they are proposing
4 to build a building.

5 And in view of the Examiner's
6 statement that he would have no prejudice by reason on it,
7 we have no objection at all to you hearing the case.

8 MR. STOGNER: Thank you, Mr.
9 Losee.

10 Then let's continue, Mr. Losee.

11 MR. LOSEE: Let me first make a
12 short opening statement of the purpose of this.

13 Yates Petroleum Corporation
14 found itself in the position of having drilled what they
15 hoped to be an oil well and it turned out a gas well.

16 They had moved up dip from an
17 abandoned well by Delaware Apache that was located 660 from
18 the north and west lines of the southwest northeast of Sec-
19 tion 20. They moved up dip 330 feet to improve their pos-
20 ture and without an attempt to complete this in the P-2 of
21 the Slaughter zone. It turned out that the Slaughter zone
22 had been, although the section looked good, there was no oil
23 there. It had apparently already been drained.

24 The well was recompleted in the
25 P-1 of the Slaughter zone as a gas well. At that time Yates

1 fore I start, Mr. Examiner?

2 MR. STOGNER: No, sir, I don't,
3 Mr. Losee.

4 MR. LOSEE: All right.

5

6 EDDIE MAHFOOD,

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

9

10 DIRECT EXAMINATION

11 BY MR. LOSEE:

12 Q State your name and residence, please.

13 A Eddie Mahfood, Artesia, New Mexico.

14 Q What is your profession?

15 A Professional engineer.

16 Q Have you previously testified before this
17 Commission and made your qualifications a matter of record
18 and had them accepted as a petroleum engineer?

19 A Yes, I have.

20 Q Please refer to what's been marked as
21 Yates' Exhibit One and explain what is shown by this map.

22 A It's a lease ownership map showing the
23 well in question on the righthand side of this map in Sec-
24 tion 20, outlined in red with a red star. The red is 160
25 acres that we're dedicating to the well and the red star is

1 the well in question, which is 330 from the side lines.

2 In the same section we have another 160
3 outlined in green with two gas wells on it. That was
4 administratively approved with gas allowables.

5 Immediately north of the well in red is
6 80 acres straddling Section 17 and Section 20, which is the
7 unit, 80 acres, dedicated to the oil well, Union Federal No.
8 1.

9 Elsewhere in this map, I have six cur-
10 rently producing gas wells other than the Tenneco wells. We
11 have one in Section 8 of 8, 37, and there is a mark in
12 green, a green star, in the northeast corner of Section 8,
13 8, 37.

14 In Section 11 of 8, 37, southeast corner,
15 we have another gas well marked in green with a green star
16 and in Unit M of Section 12 there's another one.

17 Then in Section 24 we have, in Unit C we
18 have one gas well that is marked with a green star, and in
19 Section 24 we have another one in Unit I.

20 In Section 15 is another one in Unit I.

21 And these are the only producing gas
22 wells remaining in this field. Their current production is
23 less than 4-million a month.

24 Q Is that for all of these wells?

25 A Some of them are producing -- well, one

1 produce only 19 MCF all month of January; another one 130,
2 all month of January; the third one was 1.1-million and the
3 rest 2-million and 3-million.

4 Q Were any of those wells actually
5 originally drilled as oil wells?

6 A Yes, several of them were.

7 Q And completed in what zone?

8 A They were completed originally in the P-2
9 and I know with the P-1 open that they produced some gas and
10 no oil.

11 Q Do you know how much acreage is dedicated
12 to each of those wells?

13 A Six of them have 320 acres dedicated to
14 them and the Tenneco, the two wells in Section 20 of Tenne-
15 co's are simultaneously dedicated to 160.

16 Q Okay. Do you know the footage location
17 of those eight gas wells?

18 A They're all located 660 from the section
19 line -- from a line.

20 Q Now isn't there one exception to that,
21 that being the Tom Ingram well in the Section 24?

22 A That's 660 from the north and 1980 from
23 the west line.

24 Q But with that exception all of those
25 eight wells are located 660 out of the corner --

1 A That is correct.

2 Q -- of their proration unit.

3 A That's correct.

4 Q Do you know whether there's any of those
5 wells have any penalty imposed on them for their location?

6 A No, from the allowables assigned these
7 wells, there are apparently no penalties.

8 Q Please refer to what's been marked as Ex-
9 hibit Two and explain your or "the" structure map.

10 A Yeah. Exhibit Two is a structure map
11 based on top of the Slaughter Zone, and circled -- well,
12 in Section 20 outlined in red is the 160 acres assigned to
13 the Bluestem "ZL" Federal No. 1, the well in question.

14 We see also -- the Bluestem is colored
15 yellow with a (not understood) circle, and just south of it,
16 southeast of it is a plugged well, the Koch Federal No. 2
17 Well.

18 To the --

19 Q What -- go ahead.

20 A To the north of us approximately 14 --
21 approximately 1300 feet north and a little bit east of us is
22 the Union Federal 20 No. 1 Well.

23 This structure map shows that the
24 Bluestem came in slightly higher structurally than the Koch
25 Federal No. 2 and we are 31 -- yeah, 31 feet lower than the
Union Well.

1 At the time that we drilled the Bluestem,
2 we were under the impression that we'd be getting much
3 higher structurally than we actually achieved but the pur-
4 pose of this map is to show the relationship of the Bluestem
5 to the Koch Federal No. 2 and to the Union Federal Well.

6 Q When was the Koch No. 2 Well drilled, Mr.
7 Mahfood?

8 A It was drilled in December of '70 and
9 plugged sometime in '71.

10 The cumulative production was only 185
11 barrels of oil before the well was plugged.

12 Q Did they test the -- I take it it was
13 completed in the P-2 zone, the oil zone.

14 A The Koch Federal Well was completed only
15 in the P-2 Zone.

16 Q Was the P-1 Zone tested?

17 A No, it was not tested.

18 Q What zone is the Yates Bluestem Well com-
19 pleted in?

20 A The Bluestem is completed in the P-2 and
21 the P-1.

22 Q And it has been shut in.

23 A It has been shut in since September last
24 year.

25 Q All right. Now let me direct your atten-

1 tion to Section 21 to the east of the subject section, and I
2 see two wells producing in the contour 622 to 620 -- oops,
3 what's your contour?

4 A -624 to -625.

5 Q Yes. Are they gas wells?

6 A No. Or yes, I beg your pardon, yes. The
7 second well, the one in Unit C is a gas well and the one in
8 Unit D is plugged and abandoned.

9 Q Now --

10 A In 1970.

11 Q And the one in Unit C is producing gas at
12 this time.

13 A It's producing gas and a little bit --
14 some oil from the P-2 and P-1.

15 Q It's open in both zones.

16 A It's open in both zones.

17 Q Please turn to what's been marked as Ex-
18 hibit Three, your cross section, and explain what it por-
19 trays.

20 A Exhibit Three is a cross section of the
21 Koch Federal No. 2, the Bluestem "ZL" No. 1, and the Union
22 Federal 20-1.

23 It's hung on the top of the P-1, the top
24 of Slaughter, and the porosities of 3 percent or greater are
25 colored pink or red in this -- on this cross section.

1 but on examining the plugging record of it casings were cut
2 off in both the production zone and the intermediate also,
3 which made it a pretty risky prospect for re-entry.

4 Q And that's the reason, one of the reasons
5 that you moved up dip on the well.

6 A That's correct.

7 Q Were you aware of the special pool rules
8 in the Bluitt-San Andres Associated Pool?

9 A I was not aware of it when we proposed to
10 drill a lease there.

11 Q Will you turn to your Exhibit four?

12 A Exhibit Four is a production record of
13 Faskin Federal No. 1 and Federal No. 2 in the northeast --
14 northwest corner of Section 20 and of the Union Federal No.
15 1, which is the offset well to our well to the north.

16 The first page there shows the Faskin
17 wells were very puny gas wells in the P-1 zone. The maximum
18 production in January of '84, 2885 MCF for the month.

19 The Union Federal No. 20-1 is very inter-
20 esting in that we completed the Bluestem in June of '84 and
21 in July the gas production in the Union Federal started
22 climbing. At the present time the gas production of the
23 Union Federal 20 No. 1 has gone from 3 to 4 MCF a day to 70,
24 80, 90 MCF a day.

25 I have the decline curves right in behind

1 the first page there.

2 Page Two we have the Faskin No. 1, shows
3 a rapid decline in red.

4 Faskin Well No. 2, the same, a rapid de-
5 cline in the red.

6 And the Union Federal 20 shows the rapid
7 increase in gas production from that well.

8 I have asked Union if they have per-
9 forated 2 on their well. They said no, they have not.

10 I asked them if they had a little hole in
11 their casing; they didn't think they did.

12 I have to assume that the gas production
13 in their 20 is cross flow in our well from the P-1 to the P-
14 2 in our well and flowing through the P-2 into their pro-
15 ducing well.

16 Q You don't have any plugs separating your
17 P-1 and P-2, do you?

18 A No, we had no idea that the P-1 was going
19 to be a gas zone and P-2 not.

20 Q And you think that actually the migration
21 is coming through the P-2 zone from your well to the Union
22 well.

23 A I suspect so, because the bottom hole
24 pressure of this P-2 zone is only 465 pounds at the maximum.

25 Q And actually under the special pool rules

1 the Union well became classified as a gas well --

2 A That is --

3 Q -- what, in February of this year?

4 A That is correct.

5 Q Okay, let's refer to what has been marked
6 as Exhibit Five and ask you to explain these calculations,
7 if you will.

8 A Okay. Exhibit Five is a summary of a re-
9 servoir limits tests and bottom hole pressure survey that we
10 ran in the Bluestem just recently.

11 A reservoir limits test is an old tech-
12 nique that (not understood) developed back in the fifties
13 for -- for determining the communication or the extent of
14 communication in a pay zone.

15 It is not very popular in this part of
16 the country because it's difficult to run and rather expen-
17 sive.

18 However, I've gone through some calcula-
19 tions here which show me that the extent of the reservoir in
20 our well is approximately 80-1/2 acres. That's the communi-
21 cated extent of the well.

22 Beyond 80-1/2 acres the permeability be-
23 comes negligible in the P-1 zone.

24 A Horner plot was also run on this well,
25 on a build-up, which gave me the permeability, and from the

1 permeability I determined the -- the radial extent of the P-
2 1 zone and also we observed a barrier, a boundary, 61 hours
3 after we shut the well in, which computed to be 445 feet
4 from the well. I would have to assume this boundary is to
5 the southeast, southwest of our well and if you recall the
6 structure map, Exhibit Two, showing a pinchout to the south
7 and the west of our well, and that structure map was drawn
8 along before I ran this test.

9 An interesting thing about this test is
10 that if we only have 80 acres of communicated, then if we
11 assume radial flow, we won't ever reach the Union Well, but
12 that's beside the point.

13 The important thing is that if it's only
14 80 acres drainage, then we're not going to have very large
15 reserves in this well, and looking at the decline curves on
16 the Tenneco Federal 1 and 2, Faskin Federal 1 and 2, we
17 notice that their wells are not going to make more than 100
18 million cubic feet of gas apiece.

19 We have a superior well than theirs, so
20 we might make 200 or 250-million in the lifetime of the
21 well.

22 This kind of confirms that the radial ex-
23 tent of the wells are limited.

24 Q Mr. Mahfood, what's the radial extent of
25 an 80-acre circle?

1 A Roughly, I believe it's 11, around
2 1130, or something like that.

3 Q And how far away is the Union Well?

4 A 13 or 1400 feet.

5 Q Do you have an opinion as to whether the
6 approval of this application for an exception to the special
7 pool rules will protect correlative rights and prevent
8 waste?

9 A Yes, I do. I think we've already been
10 drained quite a bit and we need to protect our drainage sit-
11 uation.

12 Q I think -- were Exhibits One through Five
13 prepared by you or under your direction?

14 A They were prepared by me mostly and under
15 my direction.

16 MR. LOSEE: I move to introduce
17 Exhibits One through Five.

18 MR. STOGNER: Are there any ob-
19 jections?

20 MR. CARR: No objections.

21 MR. STOGNER: Exhibits One
22 through Five will be admitted into evidence.

23 MR. LOSEE: I think that's all
24 the direct.

25 MR. STOGNER: Mr. Carr, your

1 witness.

2

3

CROSS EXAMINATION

4 BY MR. CARR:

5 Q Mr. Mahfood, if we look at the acreage
6 that you propose to dedicate to the subject well, you are
7 330 feet the lease line, the common lease line separating
8 the Yates acreage and that operated by the Union, is that
9 correct?

10 A That's correct.

11 Q And that under the Bluit-San Andres Pool
12 Rules that the pool rules provide for a 990-foot setback
13 from the boundary of a quarter quarter section.

14 A The pool rules did state that, but I know
15 that most of the existing -- all the existing gas wells are
16 much closer than that.

17 Q When this well was originally drilled,
18 was it drilled at an orthodox location or a standard loca-
19 tion for an oil well?

20 A No. An application had been filed pre-
21 viously for a nonstandard location as an oil well.

22 Q And was that application approved by the
23 Division?

24 A No, it kept being put off and that's an-
25 other story.

1 Q And so when the well was drilled a C-101
2 and C-102 had been approved for the drilling of the well.

3 A That is true.

4 Q And it was an unorthodox well, --

5 A I beg your pardon.

6 Q That's all right.

7 A I beg your pardon, I believe you said C-
8 101 and -- the C-101 and C-102 were approved for the drill-
9 ling of the well, yes.

10 Q But was there a condition --

11 A But the allowable, the request for allow-
12 able was not approved.

13 Q Right. Thank you. But it was unorthodox
14 both for a gas well and an oil well in that area.

15 A Yes, but there is no reason to believe
16 that an oil well would not have been approved.

17 Q How many days did you actually produce
18 the well that is south and east, the plugged and abandoned
19 well south and east of the subject well? Do you know how
20 long that well was actually producing?

21 A They reported production for three
22 months.

23 Q And you may have told us already but I
24 didn't catch it. What was the total production?

25 A Cumulative production, 185 barrels of

1 oil.

2 Q Okay. That's total for the well.

3 A That's total for the well.

4 Q Now, other wells in the area are pro-
5 ducing from what would be standard -- or I'm sorry, unortho-
6 dox locations.

7 A Yes, we observe the pool rules they all
8 would be unorthodox.

9 Q Are you aware of any of those that were
10 opposed by any offsetting operator?

11 A No, I'm not aware of any.

12 Q If we look now at your -- your structure
13 map, if I read this correctly the formation drops off as we
14 move toward the south. Is -- is that correct?

15 A That is correct.

16 Q Is there -- are there any wells in this
17 producing interval south of your well for which you're seek-
18 ing the unorthodox location?

19 A Not in this field; not within a couple
20 miles.

21 Q If we go to your cross section, these
22 show that the producing intervals correlate across this
23 area.

24 A Very well; very well.

25 Q And you were -- testified that the in-

1 crease, and correct me if I'm wrong, this is how I under-
2 stood your testimony, that the increase of gas production in
3 the Union well was in your judgment the result of a cross
4 flow that was occurring as a result of the wellbore in your
5 well had to be shut in --

6 A That is correct.

7 Q -- between the P-1 and P-2.

8 A That's the only plausible explanation I
9 can come up with.

10 Q So that would show that these -- that the
11 zones in the two wells are in communication with one an-
12 other.

13 A The two zones in the two wells communi-
14 cated.

15 Q Now you've conducted a reservoir limits
16 test. When did you conduct that test?

17 A About three weeks, four weeks ago, some-
18 thing like that.

19 Q Would the fact that there was a cross
20 flow between this and the Union well affect the results of
21 that reservoir limits test?

22 A It would if we'd ever draw on our pres-
23 sure down line now to interfere with -- well, the bottom
24 hole pressure of the P-2 was, like I said, as I said, was
25 465 maximum, and when we're flowing the Bluestem the bottom

1 hole pressure barely dropped below 700 pounds.

2 Q Now based on this, this test, you stated
3 that there were 80.5 acres communicated.

4 A No.

5 Q I don't understand that term. Does that
6 mean that there were that many acres that were -- would be
7 drained by that well? Is that the acreage you'd anticipate
8 would be drained?

9 A This is the technical understanding of a
10 limits test.

11 Q So you would anticipate that your well
12 would drain the reserves from 80.5 acres.

13 A That's correct.

14 Q And you were assuming that for the pur-
15 poses of your testimony that this in fact would be a radial
16 drainage?

17 A Yes, this 80.5 we'll assume radial drain-
18 age.

19 Q And based on that your drainage radius
20 would not even reach the Union well.

21 A That is correct.

22 Q But at the present time as soon as you
23 shut in your well, there was a cross flow that affected the
24 offsetting well in just a matter of months?

25 A Yes.

1 Q Would you actually anticipate there to be
2 a radial drainage pattern in this formation from the pro-
3 posed well?

4 A Since we are not producing our well there
5 is not -- there could be no radial flow from our well. But
6 Union was producing their well. They're having radial
7 drainage in their well and in their radial drainage, one of
8 their fingers is reaching our well.

9 Q So that even though your radius, your 80
10 acre radius, would not reach their well, at least at the
11 present time when we're going from the Union well toward
12 yours, some of those gas reserves are being drained away
13 from your well.

14 A Correction. I said the 80 acres is the
15 P-1 drainage area; not the P-2.

16 Q And did you do any work on the P-2?

17 A The P-2 was perforated and acidized in
18 our well initially.

19 Q Did you estimate a radius of drainage for
20 the P-2?

21 A No, because there's no need to. We
22 didn't have enough pressure there to be of interest.

23 Q You talked about a 445 foot boundary.

24 A Yeah.

25 Q Now what does that mean?

1 A Well, it -- this boundary technically
2 would be a fault but on one of these limits tests, it could
3 be just a gas, a build-up of a gas front, or something.

4 Q Would anticipate that you would be drain-
5 ing beyond that 445 foot boundary?

6 A I assume that we are.

7 Q And so what --

8 A I have to assume that the boundary is a
9 gas boundary.

10 Q And you are assuming that that is to the
11 south.

12 A To the south and west.

13 Q And upon what do you base that?

14 A Beg pardon?

15 Q And on what do you base that conclusion
16 that --

17 A Just from the structure map. Again the
18 structure map is the geological interpretation.

19 Q Just one second.

20 MR. CARR: I have no further
21 questions.

22 MR. LOSEE: A few questions on
23 redirect, Mr. Stogner.

24 MR. STOGNER: Mr. Losee.

25

REDIRECT EXAMINATION

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BY MR. LOSEE:

Q I am not sure that in view of Mr. Carr's question the record is clear. Yates did not drill the Koch Delaware Apache Well that's the location 660 from the --

A No, we did not drill that well.

Q It was drilled by Koch and --

A Delaware Apache, yeah, the Delaware Apache.

Q Okay, and they did not test the P-1.

A They did not test the P-1.

Q And they only acidized the P-2.

A This is correct.

Q From which they recovered 185 barrels of oil before they plugged it.

A This is correct.

Q Now Mr. Carr asked you the question of whether or not there were any wells producing south of your Yates Petroleum Well and your answer was no. I want to make sure that he'd referring to the direction south and not to structurewise, because earlier you testified structurewise that your Flatsedge Well in Section 21 was producing gas.

A Down structure. It's a down structure well but it is not south; not south. It's within the this reservoir, this Bluit Field reservoir.

1 Q But it's structurewise, that -- it's pro-
2 ducing from a structure lower than your Yates Petroleum Cor-
3 poration well.

4 A Yes, that is correct.

5 Q Now, is there a barrier between the -- in
6 the Slaughter between the P-1 and P-2 zones?

7 A There are impermeable intervals, yes, be-
8 tween the P-1 and P-2.

9 Q And when you referred to the migration of
10 gas from your well to the Union well, what zone were you
11 saying that migration was occurring in?

12 A Okay, the gas from the P-1 is flowing in-
13 to the P-2 zone in our well, because all three zones are
14 open in our well, and it's migrating through the P-2 poro-
15 sity, which is being drained by the Union well.

16 Q Okay, now why is that migration, in your
17 opinion, occurring, if it is?

18 A Because our zone is already pretty well
19 drained by offset wells.

20 Q And the pressure is lower in the P-2 than
21 it is in your P-1.

22 A That is correct.

23 Q And that would be the natural flow of the
24 gas when both of them are in communication in the wellbore.

25 A That is very true.

1 Q So that your testimony was not that the
2 gas flow was flowing in the P-1 from your well to the Union
3 well.

4 A Not through the P-1, no.

5 MR. LOSEE: I think that's all.

6 MR. CARR: No questions.

7

8 CROSS EXAMINATION

9 BY MR. STOGNER:

10 Q Mr. Mahfood.

11 A Yes, sir.

12 Q In Exhibit Number One you show an 80-acre
13 nonstandard proration unit marked in my exhibit as purple.

14 A Yes, sir.

15 Q And take 40 acres in in Section 17 that
16 combines with the 40 acres in Section 20.

17 Do you know the order number that ap-
18 proved that nonstandard proration unit?

19 A No, sir. I -- I discovered this last
20 year when we applied for an oil exception, you know, for an
21 oil spacing in ours.

22 Q Okay. Now there's two wells, one being
23 in the far southwest-- I'm sorry, southeast quarter south-
24 east quarter of Section 17, the No. 2 Well, and then the
25 other one being in the northeast quarter northeast quarter

1 of Section 20, the Flag Redfern.

2 Q Could you tell me about those two wells?

3 A I think they have the same cross -- cross
4 section line there that goes through that 80 is (not under-
5 stood) for those two wells.

6 Q And do you know the nonstandard proration
7 order that approved the Texaco in the -- I'm sorry, the Ten-
8 neco wells in the northwest quarter of Section 20?

9 A Yes, sir, I do. I have it written here
10 on one of my exhibits.

11 Yes, sir, that's NSP 1432-LFD, dated 8-8-
12 84.

13 Q Thank you. In Exhibit Five, you show you
14 limits or the area of drainage in the P-1 only as 80.5
15 acres, is that right?

16 A That's the calculation I came up with,
17 yes, sir.

18 Q From your testimony you stated, I be-
19 lieve, that the oil well shown on your Exhibit Number Two,
20 with the exception of the Yates Well, is producing from just
21 the P-2 only, is that correct?

22 A The Koch Federal, the well 660 from the
23 section line was completed in the P-2 only and it was plug-
24 ged, It was completed in January of '71 and plugged in
25 March or April of '71.

1 Q Let me rephrase that question. Is there
2 any other wells that are producing from the P-1?

3 A The Tenneco wells are in the northwest
4 quarter of Section 20.

5 And in Section 21 we have one well in
6 there, the Flatsedge that's also producing from the P-1.

7 Q What separates the P-1 and P-2?

8 A Some of the nitrite rock that is
9 impermeable.

10 Q And on Exhibit Number Three, on your log
11 does that shows to be about 4680 feet? Roughly?

12 A That would be roughly, yes, sir. 47 -- I
13 beg your pardon. The separation would be at 4733 or 34 feet
14 to 4760.

15 Q Oh, okay. I was reading that P-2 was
16 right in the middle of your formation when really the num-
17 ber P-2 or the figure P-2 appears on the top --

18 A That's on the top of the P-2.

19 Q Okay.

20 A Yes, sir.

21 Q Thank you for straightening me out on
22 that.

23 You feel the area of drainage from just
24 the P-2 completion would be more than 80 acres?

25 A From the P-1. The P-1 --

1 Q I'm asking about the P-2.

2 A No, sir. No, I'm sure from the studies
3 of our -- from the depleted condition of our well we have
4 considerable more drainage area. Our area has already been
5 depleted and it would not produce in the Koch; only produced
6 185 barrels of oil.

7 You'll note we have tremendous porosity
8 in our well in the P-2 Zone.

9 Q Uh-huh.

10 A So I'm not surprised that there is
11 tremendously better permeability and communication through-
12 out the P-2 Zone in this field.

13 Q What 80 acres was dedicated to this well
14 before it became a gas well?

15 A I assume the horizontal 80 was probably
16 dedicated to it. That was not our well so I don't really
17 know.

18 Q When did Yates Petroleum acquire the
19 Bluestem "ZL" number?

20 A Sometime after the well was plugged and I
21 was only aware of it -- I was only aware of it recently.

22 MR. LOSEE: The Bluestem. He
23 wants to know what did Yates dedicate to it.

24 Excuse me, Mr. Stogner.

25 He wants to know what you dedi-

1 cated to the well when you thought it was an oil well.

2 A Oh, We were dedicating a vertical 80 and
3 that would be -- that would be the Unit G and J, Section 20.

4 Q Okay, what was the nonstandard proration
5 unit order that approved that one?

6 A I'm sorry, I don't believe we had a non-
7 standard approval yet; it was pending.

8 Q It was pending.

9 A We had a short fuse on this well. We had
10 to drill it or lose a lease.

11 Q You mean re-enter it?

12 A Re-enter or drill a new well.

13 MR. LOSEE: Excuse me, just a
14 second.

15 They didn't re-enter -- Yates
16 didn't re-enter a well, Mr. Stogner.

17 They drilled. The Bluestem is
18 a new well completely.

19 A The Koch Federal would have been a re-
20 entry.

21 MR. LOSEE: If they had re-en-
22 tered the Koch, that would have been a re-entry.

23 A The Koch well is the one that's 660 from
24 the boundary.

25 Q When you say you'd lose a lease, what

1 area would that lease encompass?

2 A The 160 acres that were to be dedicated
3 to the Bluestem, outlined in red on Exhibit Number Two.

4 Q Okay. Let's go to Exhibit Number Four.
5 Where are the Faskin Federal Nos. 1 and 2 Wells located?

6 A They are in the northwest -- the north
7 half of the northwest quarter of Section 20. In Unit C and
8 Unit D of Section 20.

9 MR. STOGNER: I have no further
10 questions of Mr. Mahfood.

11 Any further questions of this
12 witness?

13 MR. CARR: No questions.

14 MR. LOSEE: No questions at
15 this time.

16 MR. STOGNER: He may be ex-
17 cused.

18 MR. LOSEE: I want to save him
19 for possible redirect, Mr. Examiner.

20 MR. STOGNER: Thank you, Mr.
21 Losee. Is this all your witnesses?

22 MR. LOSEE: Yes, sir.

23 MR. STOGNER: Mr. Carr, your
24 witness.

25 MR. CARR: At this time I'd

1 call Mr. McKeel.

2

3

BURL KEITH MCKEEL,

4 being called as a witness and being previously sworn upon

5 his oath, testified as follows, to-wit:

6

7

DIRECT EXAMINATION

8 BY MR. CARR:

9

Q Will you state your full name and place

10 of residence?

11

A I'm Burl Keith McKeel. Live in Midland,

12

Texas.

13

Q By whom are you employed?

14

A Union Oil of California.

15

Q And in what capacity?

16

A Geologist.

17

Q Mr. McKeel, have you previously testified

18 before this Division?

19

A No, I have not.

20

Q Would you review your educational back-

21 ground and summarize your work experience for Mr. Stogner,

22

please?

23

A I graduated in 1966 with a BS degree in

24

geology from Oklahoma State University.

25

The last nineteen years I have worked for

1 Lone Star Producing, U. S. Atomic Energy Commission, and for
2 the last eight years for Union Oil.

3 The last four of that has been in the
4 Permian Basin of Texas and New Mexico.

5 Q And has your area of responsibility in-
6 cluded that acreage which is the subject of today's hearing?

7 A Yes, it has.

8 Q Are you familiar with the application
9 filed by Yates in this case?

10 A Yes, I am.

11 MR. CARR: We tender Mr. McKeel
12 as an expert witness in petroleum geology.

13 MR. STOGNER: How do you spell
14 your last name?

15 A M-c-K-E-E-L.

16 MR. STOGNER: Are there any ob-
17 jections?

18 MR. LOSEE: No objections.

19 MR. STOGNER: Mr. McKeel is so
20 qualified.

21 Q Mr. McKeel, would you state briefly what
22 Union seeks in this hearing today?

23 A We are seeking the imposition of a penal-
24 ty on the Yates Bluestem "XL" No. 1 Well to protect our own
25 correlative rights.

1 Q Have you prepared certain exhibits for
2 introduction in this case?

3 A Yes, I have.

4 Q Would you refer to what has been marked
5 for identification as Union Exhibit Number One, identify
6 this and review it for the Examiner, please.

7 A Exhibit Number One is a structure map
8 which is contoured on top of the Todd pay zone, which has
9 been referred to in these hearings as the P-2 zone.

10 The contour interval on this map is 25
11 feet. The red arrow will point to the Yates Bluestem Well
12 in question.

13 As you might notice here, as you do on
14 the other structure map, that we have dips in this area are
15 generally to the south in the area of the Bluestem Well, and
16 further to the south that dip increases substantially.

17 Q On this plat have you indicated the pro-
18 ducing interval or the depth of each of the wells producing
19 in the area?

20 A The numbers, the subseas there are on top
21 of the Todd pay, which is the P-2 pay zone.

22 Q Other than the well in the northeast of
23 the northeast of 20, are any of these wells at a lower in-
24 terval or a deeper interval than the Yates proposed -- or
25 the Yates well?

1 A The Federal Koch No. 2 is -- has a lower
2 subsea. It's been a sub-economical well.

3 Q And the well in the northeast of the
4 northeast of 20, does it also have a lower subsea?

5 A No, it does not.

6 Q What is the primary producing horizon in
7 this area?

8 A The main producing horizon, the main pro-
9 ducing formation is the San Andres formation and the hori-
10 zons within that are referred to as the P-1, which is the
11 Nola sand, and P-2, Todd sands.

12 Q Would you now refer to Exhibit Number Two
13 and review this, please?

14 A Exhibit Number Two is a structural cross
15 section through the Koch Federal No. 2 Well, northward to
16 the Yates Bluestem, and northward to the Union Federal 20
17 No. 1 Well.

18 The perms, perforations, those are shown
19 in green. The porosity is shown in red. We can see from
20 this cross section that indeed the porosity zones are very
21 continuous, not only to the Union Number 20 Well but even
22 further northward.

23 Q In your opinion how important is struc-
24 ture in determining whether or not you make a successful
25 well in the area?

1 A This pool is considered to be both a
2 structural and stratigraphic field.

3 To the north of the area we find that the
4 production is limited due to loss of porosity and permeabil-
5 ity.

6 To the south we find that the production
7 is limited by structural position.

8 Q And what general conclusions can you draw
9 about this area from your study?

10 A We find that the porosity zones are very
11 continuous in the P-1 and P-2 and in general we find that
12 the acreage to the south of the subject well can be expected
13 to and generally be sub-economic due to the poor structural
14 position, and therefore the primary drainage of that well
15 will be from the north.

16 Q Mr. McKeel, does Union plan to call an
17 engineering witness to testify in this case?

18 A Yes, we do.

19 Q Were Exhibits One and Two prepared by
20 you?

21 A Yes, they were.

22 MR. CARR: At this time we
23 would offer into evidence Union Exhibits One and Two.

24 MR. STOGNER: Are there any ob-
25 jections?

1 MR. LOSEE: No objection.

2 MR. STOGNER: Exhibits One and
3 Two will be admitted into evidence.

4 Mr. Losee, your witness.

5 MR. LOSEE: Just a moment, Mr.
6 Examiner.

7
8 CROSS EXAMINATION

9 BY MR. LOSEE:

10 Q Mr. McKeel, one question, and maybe one
11 related question.

12 Mr. Mahfood testified that the Flatsedge
13 well in Section 21 to the east, which is a -- producing as a
14 gas well, is structurally -- his Exhibit P-2 showed -- or
15 Exhibit Two shows that it's structurally lower than both the
16 Yates Well and the plugged Koch Well in Section 20.

17 Do you disagree with his structure on the
18 top of the Slaughter?

19 A No, that's (not understood.)

20 Q So that the gas zone lower structurally
21 than the Yates Well is economical or at least producing com-
22 mercially at this point in the Flatsedge Yates Well, which
23 is structurally lower.

24 A It is producing and is structurally
25 lower, yes.

1 MR. LOSEE: That's all the
2 questions I have.

3 MR. CARR: No further ques-
4 tions.

5

6

CROSS EXAMINATION

7 BY MR. STOGNER:

8 Q Mr. McKeel.

9 A Yes, sir.

10 Q Does your Exhibit Number Two, your P-1
11 Zone correspond with Mr. Mahfood's P-1 and P-2 separation?

12 A We're pretty much in agreement as far as
13 the porosity zones, but what you're -- on the separation,
14 oh, yes, sir, they are separated.

15 Q Is the gas zone encountered in P-1 or P-2
16 most generally?

17 A P-1 is generally a gas zone.

18 Q How about your P-2?

19 A P-2 is generally an oil zone.

20 Q An oil zone in this pool is dedicated to
21 how many acres?

22 A 80 acres.

23 Q And it's assumed to drain 80 acres, is
24 that right?

25 A Yes, sir.

1 MR. STOGNER: No further ques-
2 tions.

3 MR. CARR: At this time I'd
4 call Mr. Duff.

5
6 TED EDWARD DUFF,
7 being called as a witness and being duly sworn upon his
8 oath, testified as follows, to-wit:

9
10 DIRECT EXAMINATION

11 BY MR. CARR:

12 Q Will you state your full name and place
13 of residence?

14 A Ted Edward Duff, Midland, Texas.

15 Q By whom are you employed?

16 A Union Oil of California.

17 Q And in what capacity?

18 A Petroleum engineer.

19 Q Have you previously testified before this
20 Division?

21 A No, sir.

22 Q Would you review your educational back-
23 ground and summarize your work experience for the examiner?

24 A I received a BS degree in petroleum en-
25 gineering from New Mexico Institute of Mining and Technology

1 in May, 1982, and have since been employed by Union Oil.

2 Q Are you familiar with the Yates applica-
3 tion in this case?

4 A Yes, I am.

5 Q And are you familiar with the subject
6 area?

7 A Yes, I am.

8 MR. CARR: We tender Mr. Duff
9 as an expert witness in petroleum engineering.

10 MR. STOGNER: Are there any ob-
11 jections?

12 MR. LOSEE: No objection.

13 MR. STOGNER: Mr. Duff is so
14 qualified.

15 Q Mr. Duff, are there there special rules
16 in effect for the Bluit-San Andres Pool?

17 A Yes, there are. In addition to the
18 statewide rules we have General Associated Oil and Gas Pool
19 rules and special pool rules for the Bluit-San Andres.

20 Q Have any of these rules been changed re-
21 cently?

22 A No, they have not.

23 Q What are the spacing requirements for
24 wells in this area?

25 A For gas wells they're dedicated 320 acres

1 and they'll be drilled no closer than 990 feet from the
2 quarter section line, nor closer than 330 feet to the quar-
3 ter quarter section line.

4 Q What is the spacing unit provided for by
5 these rules for gas wells?

6 A 320 acres.

7 Q And how many acres are in the proposed
8 unit?

9 A The proposed unit is 160 acres.

10 Q If Yates had drilled this well on a
11 standard quarter section, how far from the lease line would
12 the well have needed to be located to be at a standard loca-
13 tion?

14 A If the well was drilled either on a
15 standard governmental quarter section, 160 or 320, with
16 standard governmental quarter sections, it would need to be
17 990 feet from the lease line.

18 Q And since this well isn't on a standard
19 location, how far back from the lease line do you believe
20 the well should be located to reflect the intent of these
21 rules?

22 A We would interpret it, the rules to pro-
23 vide for a well no closer than 990 feet from a lease line.

24 Q Would you refer to what's been marked as
25 Union Exhibit Three, identify this and review it for Mr.

1 Stogner?

2 A I've shown here a curiosity plat of the
3 area. The Yates No. 1 "ZL" is shown under the red arrow and
4 Union's acreage is shown outlined in yellow.

5 Additionally on this I've put the date
6 of first production, cumulative oil, thousands of barrels of
7 oil, current production as of January of 1985.

8 Q Will you now go to what has been marked
9 as Union Exhibit Number Four and identify this?

10 A Number Four is a plat showing the dis-
11 tances from the lease line for the Yates No. 1 "ZL" and for
12 a legal location, and additionally it shows the distance be-
13 tween the two.

14 Q And the Yates well is classified as a gas
15 well?

16 A Yes, it is.

17 Q Do you believe that production from the
18 Yates well, which is the subject of today's hearing, should
19 be restricted by a penalty due to its unorthodox location?

20 A Yes, and we -- because we believe that it
21 will drain reserves from Union's acreage and it could not be
22 offset with counter-drainage.

23 Q To offset it with counter-drainage, it
24 would require the drilling of another well, would it not?

25 A Yes, it would, and we believe that would
be wasteful.

1 Q If a penalty is imposed on production
2 from the well, can you recommend to Mr. Stogner how that
3 limitation figure should be obtained?

4 A We would recommend the production limita-
5 tion factor to be used against this well under an accepted
6 method that has been before the Commission and has been ac-
7 cepted

8 Q Would you go to Exhibit Five and also Ex-
9 hibit Six and review how you have calculated the proposed
10 penalty?

11 A Okay. Exhibit Number Five is a calcula-
12 tion sheet which shows the individual calculations to come
13 up with a production limitation factor.

14 This is broken down into three separate
15 factors, the first being a north/south factor; the second is
16 an east/west factor; and the third is a net acre factor.

17 The north/south factor is calculated from
18 surface difference between a legal location and where the
19 well was drilled and it calculates at 330 feet over 990 feet
20 and expressed in a percentage as 33.33 percent.

21 Additionally, the east/west factor is
22 calculated the same way and in this case is the same factor
23 of 33.33 percent.

24 Now the net acre factor is calculated and
25 is shown on Exhibit Number Six.

1 What we do on net acre is assume a radial
2 drainage equal to a standard gas proration unit of 320 ac-
3 res, and I've drawn two circles on this exhibit, one cen-
4 tered at a legal location and one centered at the Yates No.
5 1 "ZL".

6 Q When you say "legal location" you mean a
7 location 990 from the -- from the lease line.

8 A Yes, sir.

9 And these would represent the drainage at
10 each location.

11 Now, shaded in blue on this is the over-
12 lap from the 990 location to the 330 location and on my cal-
13 culation sheet I've calculated the acres involved in that
14 shaded area and it came out to 88.03 acres.

15 The 88.03 acre represents 27.51 percent
16 of a standard 320-acre proration unit.

17 This would result in a net acre factor of
18 72.49 percent penalty.

19 Now, for the production limitation fac-
20 tor, we add up the three different separate factors, take
21 the arithmetic average, and that gives us 46.38 percent for
22 a standard 320-acre proration.

23 For 160-acre proration unit we would di-
24 vide that in half and that would result in 23.19 percent
25 limitation factor.

1 Q And is it your recommendation, then, that
2 the well's production, that a well be able to produce 23.19
3 percent of its capability?

4 A Yes, it is.

5 Q Is this a prorated pool?

6 A No, sir.

7 Q How do you recommend the penalty be as-
8 sessed against the well?

9 A We would recommend that a production lim-
10 itation penalty be applied against a well's ability to pro-
11 duce into a pipeline as determined by semi-annual deliver-
12 ability test.

13 Q Mr. Duff, what effect would imposing this
14 penalty have on the correlative rights of Union?

15 A We feel that it would protect our right
16 to an equal opportunity to produce the hydrocarbons under
17 our acreage without waste.

18 Q Do you believe granting this application
19 with the penalty that you recommend, would then prevent
20 waste and protect correlative rights?

21 A Yes, we do.

22 Q Were Exhibits Three through Six prepared
23 by you or under your direction and supervision?

24 A Yes, they were.

25 MR. CARR: At this time I would

1 offer into evidence Union's Exhibits Three through Six.

2 MR. STOGNER: Any objection?

3 MR. LOSEE: No objection.

4 MR. CARR: That concludes my
5 direct of Mr. Duff.

6 MR. STOGNER: Mr. Losee.

7

8 CROSS EXAMINATION

9 BY MR. LOSEE:

10 Q Mr. Duff, is your Union 1-20 Well open in
11 both the P-1 and P-2 zones?

12 A Our No. 1-20 Well is open in the P-2 zone
13 only.

14 Q Have you -- when you drilled the well did
15 you test the P-1 zone?

16 A No, we didn't.

17 Q Do you have any plans to open it in the
18 P-1 zone?

19 A We are currently evaluating that. Addi-
20 tionally I might add that we are looking at the area in gen-
21 eral for secondary operations.

22 Q But would those secondary operations be
23 in the P-1 or the oil zone, the P-2?

24 A They would be in the P-2, but if the P-1
25 was open it might complicate that, and that's being eva-

1 luated.

2 Q So at this point you don't have any plans
3 to open the so-called P-1 gas zone?

4 A None other than our continued evaluation.

5 Q Looking at your radial drainage circle,
6 your Exhibit Six, most of the blue area, which is your
7 interpretation of the excess area being drained at the Yates
8 location, is actually located over in the Tenneco acreage,
9 is it not?

10 A Some of it is, yes.

11 Q And that's where Tenneco -- well, the
12 greatest -- strike that question.

13 The majority of the blue area is over in
14 the Tenneco acreage, is it not?

15 A Yes, it is.

16 Q Tenneco has these two marginal gas wells
17 completed in the P-1, is that correct?

18 Q Yes, sir, they're only completed in the
19 upper portion of the P-1.

20 A Is the production commercial at this
21 time?

22 A Yes, sir.

23 Q Actually, what is dedicated to those two
24 wells?

25 A 160 acres for both wells.

1 Q And Tenneco received approval of this
2 Commission last fall to complete those two wells, simultan-
3 eous dedicate 160 to them.

4 A Yes, sir.

5 Q Did Union object to those wells?

6 A No, we did not know of the hearing.

7 Q Have you filed any objection since you
8 knew of their approval of the application?

9 A No, not after they were approved.

10 Q Mr. Duff, are you familiar with the Oil
11 Commission Order 5353?

12 A Yes, sir.

13 Q Would you in general terms explain what
14 that order did, not with respect to each pool but generally
15 describe what the order did?

16 A It abolished the original Bluit-San An-
17 dres Gas and East Bluit-San Andres Oil Pools and created
18 and adopted operating rules for the Bluit-San Andres Asso-
19 ciated Pool.

20 Q Did it also adopt general pool rules for
21 a number of associated pools?

22 A Yes, sir, it did.

23 Q It in effect codified a number of orders
24 the Commission had entered over a number of years, did it
25 not?

1 A Yes, sir.

2 Q Did it make any provision for gas wells,
3 spacing of gas wells, general provision?

4 A The rule made general proration unit and
5 location requirements for the -- for a number of associated
6 gas and oil pools, and additionally, it gave special pool
7 rules on some oil wells.

8 Q Now as far as the general rules were con-
9 cerned, did it provide for any 160-acre gas well spacing?

10 A Yes, sir, it did. If the standard unit,
11 standard proration unit was 160 acres it has a location re-
12 quirement of 150 feet from the center of a quarter quarter.

13 Q Okay, so that would be 510 feet from a
14 boundary and you would -- it would be a legal location under
15 the general pool rules of the associated pools.

16 A Yes, sir, from one boundary it would be
17 510.

18 Q Well, you can have a location 150 feet
19 from the center of the quarter section and be 510 feet from
20 two boundaries, can you not?

21 A Yes, I believe that is correct.

22 Q And if that were a legal location for the
23 Yates Bluestem Well, your calculations on Exhibit Five as
24 990 feet would be in error, would it not?

25 A Will you repeat the question, please?

1 Q If a legal location for this well on 160-
2 acre spacing in the associated general pool order was 510
3 feet from the north and 510 feet from the west line, if that
4 were the legal location, your calculations on Exhibit Five
5 would be incorrect insofar as they used a 990 location,
6 would they not? Would they not?

7 A They would have to be adjusted on each
8 factor to reflect the distance from the lease lines and the
9 distance from where a well should have been drilled.

10 Q Now your calculation of a net acreage
11 factor is based on a 320-acre calculation, is it not?

12 A Yes, sir.

13 Q Your Exhibit Six has two 360-acre radial
14 drainage areas, does it not?

15 A Yes, it does.

16 Q And your net acreage factor penalty,
17 which I believe you said was 72.49 percent, actually your
18 exhibit shows it to be 27.51 percent.

19 A The 27.51 percent is amount of encroach-
20 ment gained by drilling the well closer, 330 from the west
21 lines instead of 990, and you express that in a percentage
22 of a standard proration unit, and it's 27.51 percent.

23 And that would be what we ask be pena-
24 lized on that factor; therefore the production limitation
25 would be that minus 100 percent of 72.49.

1 Q Okay. Now, let me ask the next question.
2 If the radial drainage area is calculated
3 on 160 acres, would you have the same net acre area factor
4 if you had two 160-acre circles?

5 A No, sir, it would be different and it
6 could be calculated by the equation I've given in the exhi-
7 bit.

8 Q But it would be a lesser so-called penal-
9 ty, would it not?

10 A I would have to calculate it to answer
11 that.

12 Q Well, let's think about it just a minute.
13 If you've got two circles, one that drains a 320-acre radial
14 area, and one that drains 160, that 160 radial area will be
15 smaller, will it not?

16 A I would rather calculate it before I an-
17 swer.

18 Q Okay. So that in effect your suggestion
19 is that you calculate the net acre factor on a 320-acre
20 basis rather than 160, which I submit to you the 160 would
21 be a lessor penalty, and then when you apply the total pro-
22 duction limitation factor, you use the 320-acre and reduce
23 it again in half.

24 I suggest to you that that's a double
25 penalty for the size of the nonstandard unit at 160 acres,

1 is it not?

2 A No, I wouldn't believe it would be.

3 We're assuming a 320 radial drainage no
4 matter how much acreage is dedicated to the wells.

5 So that's what we used to calculate the
6 net acre factor.

7 And then when you do dedicate less ac-
8 reage to the well, that needs to be adjusted further.

9 Q Do you think that P-1 zone is going to
10 drain 320 acres in this area?

11 A No, I don't. I've used this formula be-
12 cause it has been accepted before the Commission before, and
13 it assumes radial drainage, which is in question, and the
14 total amount of acreage, which could be in question, but I
15 would actually feel that the southern part of these circles,
16 the well is not going to drain that and that most of the
17 drainage is going to come from due north on our acreage;
18 however, I've used the assumption of radial drainage on the
19 exhibit.

20 Q Most of it's really going to come from
21 Tenneco's, is it not?

22 A I would assume just as much would come
23 from up north from our acreage as from Tenneco.

24 MR. LOSEE: I have no further
25 questions at this time, Mr. Examiner.

1 MR. CARR: I have a few.

2 MR. STOGNER: Mr. Carr, any re-
3 direct?

4 MR. CARR: I do, Mr. Stogner.
5

6 REDIRECT EXAMINATION

7 BY MR. CARR:

8 Q Mr. Duff, at this time can you rule out
9 that Union would in the future have plans to attempt to com-
10 plete the existing well, oil well, that they -- or the
11 existing well they have in Section 20 in the P-1 zone?
12 Could you rule that out at this time?

13 A No, sir. We're evaluating that current-
14 ly.

15 Q If the -- Mr. Losee has asked a number of
16 questions about the formula that you have used.

17 In your opinion is use of this formula
18 unfair to Yates?

19 A No, sir, I think it would help them by
20 the inclusion of the southern acres, which is questionable.

21 Q If in fact the spacing is other than 320
22 and the drainage spacing is other than 320 and the well lo-
23 cation requirements are different than those used in your
24 calculations, is it your recommendation that the same ap-
25 proach be used in setting a penalty?

1 A Yes, it is.

2 MR. CARR: I have no further
3 questions.

4

5 RE CROSS EXAMINATION

6 BY MR. LOSEE:

7 Q Mr. Duff, you say that Tenneco has -- or
8 I mean, not Tenneco, Union has not made a determination
9 whether they're going to recomplete the well in the P-1
10 zone.

11 Did Yates offer you the opportunity to
12 participate in this Bluestem Well?

13 A No, sir, not prior to the well being
14 drilled.

15 Q Well, after the well was drilled did they
16 offer you that?

17 A Yes, they did; however, the general pool
18 rules require that you cannot simultaneously dedicate oil
19 well and gas wells on the same acreage.

20 Q Did you decline the offer of Yates to
21 participate in that gas well?

22 A After the well was drilled?

23 Q Yes, sir.

24 A Yes.

25 MR. LOSEE: I have no further
questions.

1

2

MR. STOGNER: Mr. Carr, any

3

more redirect?

4

5

CROSS EXAMINATION

6

BY MR. STOGNER:

7

Q

Mr. Duff, let's go to Exhibit Number

8

Three, the yellow shaded area or yellow outline, what does

9

that mean?

10

A

That represents the Union 100 percent ac-

11

reage.

12

Q

And who controls the northeast of the

13

northeast quarter of Section 20, Unit A?

14

A

That originally was controlled by Flag

15

Redfern and I believe after the well had been P&A'd it is

16

open acreage, or will become so.

17

Q

The well to the north of that, marked 2-A

18

in Section Number 17.

19

A

Yes, sir.

20

Q

What acreage dedication is given that?

21

A

That's a stand-up 80.

22

Q

Taking in what acreage?

23

A

It takes in the 40 acres around the 2-A

24

and the 40 aced due north of the 2-A.

25

Q

That's a standard 1 -- standard 80-acre

1 oil proration unit, isn't it?

2 A Yes, sir.

3 Q Could you give me the order number that
4 approved a nonstandard 80-acre proration unit that is dedi-
5 cated to the Union Well No. 1 in Section 20?

6 A No, sir, I don't have that with me.

7 MR. CARR: We'll be happy to
8 supply that, Mr. Stogner, after the hearing.

9 MR. STOGNER: Thank you, Mr.
10 Carr.

11 Q Let's refer now to R-5353. It's not made
12 an exhibit but you alluded to that, sir, did you not?

13 A I was asked about it.

14 Q Well, what does that order say about gas
15 wells locations?

16 A Gas wells under the Bluit-San Andres
17 should be under the special pool rules, which overlie the
18 general pool rules when in conflict and they state that for
19 gas wells they shall be no closer than 990 feet to the
20 quarter section line, nor closer than 330 feet to any
21 quarter quarter section line, and this in effect requires a
22 well on a standard governmental quarter section to be 990
23 from the lease line.

24 Q Repeat this again.

25 A The whole thing?

1 Q No, just what you said, that last
2 sentence.

3 A That in effect requires a well on stand-
4 ard governmental quarter sections to be 990 feet from lease
5 lines.

6 Q What do you think they are?

7 A A well, gas well, is to be dedicated on
8 two continuous, standard, governmental quarter sections,
9 comprising 320 acres, and if this was a standard quarter
10 sections, then the well would be 990 feet from the lease
11 line.

12 Q Okay. On Exhibit Number Four, Unit B of
13 Section 20, which is operated by Union, the southernmost
14 boundary, that is your lease line, is that right?

15 A Would you repeat the question, please?

16 Q Okay, on Exhibit Number Four.

17 A Uh-huh.

18 Q Unit B of Section 20, that's the 40 acres
19 dedicated to -- or the 40-acre half dedicated in Section 20
20 to your Well No. 1, the southernmost --

21 A Yes, sir.

22 Q -- boundary, that is your lease line, is
23 it not?

24 A Yes, sir.

25 Q Is that also a quarter quarter section

1 line?

2 A Yes, sir.

3 Q Okay.

4 MR. STOGNER: I have no further
5 questions of this witness.

6 MR. LOSEE: I've got a couple
7 brief -- one or two questions.

8

9 RECROSS EXAMINATION

10 BY MR. LOSEE:

11 Q How far are you from -- is your Union
12 Well from the south line of your 40-acre tract?

13 A I don't have the exact location with me,
14 but it appears to be 660 feet from each line and within 150
15 feet of the center of the quarter quarter.

16 Q Under your construction of the pool rules
17 that wouldn't be a legal location for a gas well, would it?

18 A No, sir, it would not.

19 MR. LOSEE: I think that's all.

20

21 REDIRECT EXAMINATION

22 BY MR. CARR:

23 Q That would be a standard location for an
24 oil well?

25 A Yes, sir.

1 MR. LOSEE: Mr. Examiner.

2 MR. STOGNER: Yes, Mr. Losee.

3 MR. LOSEE: I have about ten
4 minutes of rebuttal, five minutes, maybe.

5 MR. STOGNER: Okay, let's go
6 ahead and continue with this case and then after we get
7 through with this one, we'll take an extended break.

8 Mr. Duff, you may step down.

9

10 EDDIE MAHFOOD,

11 being recalled as a witness and being still sworn upon his
12 oath, testified as follows, to-wit:

13

14 REDIRECT EXAMINATION

15 BY MR. LOSEE:

16 Q Mr. Mahfood, would you refer to what has
17 been marked as Yates Exhibit Number Six and let me ask you
18 first whether Yates believes that any penalty should be im-
19 posed on this well?

20 A We believe that some penalty would be im-
21 posed on this. We are not objectin to a penalty.

22 Q All right. Have you made a calculation
23 as to what you believe would the appropriate penalty on this
24 well?

25 A Yes, I have.

1 Q And is that portrayed on your Exhibit
2 Six?

3 A Yes, that is correct.

4 Q All right, are you familiar with Commis-
5 sion Order 5353?

6 A Yes, sir, I am.

7 Q Are you familiar with the provisions of
8 that rule insofar as it applies generally to gas wells on
9 160 acre spacing?

10 A Yes, sir, it says you can drill within
11 150 feet of the center of that 40 which would put it 510
12 feet from the lease line.

13 Q All right, sir, your calculations as to
14 the north/south and east/west factor are based upon a 510
15 legal location.

16 A Yes.

17 Q And your well is actually located 330
18 feet?

19 A That is correct.

20 Q All right, what would be the penalty fac-
21 tor on the north/south location?

22 A The difference between the 510 and the
23 330 is 180, divided by 510 you come up with 35.3 percent
24 penalty.

25 Q All right. Now, with the area drain fac-

1 tor, the difference between the area drained at a 330 loca-
2 tion and a 510 location on 160-acre spacing?

3 A Okay. In yellow I have the calculation
4 drained outside the lease at 4,088,276 square feet, and
5 that's in yellow.

6 The 510 location, I come up with the area
7 drained off the lease at 3,391,920 square feet. That's out-
8 lined -- that's scored in orange.

9 The difference between the yellow and the
10 orange numbers is 696,356 square feet, which is approximate-
11 ly 10 percent of the square feet in 160 acres; therefore, I
12 feel like we should be penalized only 10 percent on the ac-
13 reage basis.

14 Q All right, now what is your total penalty
15 calculating a north/south, an east/west, and an acreage fac-
16 tor?

17 A If we take the average of the three fac-
18 tors there, we come up with 26.88 percent penalty, which
19 means that we should be able to produce 73.2 percent,
20 approximately of the well's capacity -- capability.

21 Q Now, Mr. Mahfood, when you originally
22 produced that well, what rate was it producing at?

23 A Roughly 600 a day.

24 Q Do you feel that there is a -- based on
25 this penalty -- there should be a minimum penalty assessed

1 against the well or a minimum volume that it can produce?

2 A Yes. I think we should not be penalized
3 on a volume less than 200 a day.

4 Q And for what reason do you think that it
5 should not be penalized below 200 a day?

6 A Well, for one, we need to pay for the
7 well and that would be one way to get --

8 Q Would that be premature abandonment, re-
9 sult in premature abandonment of the well?

10 A Yeah, less than 200 a day would make a
11 well uneconomical.

12 Q And if it were plugged, there would be
13 some recoverable gas below the 200 a day that would result
14 in waste?

15 A Well, in addition to this now, we have
16 the P-2 zone open here, and in that 480 MCF a day, the aver-
17 age bottom hole pressure of this well for the P-1 zone was
18 in excess of 700 psi, and the P-2 zone is 465, so if we are
19 not producing, if we're producing less than 500 a day, we
20 may still have cross flow in there, drainage from our well,
21 from our P-1 zone into the P-2 zone, Union's producing well
22 in the P-2 zone.

23 Q So that you recommend a minimum produc-
24 tion limit on this well of 200 MCF a day.

25 A That would be the minimum.

1 MR. LOSEE: I have no further
2 questions at this time.

3 MR. STOGNER: Mr. Carr, your
4 witness.

5

6

REXCROSS EXAMINATION

7 BY MR. CARR:

8 Q Mr. Mahfood, what location are you using
9 as a standard location, the nearest standard location in the
10 acreage which you propose to dedicate to this well?

11 A The 510, 510 from the lease line would be

12 --

13 Q Okay.

14 A -- standard for 160 acres.

15 Q And that is as close as you can get and
16 that's 150 feet from the center of that section, is that cor-
17 rect?

18 A That is correct, yes.

19 Q And you have recommended a minimum allow-
20 able of 200 MCF per day. You indicated that that was based
21 on your being able to pay for the well.

22 Is there anything else that you're basing
23 that 200 MCF per day on?

24 A Well, eventually we might draw the pres-
25 sure down where it will stop that migration of gas.

1 Q You indicated that you though a penalty
2 or some penalty was appropriate.

3 A Yes.

4 Q And why would that penalty be appro-
5 priate?

6 A Because of the closeness to the lease
7 line, that 330 location.

8 Q Because of the advantage you gain on the
9 adjoining tract?

10 A Yes. It was not intended to be a gas
11 well originally.

12 Q But you were at an unorthodox location
13 even for an oil well.

14 A Yes.

15 Q And there is -- some penalty should be
16 imposed because of its encroachment on the adjoining tract.

17 A Yes.

18 Q And yet if you have a minimum allowable
19 of 200 per day and the production from the well plus the
20 penalty are actually below that, you would be allowed to
21 produce more than you could produce from a penalized well
22 absent the minimum allowable. How's that for a question?

23 MR. LOSEE: Don't ask me that.

24 A Mr. Carr, I might point out that 330
25 would not potentially be an unorthodox location for an oil

1 well.

2 Q It is possible that 200 minimum allowable
3 could be more than what you would produce if you were pro-
4 ducing just the well with the penalty on it.

5 A I doubt it very much because right now
6 those costs are going on it as shown on Exhibit Three or
7 Four, I don't remember which exhibit it was that had produc-
8 tion in the Union Well, the gas production jumped up to 2-
9 million a month, or better.

10 Q Even if that's possible, that's why
11 you're asking for the minimum, is it not?

12 A I'll be satisfied with 200 a day.

13 Q Is it possible that you could cut off the
14 cross flow by doing any work on the well to segregate the P-
15 1 from the P-2?

16 A It would involve turning the well as low
17 as -- as low as a zone -- as low a pressure as the P-2 has,
18 it would be hazardous to go in there and pull the tubing off
19 the well to put the bridge plug in between the P-2 and the
20 P-1.

21 Q So you say that it's not possible to
22 segregate those zones.

23 A It is possible, but it will be hazardous.

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

25 MR. STOGNER: Any redirect, Mr.

1 Losee?

2

MR. LOSEE: No, sir.

3

I want to make a brief state-

4

ment.

5

MR. CARR: So do I.

6

MR. LOSEE: Very brief.

7

MR. STOGNER: Okay. I have no

8

further questions of this witness.

9

Are there any other questions

10

of Mr. Mahfood?

11

If not, he may be excused.

12

We may have closing statements

13

at this time.

14

Mr. Carr you may go first and

15

Mr. Losee, you may go last.

16

MR. CARR: Mr. Stogner, we're

17

here today, Yates is seeking the approval of an unorthodox

18

well location; a well that they drilled at an unorthodox lo-

19

cation, whether it be an oil well or, as it ultimately

20

turned out to be, a gas well.

21

Union is before you today ask-

22

ing that when you enter an order approving this location

23

that you impose a penalty on production and that you do this

24

under your Rule 104-G, which provides that when you grant an

25

exception you may take such action as will affect any advan-

1 tage which the person securing the exception obtains over
2 the producers of offsetting tracts by reason of application.

3 And so we've come before you
4 and we're asking that a penalty be imposed.

5 I can understand how Yates
6 didn't exactly understand what the rules for this particular
7 pool were. I still, I have some question as to what order
8 supersedes what.

9 We go to Byrums and we look at
10 provisions in Byrums at page 435, where they set out R-5353,
11 we get one interpretation.

12 If we go to page 441 we have
13 Bluit-San Andres Associated Pool Rules and if you read that
14 I think it's difficult to determine what the spacing is.

15 But whatever it is, we believe
16 that the established formula that you've used in the past is
17 the appropriate way to go about imposing a penalty on the
18 production from the Yates well, and we think we've given you
19 what is the correct interpretation of the spacing rules and
20 that a penalty of 23.19 percent, that factor should be set
21 so that that is the percentage of the well's deliverability
22 that it can produce.

23 As Mr. McKeel pointed out,
24 there are other unorthodox locations in the area but it
25 should be noted that none of these were opposed by an off-

1 setting operator.

2 There's concern about how far
3 one zone will drain or how far another will drain, but it's
4 very clear that because of the cross flow which exists from
5 the Yates Well into the P-2 zone that the zones are in com-
6 munication, that they are continuous across the area, and
7 that there will be drainage from the Union tract towards the
8 Yates which cannot be compensated for unless an unnecessary
9 well is in fact drilled out there.

10 I think if you look at the
11 structural interpretation, both of Mr. McKeel and Mr. Mah-
12 food, I think you'll find that whether we're talking about
13 south or up structure, the vast bulk of the reserves in this
14 area are drained from the higher structural position and as
15 such a well at the location that Yates drilled it, is the
16 right location to drill if you're trying to encounter the
17 reserves. You move away from the old -- from the old well
18 on that unit, you move up-structure and toward the offset-
19 ting property.

20 The fact is in so doing we sub-
21 mit they're impairing our correlative rights.

22 Yates is before you and they're
23 seeking an imposition of a minimum allowable. The Commis-
24 sion has set minimum allowables in the past but it is the
25 position of Union that when you set a penalty on a well's

1 production you are doing that to offset the advantage
2 they're gaining by moving toward an offsetting operator.
3 You destroy that when you come in and set a minimum
4 allowable.

5 I don't know of any other
6 situation in the industry when just because your well may
7 not pay out you come and get an order that will set a
8 minimum so in fact you can drain reserves from your neighbor
9 to pay for your well, and I think that's actually the bottom
10 line on any minimum allowable set in any order, that what
11 you're doing is saying, yes, we're going to penalize you
12 because you're too close and you're gaining an advantage
13 but we're going to let you pay that out and produce enough
14 whether you drain it from your neighbor or not, so that
15 you'll have an economic venture.

16 What we submit is that you
17 should approve the location of the Yates well, that you set
18 a penalty on its production based on the spacing rules and
19 based on the formula that both Mr. Losee -- Mr. Duff and Mr.
20 Mahfood have presented to you today, and that in so doing,
21 by posing a reasonable penalty without a minimum allowable,
22 you will carry out your statutory duty to prevent waste and
23 protect correlative rights of all interest owners in the
24 pool.

25 MR. STOGNER: Thank you, Mr.

1 Carr.

2 Mr. Losee.

3 MR. LOSEE: Mr. Examiner, first
4 I'd like to ask the Commission to take judicial notice of
5 its General Pool Rules, Associated Gas Pool Rule 5353, to
6 assist in what I think needs to be resolved as far as the
7 proper location for this well, whether it should be 990 as a
8 legal or 510, the point that obviously varies the formula
9 calculation of the two.

10 You know, actually Union ought
11 to be happy that we drilled this well if Mr. Mahfood's tes-
12 timony is correct, and Union didn't seem to disagree, it
13 brought the migration of gas, looks like it's produced, oh,
14 10 or 15,000 MCF that have gone to Union's well from the
15 time the gas production started increasing.

16 The -- we point out that with
17 one exception every gas well in this field is located 660
18 feet out of the corner and not 990. We don't know whether
19 anybody objected. Most of those wells were probably origin-
20 ally completed as oil wells.

21 Now, I think it's clear, parti-
22 cularly if you look at the Tenneco Faskin Wells, the produc-
23 tion on those wells, that in the P-1 zone is a marginal
24 zone, gas zone, and they're declining rather rapidly, the
25 production curves indicated.

1 Mr. Mahfood's testimony of the
2 drainage area is something like 80 acres and if that calcu-
3 lation is correct, as far as the P-1 is concerned, there's
4 not going to be any drainage out of the wellbore of the
5 Union well because it's further away.

6 If, under Union's penalty
7 calculation it would reduce the deliverability of 600 MCF,
8 it would be reduced down to 25 percent and be 150 MCF a day,
9 and it's rather obvious that at best at that minimal
10 production they're not going to get much drainage from a
11 very large area, and yet Union has refused to participate in
12 that well, which the opportunity was given by Yates after
13 they completed it.

14 They have not completed their
15 well in the P-1 zone. They don't quite have 160 acres to do
16 so, and we think that Yates recognizes that under the Com-
17 mission's rules to offset an advantage some penalty should
18 be allowed, but we submit that the calculations made by Mr.
19 Mahfood resulting in an allowable of about 74 percent, or 73
20 percent, of deliverability, with a 200 MCF minimum, is car-
21 rying out your statutory duty and clearly offsets any advan-
22 tage that Yates obtains by its location of this well.

23 Thank you.

24 MR. STOGNER: Thank you, Mr.
25 Losee.

1 This Examiner will take admini-
2 strative notice of the Bluit-San Andres situation and I
3 will try to resolve that.

4 Mr. Losee, Mr. Carr, I'd like
5 from each of you a copy or a rough draft order within two
6 weeks.

7 Is there anything further to
8 come in Case 8614?

9 If not, this case will remain
10 open pending the supplemental information that I just asked
11 for.

12
13 (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. 8614 heard by me on 19 June 1985.

Michael P. Higgins Examiner
Oil Conservation Division