

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 28 September 1983

7 EXAMINER HEARING

8 IN THE MATTER OF:

9 Application of Jerome P. McHugh for
10 downhole commingling, Rio Arriba
11 County, New Mexico.

CASE
7966, 7967,
7968

12 BEFORE: Michael E. Stogner, Examiner

13 TRANSCRIPT OF HEARING

14 A P P E A R A N C E S

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I N D E X

JOHN ROE

Direct Examination by Mr. Roberts	5
Questions by Mr. Chavez	34

E X H I B I T S

CASE 7966

Applicant Exhibit A-One, Plat	7
Applicant Exhibit A-Two, Map	8
Applicant Exhibit A-Three, Log	10
Applicant Exhibit A-Four, Log	11
Applicant Exhibit A-Five, Daily Report	12
Applicant Exhibit A-Six, Data	14
Applicant Exhibit A-Seven, Tabulation	16

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E X H I B I T S

CASE 7967

Applicant Exhibit B-One, Plat	18
Applicant Exhibit B-Two, Map	19
Applicant Exhibit B-Three, Log	19
Applicant Exhibit B-Four, Log	20
Applicant Exhibit B-Five, Daily Report	20
Applicant Exhibit B-Six, Data	22
Applicant Exhibit B-Seven, Tabulation	23

CASE 7968

Applicant Exhibit C-One, Plat	25
Applicant Exhibit C-Two, Map	25
Applicant Exhibit C-Three, Log	26
Applicant Exhibit C-Four, Log	26
Applicant Exhibit C-Five, Daily Report	27
Applicant Exhibit C-Six, Data	28
Applicant Exhibit C-Seven, Tabulation	29

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2
3 MR. STOGNER: Call next Case
4 Number 7966.

5 MR. PEARCE: That case is on
6 the application of Jerome P. McHugh for downhole comming-
7 ling, Rio Arriba County, New Mexico.

8 MR. ROBERTS: Mr. Examiner, my
9 name is Tommy Roberts. I'm general counsel with Dugan Pro-
10 duction Corporation in Farmington, New Mexico, appearing to-
11 day on behalf of Jerome P. McHugh.

12 I'd like to request at this
13 time that Case Numbers 7966, 7967, and 7968 be consolidated.
14 The purpose of each application is the same. The wells that
15 are the subject of the applications are in the same area.
16 Many of the exhibits are common to all these applications,
17 and I have one witness who will testify in each of these
18 cases.

19 I think it would be in the best
20 interest of saving time and avoiding repetition if we could
21 do that.

22 MR. STOGNER: All right. At
23 this time we'll call next Case Number 7967.

24 MR. PEARCE: That case is also
25 on the application of Jerome P. McHugh for downhole comming-
ling, Rio Arriba County, New Mexico.

MR. STOGNER: We'll also call
next Case Number 7968.

1
2 MR. PEARCE: That case is on
3 the application of Jerome P. McHugh for downhole comming-
4 ling, Rio Arriba County, New Mexico.

5 MR. STOGNER: Cases Numbers
6 7966, 7967, and 7968 will be consolidated for purposes of
7 testimony.

8 Please proceed.

9 MR. ROBERTS: I have one wit-
10 ness to be sworn.

11 MR. PEARCE: Are there other
12 appearances in this matter?

13 (Witness sworn.)

14 JOHN ROE,
15 being called as a witness and being duly sworn upon his
16 oath, testified as follows, to-wit:

17
18 DIRECT EXAMINATION

19 BY MR. ROBERTS:

20 Q Would you state your name, your place of
21 residence, and your occupation, please?

22 A My name is John Roe. I live in Farming-
23 ton, New Mexico, and I'm a petroleum engineer for Dugan Pro-
24 duction, and in this representing Jerome P. McHugh.

25 Q Have you testified before the New Mexico
Oil Conservation Division on previous occasions?

1
2 A Yes, I have.

3 Q In what capacity?

4 A As a petroleum engineer on behalf of Du-
5 gan Production and Jerome P. McHugh.

6 Q And are you familiar with the applica-
7 tions in Case Numbers 7966, 7967, and 7968?

8 A Yes.

9 MR. ROBERTS: We tender Mr. Roe
10 as an expert in the field of petroleum engineering.

11 MR. STOGNER: Mr. Roe is so
12 qualified.

13 Q Mr. Roe, would you briefly state the pur-
14 pose of these applications?

15 A The purpose of our applications today
16 would be obtain permission to commingle production from Un-
17 designated Gallup and Basin Dakota within the wellbore of
18 each of the three wells.

19 MR. ROBERTS: Mr. Examiner, for
20 the record, I'd like to point out at this time that exhibits
21 in Case Number 7966 are numbered One through Seven, with the
22 letter prefix "A".

23 Case Number 7967, the exhibits
24 are numbered One through Seven with the prefix letter "B".

25 And in Case Number 7968, the
exhibits again are numbered one through Seven with the pre-
fix letter "C", and they'll be identified in that manner.

MR. STOGNER: Thank you, Mr.

1
2 Roberts.

3 Q Mr. Roe, would you please refer to what's
4 been marked as Exhibit A-One and identify the exhibit and
5 explain its significance?

6 MR. STOGNER: Mr. Roberts,
7 which one of these is on Federal lands?

8 MR. ROBERTS: None of them are
9 on Federal land but they -- there is some Federal acreage
10 offsetting the acreage which we're discussing.

11 MR. STOGNER: Thank you, Mr.
12 Roberts.

13 Q Mr. Roe, again, would you identify what's
14 been marked as Exhibit A-One?

15 A Exhibit A-One is a plat on which we've
16 indicated offsetting lease acreage for the Mother Lode No. 1
17 Well, operated by Jerome P. McHugh. We have identified the
18 ownership of offsetting leases and in addition, we've out-
19 lined the production units that would be subject to our re-
20 quest for commingling.

21 The 40-acre unit for the Undesignated
22 Gallup comprises the southeast quarter of the northeast
23 quarter, which is Unit H, of Section 3 of Township 24 North,
24 Range 2 West.

25 The 320-acre unit for the Basin Dakota
comprises the east half of Section 3 of the same township
and range.

Q Mr. Roe, what is the working interest

1 ownership in the Dakota proration unit which you've outlined
2 here on this exhibit, and the working interest ownership in
3 the Gallup proration unit, which is also outlined?

4 A Okay, the working interest ownership is
5 all Jerome P. McHugh or Dugan Production Company.

6 Q Is the location which you have spotted on
7 this exhibit a standard location?

8 A Yes, sir, it is.

9 Q Mr. Roe, refer to what's been marked as
10 Exhibit A-Two and identify that exhibit.

11 A This is a small scale map of the general
12 area of the subject wells and our intentions are -- our in-
13 tentions of this plat is to indicate the proximity of the
14 three wells that we're asking for permission to commingle
15 Gallup and Dakota, with respect to other areas that have
16 production from the Gallup/Dakota, which are fairly removed
17 from the area we're working, and also to identify wells
18 within the immediate vicinity that have recently been
19 authorized to commingle production from the Gallup and
20 Dakota, similarly as we're requesting for our wells today.

21 Indicated in blue, the little blue dots,
22 are wells that are currently producing from the Gallup
23 formation.

24 Indicated in the green is wells that are
25 currently producing from the Dakota formation.

Outlined in the pink, approximately eight
miles to the west of our subject wells, is the Ojito Gallup

1
2 Dakota Field, which has commingling of the Gallup and
3 Dakota.

4 And approximately eight and a half miles
5 to the southwest is the West Lindrith Gallup-Dakota Field.
6 That's outlined in orange, which also permits commingling of
7 the Gallup/Dakota.

8 We have, because of the remoteness of all
9 wells with respect to any well that has a substantial produ-
10 ction history, we've taken a total of six wells, two from
11 the Ojito Galloup and four from the West Lindrith and uti-
12 lized their production performance to draw an analogy for
13 our wells. All of our wells are very recently completed and
14 with no production history.

15 The six wells that we've used for an ana-
16 logy are identified with the red circle.

17 In addition, in the black dots we've
18 identified some dry holes in the general area in an effort
19 to show the newness of the area and the lack of any produc-
20 tion history.

21 I wanted to just elaborate one other --
22 on this map, this plat will be an exact duplicate in all
23 three packages of exhibits. Identified with the black arrow
24 on this map is the Mother Lode, which is in the southeast
25 quarter of the northeast quarter of Section 3, 24 North, 2
West.

In addition, the location of the other
two wells that we'll be asking permission to commingle, they

1 would be E. T. No. 1, which would be located in the north-
2 east quarter of the northwest quarter of Section 28, 25
3 North, 2 West. We indicate it to have Gallup and Dakota
4 both open for production, or have been completed in both
5 zones.

6 In addition to the E. T., the Wright Way
7 No. 1, which is located in the northeast quarter of the
8 northwest quarter of Section 2, of 24 North, 2 West, just to
9 bring in that all of these wells are in the same immediate
10 vicinity.

11 Q Okay, Mr. Roe, would you turn to what's
12 been marked as Exhibit A-Three and identify that exhibit,
13 please?

14 A Okay. Exhibit A-Three is a copy of the
15 open hole induction electric log that was recorded through
16 the Gallup interval. Our purpose in showing this is to
17 identify that we feel we have perforated all potential pay
18 within the Gallup, our top shot being at 6765 and our bottom
19 shot at 7070.

20 We've perforated a 305-foot gross inter-
21 val and made an effort to complete 30 different or separate
22 zones and throughout this completed interval there's a pos-
23 sibility of 52 feet of pay that we see on the well log; an
24 average porosity of 12.7 percent, and an average water
25 saturation of 40 percent.

The top of the Gallup is being identified
at 6704 on the log.

1
2 Q Refer to Exhibit A-Four and identify that
3 exhibit.

4 A Exhibit A-Four is again a copy of the in-
5 duction electric log through the Dakota interval. Our pur-
6 pose of showing this is that again indicate our completion
7 interval, the top shot being at 7861; the bottom perforation
8 at 8108.

9 I have identified, and will get into it
10 in a little bit, the perforations from 8045 to 8108 on this
11 log. We have recently determined that these zones are --
12 the water production from these zones would be detrimental
13 to the completion. These were perforations that we were
14 kind of exploring and so our plans are to abandon those five
15 holes below a bridge plug, which would be set at about 8035.

16 So what we're -- the zones that we would
17 be commingling would be the perforations at 7861 to 7990,
18 which is the interval that we have perforated and commingled
19 in the Janet No. 1 and Janet No. 2; the perforations below
20 7990 are just some additional pay we are hoping to develop.

21 Q When you refer to the Janet No. 1 and the
22 Janet No. 2, Mr. Roe, you're referring to McHugh operated
23 wells in this vicinity which have already received authori-
24 zation for downhole commingling?

25 A That's correct. They're in the immediate
vicinity of the Mother Lode.

Q Is it your belief that all of the essen-
tially productive intervals in the Dakota section have been

1
2 perforated?

3 A That's correct, and throughout the inter-
4 val that we'll be talking about, 7861 to 7990, we're dealing
5 with 129 feet of gross pay and in that interval we've perfo-
6 rated ten separate zones and we feel we've developed appro-
7 ximately 32 feet of pay; average porosity 9.7 percent; and
8 again a 40 percent water saturation.

9 Q Mr. Roe, refer to Exhibit A-Five and
10 identify it and briefly summarize its contents as they are
11 pertinent to this application.

12 A Okay. Exhibit A-Five is a copy of our
13 daily report during the drilling and completion operations
14 of this well, and I just briefly summarize it.

15 We spudded the well on June 13th, 1983
16 and we TD'ed the well at 8250 on July 1st.

17 We cemented our 4-1/2 inch casing in
18 three stages. We perforated the Dakota, the overall inter-
19 val 7861 to 8108, which was identified on Exhibit Number
20 Four.

21 We stimulated the Dakota interval with
22 41,000 gallons of jelled water and 54,000 pounds of 20/40
23 sand.

24 We then set a retrievable bridge plug at
25 7600 and completed the Gallup overall interval, 6765 to
7070, and fracture stimulated it with 70,000 gallons of jel-
led water and 89,500 pounds of 20/40 sand.

1
2 We began testing of the well on July 14th
3 and we tested in order to establish production through Sep-
4 tember 3rd.

5 After nearly a month and a half of swab-
6 bing and efforts to get the well to flow, we had produced
7 approximately 195 barrels of oil and 1800 barrels of water.
8 The 1800 barrels is a large part of the 2800 barrel load
9 that we had to start with.

10 As of the last effort, we had not
11 achieved a sustained flow; however, the data that is indi-
12 cated here, we feel that we could -- that initial potential
13 of 78 barrels a day would be indicated, and that would be
14 approximately what an IP will be on the well when we file an
15 IP.

16 Now, I want to point out that the 78-bar-
17 rel a day IP is not what we're predicting. It is the first
18 month of sustained production.

19 With some data we'll review in just a
20 little bit on Exhibit Six, it's -- historically the wells
21 have averaged 42 percent of this initial potential during
22 the first month, so our predicted initial production rate
23 would be 33 barrels a day.

24 Q Mr. Roe, what is the current status of
25 the Mother Lode No. 1 Well?

A The Mother Lode No. 1 is shut in pending
approval of this application so that we can commence produc-
tion.

1
2 Q Refer to what's been marked as Exhibit A-
3 Six. Identify that exhibit, please.

4 A Exhibit A-Six is the -- it consists of
5 four pages.

6 On the first page of this exhibit in the
7 righthand portion of the exhibit we've indicated our predic-
8 tion of the production performance of the Mother Lode No. 1,
9 and also this will be a common exhibit to all three wells.
10 We've indicated the production performance of the other two
11 wells.

12 The Mother Lode No. 1, its predicted
13 production performance, as I've indicated, it would have an
14 initial production rate of 33 barrels a day, which would re-
15 present a value of 42 percent of what we feel its initial
16 potential is. It would decline at an annual rate of 40 per-
17 cent for 3-1/2 years and then stabilize at 9 percent.

18 Now this production forecast, as I've in-
19 dicated earlier, was developed by drawing an analogy to six
20 other wells in the general area. The production performance
21 of those six wells are also indicated on the same plot with
22 the forecast of production for the Mother Lode No. 1.

23 The plot that we're looking at there, the
24 production from each of the six wells is initialized (sic)
25 time zero is the month one of the first year. The actual
production history of the individual wells is presented, the
two wells in the West Lindrith on the left portion of page

1
2 one. On page two we have the actual production history of
3 the two additional wells in West Lindrith and two wells in
4 the Ojito Gallup-Dakota.

5 On page three of Exhibit A-Six we have
6 tabulated the additional production statistics on these six
7 wells and I'd like to point out that the 42 percent value
8 that I am using as initial IP is represented there and an
9 evaluation of considering what the recorded IP was and com-
10 paring it to what the actual production would be, as I've
11 indicated on the graphs.

12 Also indicated the initial GOR of these
13 six wells averaged 4585, and that the average recovery of
14 these six wells is 42,500 barrels of oil ultimately, based
15 upon actual production performance, ranging from a low of
16 12,200 to a high of 76,800.

17 And these numbers were generated with a
18 fairly substantial amount of production history.

19 The last page of Exhibit Number A-Six is
20 a plot of production from a well operated by Northwest Ex-
21 ploration. It's the Gavilan No. 1, which is producing from
22 the Gallup only. It is the closest well to the area we're
23 dealing with and I'd just like to point out that the peak
24 production that we have seen from it to date is 51 barrels
25 of oil per day, which was obtained in May of 1983.

Q Do you know the exact location of North-
went's Gavilan No. 1 Well?

A Yes, I can give you an approximate loca-

1
2 tion. It's located in the northeast northeast quarter of
3 Section 26 of Township 25 North, Range 2 West, which would
4 be approximately three miles to the northeast of the Mother
5 Lode No. 1.

6 Q Okay, Mr. Roe, would you expect the pro-
7 ductive performance of this well to differ from these
8 projections that you have made if you were required to com-
9 plete each zone separately?

10 A From the standpoint that our -- our
11 testing of the Gallup indicates that its the major zone of
12 interest in this area, the Dakota has indicated only margi-
13 nal productivity, if we were required to dually com-plete
14 the well, we probably would not be able to justify dual e-
15 quipment and so any production that we realize from the Da-
16 kota would either have to be postponed until the Gallup was
17 depleted or probably would never occur.

18 Q Refer to Exhibit A-Seven and identify
19 that exhibit and explain its significance to this applica-
20 tion.

21 A Exhibit A-Seven is also an exhibit that
22 will be common to all three wells.

23 On Exhibit A-Seven we've indicated our
24 estimate of the reserves, broken it down by zone, and then
25 utilizing the reserve figure to represent in parentheses,
we've indicated the percentage of total production that
would be ultimately recovered from each zone, and we've in-
dicated oil reserves and gas reserves for the Mother Lode

1
2 No. 1, being 43,900 barrels from the Gallup and 11,900 bar-
3 rels from the Dakota; the Gallup representing 79 percent of
4 the total oil recovery and the Dakota representing 21 per-
5 cent.

6 The gas, we would estimate that ulti-
7 mately we would recover 447.8 million from the Gallup, which
8 represents 91 percent of the total; 41.4 -- 41.7 million
9 from the Dakota, which would represent 9 percent of the to-
10 tal ultimate recovery.

11 In addition to the Mother Lode and the
12 two other wells we're proposing, I've indicated the -- our
13 estimate of ultimate recovery and the allocation factors for
14 the Janet No. 1 and Janet No. 2, which have been authorized
15 to commingle production within the wellbore and as you can
16 see, our factors are within the same general range as we
17 have for the Janet 1 and Janet 2.

18 Q Mr. Roe, in summary, then, it's your pro-
19 posal to allocate in the Mother Lode No. 1 Well, 79 percent
20 of the oil production to the Gallup formation and 21 percent
21 of the oil production to the Dakota formation, and 91 per-
22 cent of the gas production to the Gallup formation and 9
23 percent of the gas to the Dakota formation?

24 A That's correct.

25 Q And this allocation is consistent with
other allocations in other wells which have been authorized
for downhole commingling in this area.

A Yes.

1
2 Q Is the ownership of the two zones common,
3 Mr. Roe?

4 A The working interest is common between
5 the two zones. The royalty interest is not by virtue of the
6 fact that we have several different fee leases within the
7 320-acre unit, and some of those fee leases are not common
8 to the 40-acre unit that would assigned to the Gallup.

9 Q In your opinion does the proposed alloca-
10 tion adequately protect these diverse interest owners?

11 A Yes, it does.

12 Q Mr. Roe, let's move to Exhibits B-One
13 through Seven at this time. Where possible, I'd like to ask
14 you to condense your comments where we've dealt with these
15 exhibits on the prior application.

16 Please refer to the exhibit which has
17 been marked B-One and identify that exhibit.

18 A Okay, B-One is a plat on which we've in-
19 dicated offset lease ownership adjacent to the E. T. No. 1,
20 which is operated by Jerome P. McHugh. It is the well lo-
21 cated in Unit letter C of Section 28, Township 25 North,
22 Range 2 West.

23 In addition to the offset lease ownership
24 we've identified the 40-acre production unit that is
25 assigned to the Gallup and that would comprise the northeast
quarter of the northwest quarter of Section 28, 25 North, 2
West, and we've also identified the 320-acre production unit
for the Dakota, which would comprise the north half of

1
2 Section 28, same township and range.

3 Q And again, Mr. Roe, the working interest
4 ownership of the Dakota proration unit and the Gallup prora-
5 tion unit is common?

6 A The working interest is common with
7 Jerome P. McHugh and Dugan Production exclusively.

8 Q Okay. Now refer to Exhibit B Number Two
9 and identify that exhibit.

10 A Okay. B Number Two is a duplicate of
11 what was discussed as Exhibit A Number Two with the excep-
12 tion that we've highlighted the E. T. No. 1 with a black ar-
13 row rather than the Mother Lode, and as I've indicated,
14 that's located in the northeast northwest quarter of Section
28, 25 North, 2 West.

15 Q And your comments with reference to Exhi-
16 bit A Number Two then are consistent and applicable to this
Exhibit B-Two?

17 A Yes, they are.

18 Q Refer to Exhibit B-Three.

19 A Okay, B-Three is a copy of the open hole
20 log that -- the induction electric log that we recorded over
21 the Gallup interval.

22 We've indicated our overall completed in-
23 terval as 6643 to 7025. Within this interval we've perfo-
24 rated a gross interval of 382 feet, 30 separate zones, and
25 we feel we've developed a possible 56 feet of pay with 10.9
percent porosity and water saturation averaging 40.

1 percent.

2 We've identified the top of the Gallup at
3 6588.

4 Q And in your opinion have you perforated
5 all the potentially productive intervals of the Gallup sec-
6 tion?

7 A We've perforated all potential that we
8 feel exists and that was one of the major points of this ex-
9 hibit.

10 Q Refer to Exhibit B-Four and identify that
11 exhibit.

12 A Exhibit B-Four is a copy of the induction
13 electric log over the Dakota interval. The top of the
14 Dakota is 7728 and we've perforated the overall interval
15 7747 to 8033.

16 As I indicated for the Mother Lode, the
17 lower portion of the Dakota we've determined is highly water
18 productive and we have isolated that interval 7949 to 8033
19 below a cast iron bridge plug in the E. T. No. 1, and our
20 interval of completion in the Dakota would be 7747 to 7893.

21 Within this 146-foot gross interval we
22 have completed 11 separate zones and within these 11 zones
23 we feel there are 21 feet of pay, average porosity 8.7 per-
24 cent and 40 percent water.

25 I might point out that the thickest zone
that we've completed is a 4-foot interval.

Q Okay, Mr. Roe, refer to Exhibit B-Five

1
2 and briefly summarize its contents.

3 A Okay. B-Five is a copy of our daily
4 drilling and completion report.

5 The well was spudded on April 25th, 1983,
6 and reached a TD of 8060 on May 20th, 1983.

7 We cemented a 4-1/2 inch casing in three
8 stages at 8081 and started our completion on June 1st.

9 We perforated the Dakot overall interval,
10 7747 to 8033. We fraced the Dakota with 66,000 pounds of
20/40 sand.

11 We perforated the Gallup interval, over-
12 all interval 6643 to 7025, and stimulated it with 83,500
13 pounds of 20/40 sand.

14 We began testing the Mother Lode -- or
15 the E. T. No. 1 on June 9th and we were swabbing and
16 attempting to get the well to flow through July 27th, and at
17 that time we had recovered only 85 barrels of oil and 2100
18 barrels of water and were swabbing at a daily rate of about
10 oil and 175 water.

19 Based upon water analysis and the lack of
20 productivities that we had seen during drilling and expected
21 from our analysis, we felt we were likely getting formation
22 water and we commences selectively swab testing the zones
23 and identified that the water was coming from the Lower Gal-
24 lup -- Lower Dakota, and at that time we set the cast iron
25 bridge plug at 7937 and capped it with cement to isolate the
Lower Dakota perms, 7949 to 8033.

On August 30th and 31st we selectively swab tested the Upper Dakota and we tested a rate, a daily rate of 16 barrels a day. We had a gas rate of 150 Mcf a day and a very nominal amount of water.

On September 2nd we resumed swab testing of the well, the Gallup and Dakota. We tested through September 2nd through September 19th and at that time the well would intermittently flow, indicating a potential of 116 barrels a day, 16 barrels of water a day, and based upon our study of production performance from wells in the general area, we considered that we had an indicated initial potential of 116 barrels of oil a day, we would predict an initial first month sustained production rate of 49 barrels a day, which will be presented on Exhibit Number Six in our prognostication of production performance.

Q What is the current status of the well?

A The E. T. No. 1 is shut in pending approval of this application.

Q Refer to Exhibit B-Six and explain its significance, how it relates to the application for the E. T. No. 1 Well.

A Okay, B-Six is an exact duplicate of Exhibit A-Six. I won't go into it in depth other than point out that the Janet No. 2, the prognostication -- our prediction of future production performance is indicated with the heavy solid line located between the two dashed lines.

1
2 We're predicting an initial rate of 49
3 barrels of oil a day, declining at an annual rate of 40 per-
4 cent per year for 3-1/2 years and stabilizing at 9 percent.

5 The forecast we're using for the E. T. 1
6 is also the same forecast that we were using for the Janet
7 No. 2.

8 On the, well, the second, third, and
9 fourth pages are exactly the same as A-Six.

10 Q Mr. Roe, would your comments regarding
11 the Exhibit A Number Six be the same for this exhibit
12 regarding the effect on potential production if you were re-
13 quired to complete each zone separately?

14 A Yes.

15 Q Refer to Exhibit Number B-Seven, identify
16 that exhibit, and comment on it as it pertains to the E. T.
17 No. 1 Well.

18 A Okay, Exhibit B-Seven is an exact dupli-
19 cate of Exhibit A-Seven.

20 On this we've presented our estimate for
21 the ultimate recovery for the E. T. No. 1 and also shown the
22 better relationship with other wells in the general area,
23 including the Janet 1 and 2, which are authorized to
24 commingle production.

25 Our estimate of ultimate recovery for the
Gallup is 40,600 barrels of oil, which represents 84 percent
of the total.

1
2 The Dakota would have an estimated ultimate
3 recovery of 7800 barrels, which represents 16 percent
4 of the total.

5 For gas reserves we're predicting an
6 ultimate recovery of 414.1 million for the Gallup, which
7 represents 94 percent of the total and in the Dakota 27.3
8 million ultimate recovery, representing 6 percent of the
9 total.

10 Q And those figures are the allocation that
11 you would propose to make for production from this well?

12 A Yes, they are.

13 Q Is ownership of the zones common in this
14 well?

15 A The working interest is common, being
16 Jerome P. McHugh and Dugan Production. The royalty interest
17 is not common, being as a result of the 320-acre unit being
18 comprised of several different fee leases and some of those
19 fee leases not having acreage within the 40-acre Gallup
20 unit.

21 Q In your opinion does this allocation formula
22 protect the owners of revenue interest in this well?

23 A It does.

24 Q Let's turn to the exhibits now that have
25 been identified as C-One through C-Seven, Mr. Roe. These
are the exhibits which pertain to Case Number 7968,
applicable to the Wright Way No. 1 Well.

A All right.

1
2 Q Refer to Exhibit C-One and identify that
3 exhibit.

4 A Okay, Exhibit C-One is a presentation of
5 the offsetting lease ownership that would be adjacent to the
6 Wright Way No. 1, operated by Jerome P. McHugh. This well
7 is located in Unit C of Section 2, of Township 24 North,
8 Range 2 West.

9 In addition to the offsetting lease
10 ownership we've identified the 40-acre production unit for
11 the Undesignated Gallup, which would comprise the northeast
12 quarter of the northwest quarter of Section 2, Township 24
13 North, 2 West, and we've also identified the 320-acre
14 production unit for the Basin Dakota, which would comprise
15 the north half of Section 2, same township and range.

16 Q Is this a standard location?

17 A Yes.

18 Q Refer to Exhibit C-Two, identify that ex-
19 hibit.

20 A Okay, Exhibit C-Two is an exact duplicate
21 of B-Two and A-Two, with the exception that the well that's
22 highlighted with the arrow is the Wright Way No. 1, which,
23 as I've indicated, is located in the northwest quarter of
24 Section 2 of 24 North, 2 West, and our efforts with this ex-
25 hibit would be to, as with other exhibits, identify the lo-
cation of the well with respect to other Gallup and Dakota
production, and the wells we were using for production data.

Q And would the comments you've previously

1
2 made regarding Exhibits A-Two and B-Two be pertinent to this
3 exhibit also?

4 A Yes, they would.

5 Q Refer to Exhibit C Number Three.

6 A Exhibit C-Three is the copy of the open
7 hole induction electric log over the Gallup interval, the
8 top of which is located at 6714.

9 We've perforated a 312-foot gross inter-
10 val, top shot at 6760, the bottom at 7072. Within this 312-
11 foot gross interval we've completed 32 separate intervals
12 which would have approximately 43 feet of pay; average poro-
13 sity 9.8 percent, and water saturation of 40 percent.

14 Q Okay, refer to C-Four, identify that ex-
15 hibit.

16 A Exhibit C-Four is a copy of induction
17 electric open hole log covering the Dakota interval, the top
18 of which is at 7826.

19 We initially perforated the overall in-
20 terval, 7865 to 8141, and we have recently determined that
21 the lower portion of the Dakota is water productive.

22 Our plans would be to isolate the Dakota
23 perforations, 8053 to 8141, with our Dakota completion being
24 7865 to 7995.

25 This 132-foot gross interval, we
perforated 10 separate zones. We feel we have 36 feet of
potential pay with porosity 9.6 percent and with 40 percent

1
2 water saturation, and we feel from the intervals we've
3 looked at we completed all potential pay within the Gallup
4 and the Dakota.

5 Q Refer to Exhibit C Number Five, Mr. Roe,
6 and again briefly summarize its contents.

7 A Okay. Exhibit C-Five is the daily
8 drilling report and report of operations during completion.

9 We spudded the well; the Wright Way No.
10 1, on May 24th, 1983. We reached a TD of 8185 on June 11th,
11 1983, cemented 4-1/2 casing at 8182 in three stages.

12 We started our completion efforts on June
13 20th, 1983, and we perforated the Dakota overall interval
14 7865 to 8141. We fracture stimulated the Dakota with 55,000
15 pounds of 20/40 sand.

16 We perforated the Gallup interval overall
17 6760 to 7072 and fracture stimulated the Gallup with 82,500
18 pounds of sand.

19 We began testing the well on July 5th and
20 tested it through the 12th, at which time we had only
21 averaged a very minor amount of oil and nothing measurable,
22 and 175 barrels of water a day.

23 At that point we made a -- resumed our
24 efforts to locate the source of water. We selectively swab-
25 bed the Dakota and then the period August 10th through the
19th we were selectively swabbing zones within the Dakota
and Gallup and on August 19th packer became stuck at 7127,

1 which is between the Dakota and Gallup.

2 From our swabbing efforts we concluded
3 that the water was coming from the lower portion of the Da-
4 kota, which is the overall interval 8053 to 8141, and we al-
5 so concluded that the Gallup and Dakota intervals, even
6 though we have not seen any productivity as of this date,
7 based upon our evaluation and the swab testing we did do, we
8 feel both intervals would be similarly productive as the
9 four other wells we've completed in this general area.

10 As a result of having not actually
11 achieved a test that we can use as an initial potential,
12 however, having spent some time evaluating it and comparing
13 it to other wells, we feel that production capabilities si-
14 milar to the Mother Lode, which is approximately half a mile
15 to the southwest, should be reasonable, and we would there-
16 for predict an initial potential of approximately 78 barrels
17 a day, again considering that our anticipated first month of
18 production would be 42 percent of that value, we would ex-
19 pect an initial production of 33 barrels a day and the per-
20 formance for the Wright Way would be indicated on Exhibit
Number Six, C-Six.

21 Q Tell us the current status of this well.

22 A We're still on the well, working to
23 recover the packer that's stuck at 7127. We're optimistic
24 that we will recover the packer, be able to isolate the
25 Lower Dakota and complete the well in the Gallup and the up-
per portion of the Dakota.

21

22

23

24

25

1
2 Q Mr. Roe, refer to what's been marked as
3 Exhibit Number C-Six and comment on it as it pertains to the
4 Wright Way No. 1 Well.

5 A Okay. Exhibit C-Six is an exact dupli-
6 cate of what was B-Six and A-Six.

7 We have identified the production fore-
8 cast for the Wright Way No. 1 as the lowermost dashed heavy
9 line.

10 As I've indicated, we'd expect the ini-
11 tial production to be 33 barrels of oil per day, which is
12 approximately 1000 barrels a month, declining at 40 percent
13 per year for 3-1/2 years and stabilizing at approximately 9
14 percent.

15 Q Refer to Exhibit C-Seven, identify that
16 exhibit, and comment on it as it pertains to the Wright Way
17 No. 1 Well.

18 A Okay. Exhibit C-Seven is an exact dupli-
19 cate of what was B-Seven and A-Seven.

20 We have presented the reserves and the
21 percentage that each set of reserves bears to the total,
22 with specific interest in the Wright Way No. 1. Our esti-
23 mate of ultimate oil recovery for the Gallup is 28,000 bar-
24 rels of oil; in the Dakota, 14,100 barrels of oil.

25 67 percent of the ultimate would be re-
presented by the Gallup and 33 percent by the Dakota.

In the -- for gas reserves our estimate
of ultimate recovery would be 285.6 million, which repre-

1
2 sends 85 percent of the total, and in the Dakota, 49.4
3 million, which represents 15 percent of the total.

4 Q So you propose to allocate production
5 from the Wright Way No. 1 Well to the Gallup and Dakota for-
6 mations on these percentages?

7 A Yes.

8 Q Is the ownership of the zones in this
9 well common?

10 A The working interest ownership is common
11 between the two zones, being owned by Jerome P. McHugh and
12 Dugan Produccion.

13 Again, the royalty is not common by vir-
14 tue of the 320-acre unit being comprised of several fee
15 leases, some of which have no acreage within the 40-acre
16 Gallup Unit.

17 Q And in your opinion does the proposed al-
18 location adequately protect all revenue interest owners in
19 this well?

20 A Yes, it does.

21 Q Mr. Roe, at this time I'd like to ask you
22 some questions that I think can be answered generally as to
23 all three wells which we're dealing with here.

24 Have you measured bottom hole pressure in
25 either zone in any of these wells?

A We haven't actually measured the bottom
hole pressure with a bottom hole pressure bomb. We've been
able to make an estimate of bottom hole pressure using fluid

1
2 levels during our completion efforts; however, using some
3 pressure data that was recorded in a well, the Gavilan No.
4 1, operated by Northwest Exploration, which is in the imme-
5 diate vicinity of the subject well, I've worked up that
6 pressure data and feel that a build-up that was taken in the
7 Gallup indicated a bottom hole pressure of 1663 psi at a
8 depth of 7200 feet.

9 In the Dakota they had a bottom hole
10 pressure, 132-hour build-up, the pressure at the end of 132
11 hours was 2600 psi at 7900 feet.

12 I was not able to analyze that pressure
13 build-up, however, the pressure was building very slowly.
14 There was not much build-up at the end of 132 hours.

15 Using these pressure gradients that we
16 see in the Gavilan No. 1 and considering that we observed
17 similar pressures during our completion efforts, if you
18 would compute what the bottom hole pressure would be, using
19 the fluid levels during our swabbing attempts, we feel the
20 bottom hole pressure in the Mother Lode No. 1 would be 6918
21 pounds -- or at 6918 feet, which is mid-perf of the Gallup,
22 that pressure was 1598 psi.

23 The mid-perf Dakota pressure at a datum
24 of 7925 would be 2607 psi.

25 Utilizing the same data for the E. T. No.
1, at a mid-perf in the Gallup, 6834, we're looking at 1578
psi, and in the mid-perf of the Dakota completion at 7820,
2573 psi.

1
2 For the Wright Way No. 1, again using the
3 pressure gradients from the Gavilan No. 1, mid-perf of the
4 Gallup at 6916 feet, 1597 psi, and mid-perf in the Dakota at
5 7931 feet, we're looking at 2609 psi.

6 Q Mr. Roe, assuming these pressure figures,
7 is there any danger, in your opinion is there any danger of
8 cross flow between the zones in any of these wells?

9 A There would be a very minor amount of
10 cross flow. The Dakota pressure is a little bit higher than
11 the Gallup but our plans would be to operate the wells in
12 the manner that we would keep the wells at a fairly low
13 operating bottom hole pressure and that combined with the
14 fact that the productivity of either zone is not real great,
15 we feel cross flow would be very minor, if at all.

16 Q Would you expect the fluids produced from
17 each zone in each of these wells to be compatible?

18 A The fluids are compatible, being oil and
19 gas, and there's no adverse results of mixing.

20 Q Mr. Roe, you have alluded to some economic
21 considerations, which are pertinent to the applications
22 that are before the Commission today.

23 Would you elaborate on those economic
24 considerations?

25 A Okay, well, in our testing of the
productivity of those zones to date, the Dakota is -- has
productive potential; however, the reserves or the anticipated
actual production performance will not justify a

1
2 single completion or justify drilling to the Dakota for the
3 Dakota reserves.

4 The reserves that we're forecasting in
5 the Gallup for all ~~the~~ of the wells are satisfactory to
6 make the payout, although they're not anything that would be
7 considered substantial.

8 Whereas, the combined production from the
9 two zones would permit maximizing of ultimate recovery from
10 the lease and permit McHugh and Dugan to realize a maximum
ultimate profit from them.

11 Q Mr. Roe, are we dealing with real sensi-
12 tive sands in these formations in the subject wells, which
13 may be subject to damage from water or other produced li-
14 quid?

15 A No, we're not. Those zones were stimu-
16 lated with a water-based fluid.

17 Q And in your opinion will the commingling
18 of production in the wellbores of these wells result in the
19 production of additional hydrocarbons and be in the best in-
20 terest of conservation, the protection of correlative
rights, and the prevention of waste?

21 A Yes, they will.

22 Q Were Exhibits A-One through Seven, B-One
23 through Seven, and C-One through Seven, either prepared by
you or at your direction and under your supervision?

24 A Yes, they were.

25 MR. ROBERTS: I'd move the

admission of these exhibits.

MR. STOGNER: Exhibits One through Seven, and all of their sub-parts A, B, and C, will be admitted into evidence.

MR. ROBERTS: That concludes my questioning of Mr. Roe.

MR. STOGNER: I have no questions of Mr. Roe at this time.

Mr. Chavez, do you have any questions of this witness?

MR. CHAVEZ: Yes.

QUESTIONS BY MR. CHAVEZ:

Q Mr. Roe, in calculating the reserves that you used on your last exhibit in all three cases, were these done from well log analyses?

A Yes, sir. It's kind of a combination effort. We had to start with the well log analysis and the footages and the porosities that I identified as I was going over each log, basically were what would go into a volumetric analysis.

In addition to that we knew pretty much what the initial production would be from each well, so we tried to wind up with the production performance that would also match what we were expecting the actual performance would be. In other words, if you're not real careful, you could wind up with a production that would be unreasonable

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2 with respect to the fact that all of the wells are 50 bar-
3 rels a day or less, as far as initial rate.

4 MR. CHAVEZ: That's all the
5 questions I have.

6 MR. STOGNER: Thank you, Mr.
7 Chavez.

8 Are there any other questions
9 for this witness at this time? If not, he may be excused.

10 MR. ROBERTS: We have no other
11 witnesses.

12 MR. STOGNER: Okay, Mr. Ro-
13 berts, thank you.

14 At this time Cases Numbers
15 7966, 7967, and 7968 will be admitted into evidence.

16 If there is nothing further,
17 these cases will be taken under advisement.

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(Hearing concluded.)

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. 7966, 7967, 7968 heard by me on Sept. 28, 1983.

Michael E. Stagner, Examiner
Oil Conservation Division