

Application of JACK L.
BOWMAN FOR CREATION OF GAS
WELL & PULSES FOR 2 EXISTING POOLS

Continued to May 13th &
Continued Again
to May 27th

Case Number

4352

Application
Transcripts.

Small Exhibits

ETC.

Name	Company	Address
Jim Knapp	U.S.G.S.	Art. 512
John W. Runyan	O.C.C.	Santa Fe
John York	O.C.C.	Hobbs
Amoco Production Co.		Box 68; Hobbs, N.M. 88240
JIM GILLHAM	USGS	ROSWELL
Gene Daniel	USGS	Roswell
R.L. Beckman	USGS	Artesia
HARLEY REAVIS	Humble	MIDLAND
Bill Burnett	nmocc	Artesia
William J. ReMay	Grace	Santa Fe
Joe S. McClellan	McClellan	Roswell
W. J. Treadwell	Harper	Dallas
Leon McFarland	Darford	Corpus Christi
W. L. Carter, Jr.	O.C.C.	Santa Fe
DAN BUTLER	OCC	SANTA FE
Geo Hatch	OCC	SANTA FE
JOE RANLEY	OCC	HOBBS
DICK STAMETS	OCC	SANTA FE

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 30, 1971.

EXAMINER HEARING

IN THE MATTER OF:

Case 4352 being reopened by the
Oil Conservation Commission upon
its own motion to give all in-
terested persons an opportunity
to appear and present evidence
to whether the Double L-Queen
and Suble-Queen Pools, Chaves
County, New Mexico, are in fact
separate reservoirs or one common
reservoir.

Case No. 4352

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

1 MR. UTZ: We will call Case 4352.

2 MR. HATCH: In the matter of Case 4352 being
3 reopened by the Oil Conservation Commission upon its own
4 motion to give all interested persons an opportunity to
5 appear and present evidence to whether the Double L-Queen
6 and Suble Queen Pools, Chaves County, New Mexico, are in
7 fact separate reservoirs or one common reservoir.

8 If the Examiner please, I would like to move at
9 this time that, I think, the entire record of the previous
10 hearing would be a part of this hearing, but to remove any
11 doubt, I would like to move that the entire record of the
12 previous hearing of this case be incorporated and considered
13 by the Examiner in his recommendation.

14 MR. UTZ: Is there objection to counsel's motion?
15 The entire record of the previous case 4352 will be entered
16 into the record of this case.

17 Let's go off the record a moment.

18 (Whereupon, a discussion off the record was held.)

19 MR. HATCH: If the Examiner please, I think it
20 proper for the Commission to put on its testimony first
21 concerning this case.

22 I have one witness. Mr. Stamets, would you stand
23 and be sworn, please?

24 (Witness sworn.)
25

(Whereupon, Oil Conservation Commission's Exhibits 1 through 6 were marked for identification.)

R. L. STAMETS,

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. HATCH:

Q Would you state your name and position for the record?

A R. L. Stamets, technical support chief, Oil Conservation Commission, Santa Fe, New Mexico.

Q At your present position and residence, have you held prior to this?

A Yes. Until the first of May, I was the geologist at the Artesia District Office of the Commission.

Q And you were residing in Artesia at that time?

A Yes, sir.

Q Are you familiar with the original hearing of Case 4352, in the issuance of Order No. R-3981, which was issued June 18, 1971, as a result of that hearing?

A Yes, sir, I am, and if I may, I would like to briefly review the history of that case.

Q May I interrupt you for just one moment?

MR. HATCH: If the Examiner please, I think you will recall hearing this case yourself, but if you will notice on the record it lists Mr. Nutter as the Examiner in this case. I would like that correction to be made at this time or note

1 that you were the Examiner in the original case.

2 MR. UTZ: Mr. Hatch, does the transcript of this
3 case show me as the Examiner?

4 MR. HATCH: Yes, it does.

5 MR. UTZ: So, it was a typographical error in the
6 order.

7 MR. HATCH: Right.

8 MR. UTZ: We will just note this in this record.
9 That's all that will be necessary.

10 The record will indicate that there was an error
11 in Order R-4102 of Case 4497 in that it --

12 MR. HATCH: Excuse me. I think that Order No. is
13 R-3981, isn't it?

14 MR. UTZ: Have I got the wrong order? Correct that
15 to Order R-3981.

16 MR. HATCH: I think the order you are looking at
17 is one that is in the case file of proposed rules that Mr.
18 Stamets will discuss later.

19 MR. UTZ: In Order R-3981, it indicates the
20 Examiner for that hearing was Daniel S. Nutter. It should
21 have been Elvis Utz.

22 You may proceed.

23 Q (By Mr. Hatch) Will you continue?

24 A Case No. 4352 was an application by Jack McClellan for
25 the creation of a new gas pool in Township 15 South,

1 Range 29 East, Chaves County, or the establishment of
2 special pool rules for two existing pools in Chaves
3 County providing for the classification of oil and gas
4 wells in the establishment of spacing units and an
5 allocation formula for both oil and gas wells.

6 The area then and now in question is shown on
7 Commission's Exhibit No. 1. Testimony in evidence
8 presented at the hearing before the Commission Examiner,
9 Elvis Utz, May 27, 1970, indicated that a permeability
10 barrier -- porosity barrier existed along the near west
11 margin of the Double L and Sulimar Pools.

12 As a result of that hearing, the Suble-Queen Gas
13 Pool was created in the southwest quarter of Section 12
14 and the northwest quarter of Section 13, Township 15
15 South, Range 29 East.

16 Q Mr. Stamets, did you attend that original hearing?

17 A Yes, sir, I was there.

18 Q Have you reviewed the transcript and the evidence from
19 that?

20 A Yes, I have.

21 Q All right. Has there been additional development in
22 the area of the three pools you have just mentioned?

23 A Yes. There have been a number of wells drilled,
24 primarily in the Double L Area, and several of these wells
25 were drilled in or near the supposed porosity or

1 permeability barrier between the Double L and Suble-
2 Queen Gas Pools.

3 I feel like this, in my mind this casts some doubt
4 as to the existence of this barrier.

5 Q All right. Were you requested by the secretary-director
6 of the Commission to make a study of the area to determine
7 whether or not the case should be reopened?

8 A Right. I was and I did.

9 Q You have made such a study?

10 A Yes.

11 Q All right. Did you have available certain information
12 that was not available at the time of the original hearing?

13 A Right, the completion information and logs from the
14 additional wells.

15 Q All right. In making your study, did you also consider
16 the information, the new information you had, did you
17 consider the information that was submitted at the last
18 hearing?

19 A Right. I did, and, of course, I was able to evaluate the
20 logs of the original wells from a better position as
21 result of the completion of the newer wells.

22 Q All right. You have testified that you have studied the
23 old information, as information that was submitted before
24 and new information that was available.

25 Are you also familiar with the area from personal

1 visits?

2 A Yes. I have been there many times.

3 Q Before and after the original hearing?

4 A Yes, sir.

5 Q All right. And you recommended that Case 4352 then be
6 reopened?

7 A I did.

8 Q Would you please present the results of your study, that
9 lead you to request that the case be reopened, to the
10 Examiner at this time?

11 A Yes. I feel like the thing that's in question here is,
12 or the thing that I feel like I need to attempt to do is
13 to establish if the classical reservoir pattern of gascap
14 updip, oil in the middle and water downdip, in a strato-
15 graphic type reservoir actually exist in the Double L-Suble
16 area and if this is the case, I propose to suggest the
17 establishment of an associated gas-oil pool and special
18 pool rules to classify oil and gas wells, setting up
19 spacing and well location requirements in an allocation
20 formula. And to this end, I have prepared Exhibits 1
21 through six and like to discuss those at this time. There
22 are a couple of extra sets of these exhibits that anybody
23 could look at if they desire.

24 Exhibit 1 is an area map. On this area map, out-
25 lined in various colors, are the pools, the Vest Ranch

1 Queen, the Double L Queen, Sulimar Queen, the Lucky Lake
2 Queen and the Suble-Queen Gas Pool. Also, the wells
3 completed in this area or drilling are identified as to
4 ownership, lease name and well number.

5 Wells outside the three pools have the producing
6 formation or formation with any show in it identified.
7 Plugged and abandoned wells show the total depth. That
8 is essentially all the information shown on that map.

9 Q May I interrupt a moment, just before you go on to Exhibit
10 2? The original order issued in the original hearing of
11 this case found that there were two separate pools, excuse
12 me, that certain wells of Mr. McClellan's had discovered
13 a separate common source of supply and created a new gas
14 pool. Is that correct?

15 A Right.

16 Q And a moment ago you mentioned the porosity or permeability
17 barrier. However, the order itself did not find that such
18 had been established, did it?

19 A I haven't read that order this morning. I don't recall
20 that that was one of the prime factors.

21 MR. HATCH: Maybe I had better call attention to the
22 Examiner at this time so it's not confusing. He can review
23 the order himself. It was a new pool created and the reason I
24 am asking is that there was no particular findings in the
25 order itself that said there was a porosity or permeability

1 barrier existing, if you will glance at the order.

2 When Mr. Stamets speaks of porosity or permeability
3 barrier that was -- he was talking about testimony that was
4 presented in the prior hearing but was not specifically
5 spelled out in the order.

6 THE WITNESS: I think it's one of those things that
7 rather goes without saying, that the separate pool was es-
8 tablished and the basis for the establishment of the separate
9 pool was the isolation of the two pools as established by
10 testimony at the original hearing.

11 MR. HATCH: Yes.

12 THE WITNESS: This being based on various inter-
13 ference tests, build-up tests and the theory of permeability
14 barrier.

15 Q (By Mr. Hatch) All right. Testimony was presented at
16 the original hearing concerning those matters?

17 A Right.

18 MR. UTZ: Excuse me, just a moment. In reference to
19 the order you mentioned, Mr. Hatch, finding five says that
20 evidence presently available indicates that the Jack McClellan
21 Well is a separate source of supply which, indirectly, indicates
22 there is a permeability barrier.

23 MR. HATCH: Okay.

24 THE WITNESS: Exhibit No. 2 is the same base map on
25 which the structure contour top of the Queen formation is

1 noted. You can see from the typical log on the lower right
2 hand corner of the exhibit that I have picked my top to contour
3 as the top of the Queen formation as opposed to the top of the
4 Queen pay zone as was contoured at the original hearing and as
5 is contoured on a number of company maps.

6 I have picked this top of the Queen because it is
7 correlative with the top of the Queen further to the south on
8 the Ortiz Vacuum trend and this is just a top of the Queen, as
9 I contoured it.

10 Another point is that the interval between the top
11 of the pay varies in thickness over this area about ten feet.
12 So, I used the top of the Queen because it lacked this vari-
13 ation and represents the structure somewhat more accurately.

14 The interval between the top of the pay zone or
15 sand and the top of the Queen is generally an anhydrite or
16 dolomite. Also shown on here are the line of cross section,
17 AA prime and BB prime, which will be Exhibit 3 and 4.

18 The gas-oil ratio information is color coated on
19 the individual wells. Wells from zero to 2000 have no color,
20 2 to 3000 are green, 3 to 6000 orange, 6 to 10,000 red, 10 to
21 30,000 violet and above 30,000 yellow.

22 I believe that this map tends to show the separation
23 of the Sulimar and the Double L Queen Pools. You will note
24 that there are dry holes in Section 13 in the northeast of the
25 southeast, that being the Lisa B No. 5 of Jack McClellan's and

1 although it is only temporarily abandoned, this is essentially
2 a dry hole.

3 His Lisa A Federal -- I can't read the number on
4 that. Let me refer to one of my other maps. That would be
5 the -- that's the Lisa No. 1. These are two dry holes which
6 effectively separate the Sulimar Queen to the south from the
7 Double L Queen to the north.

8 Also you will note that the producing interval, oil
9 producing interval in the Sulimar is about forty or fifty feet
10 higher structurally than the oil producing interval in the
11 Double L. I feel both of these are very significant evidence
12 that separation of these two pools.

13 Now, some other things of significance, which I
14 would like to point out on this contour map, the Jack McClellan's
15 Lisa B No. 1 Well in the northwest quarter of Section 13, 15,
16 29. This well is in the Suble-Queen Gas Pool. It had an
17 initial potential of over four million cubic feet of gas per
18 day.

19 The Patrick No. 1, also in the Suble-Queen Gas Pool
20 in Section 12, had a potential of about 6.6 million cubic feet
21 of gas per day.

22 Since the original hearing, Jack has completed his
23 No. 2 Patrick in the northwest of the southeast of Section 12.
24 This well had a potential ranging from six to nine million.

25 The Letral Oil Company Well, State Well No. 1, in

1 the northeast northeast of Section 2, 15, 29, was completed
2 since the original hearing with about a three-quarters of a
3 million cubic feet of gas per day potential.

4 The Corinne Grace Well, State No. 2, in the north-
5 west of the northeast of Section 1, same township, was completed.
6 This well is not actually completed. We have received no
7 completion reports on it in our office. However, the well is a
8 potential gas well. It flowed for a number of days. I have
9 been by it a couple of times, myself, when it was flowing and
10 I would say that it is at least capable of a million cubic feet
11 of gas per day.

12 MR. UTZ: Is this the well that was the subject of a
13 continued case on this hearing today?

14 THE WITNESS: Yes. I think both of these wells,
15 Corinne Grace in the north half of the northeast of Section 1,
16 were to be involved in that case. One of these is an oil well,
17 the other is a gas well. I would like to point out at this
18 time, too, that none of these wells that I have spoken of to
19 this point actually produce a bit of liquids. There are no
20 liquids at all.

21 Now, I have also attached to this exhibit, Exhibit
22 No. 8 of Jack McClellan's from the original case, and on this
23 exhibit are the boundary lines that Mr. Viney found through
24 his testing procedures on the Patrick Federal No. 1 and
25 Dalport's Sunset No. 1.

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1 You can eyeball these things and more or less tell
2 where these various lines would come on my map. Also, the
3 barrier shown on Exhibit 8 can be interpolated on my map, and
4 I would like to note the wells that are completed in or near
5 this barrier area. Jack's Patrick No. 2 in Section 12 was
6 completed essentially in the center of the barrier area.

7 Wilson Oil Company's Amerada C Federal No. 1 in the northwest
8 of the northeast of Section 12, 15, 29, completed along the
9 edge; Dalport's Sunset State No. 2 in the northeast of the
10 southeast of 12 completed along the edge; Jack McClellan's
11 Barber No. 1 in the southeast southeast of Section 12 is
12 completed along the edge; Jack McClellan's Lisa B No. 6 in
13 Section 18, 15, 30, would be in the northwest of the northwest,
14 is completed along the edge of this barrier area. And, all of
15 those wells, with the exception of the Wilson Well, were very
16 good wells upon completion.

17 You can see from the color coating that the high
18 GOR wells are located along the western margin of the Double L
19 Field. I have a little information which, to me, indicates
20 that there is a migration of gas from west to east across this
21 area and the two wells which, to me, indicate **these** are the
22 Dalport Oil Corporation Sunset State No. 8, located in the
23 southeast southeast of Section 36, 14, 29, and the Corrine
24 Grace State No. 1 in the northeast northeast of 1, 15, 29.
25 These wells were completed fairly close together. They are on

1 essentially the same structural contour. They had very close
2 to the same gas-oil ratio to begin with.

3 I would like to point out what has happened with
4 the passage of time to the gas-oil ratios on these two close
5 wells, structurally the same. The Corrine Grace Well was
6 completed on 1-16-70, with an initial gas-oil ratio of 4454.
7 Dalport was completed 2-16-70, with the GOR of 4153.

8 The next gas-oil ratio test taken in this area was
9 by Dalport on July 25, 1970. Their gas-oil ratio had increased
10 to 19,153. The next gas-oil ratio test taken was by Grace
11 on 9-29-70, some two months later. The gas-oil ratio had
12 increased to 38,909.

13 Then, on the report to our Artesia office in March
14 of this year, Dalport reported the gas-oil ratio on their No.
15 8 Well as 60,000. So, you can see that no matter which well
16 was tested, the later test had a higher GOR.

17 MR. UTZ: Would you point out the Dalport Well
18 again, please?

19 THE WITNESS: The Dalport Well is this violet circle
20 here and the Grace Well is the yellow one.

21 We can also see a same situation with oil downdip
22 in gas updip in this Vest Ranch Queen Area which is relatively
23 a new area.

24 There are two producing oil wells in the northeast
25 quarter of Section 28 of 1430. The Conoco Means Well, which

1 was mentioned at the original hearing, is a gas well in the
2 southwest quarter of Section 28 and it is updip from the two
3 oil wells.

4 Jack McClellan plugged his Bahm Well in Section 21
5 of the same township, but this well had a substantial gas
6 potential when it was tested.

7 Q (By Mr. Hatch) Which of those wells were in existence
8 at the time of the original hearing?

9 A The Jack McClellan Bahm and the Conoco Means were completed
10 at that time.

11 You have a similar situation to the west in Section
12 15, 15, 29. The little Lucky Lake Queen essentially never
13 produced, but there are shows of oil in two wells in the
14 northeast quarter and there is a gas well identified as
15 the Shell Well in the northwest northwest of Section 15.

16 Also, in the northeast of the southwest of 15, there
17 is another oil show. So, this, apparently, is a very
18 similar situation all through the area with oil downdip
19 and gas updip.

20 I would like to point out, too, that the dry holes
21 on the near east side of the Double L were, in general,
22 absolutely dry when they were completed, which indicates
23 to me, at least through the center of the field, that the
24 oil is very near the reservoir limits, that there is no
25 real water contact through here. Now, there may be on the

1 north end and the south end of the Double L, but in the
2 middle, I don't think there is much water contact.

3 Q Would you identify some of those wells for the Examiner?

4 A The dry holes? The Wilson, Amerada A in Section 6 of 15,
5 30, and -- let me see, where is another one. I had better
6 find one more, at least. Humble's Hesse Federal No. 1.
7 This is not a plugged and abandoned well but it's not a
8 producer either. That is the northwest northwest of
9 Section 7.

10 Q From what did you base your statements that those were
11 dry, completely dry?

12 A That is just from my personal knowledge, reports to me
13 from people in the field.

14 Q Nothing that was filed with the Commission?

15 A It may be on this Wilson Well. However, I don't think
16 that that is necessarily called for on the form.

17 I would like to refer to Exhibits 3 and 4, these
18 being cross sections, AA prime and BB prime, as identified
19 on our Exhibit No. 2. This set of exhibits show the
20 formation top and the pay top and the tight stringer,
21 which is referred to in the original hearing, in the
22 center of the pay.

23 The perforations on the individual producing wells
24 are shown and the drill stem test is shown on the Dalport's
25 Spurck State No. 1 on Exhibit No. 4. There is a gas-oil

1 contact shown on both exhibits. This contact is only
2 relative and may not be at that exact structural position
3 at this time. So, I am not trying to indicate precisely
4 where the contact is, only that it exists between those
5 two wells.

6 The cross section, BB prime, does show an oil-water
7 contact which I have put a little red question mark
8 beside. I'm not sure that it is there. I couldn't swear
9 that it is not there. I really don't feel like it is
10 there.

11 Now, I have not shown a porosity barrier between
12 the Patrick Federal No. 1, of Jack McClellan's, and the
13 Dalport Sunset State No. 1. There was a porosity barrier
14 indicated at the original hearing. I have shown none on
15 my cross section.

16 Now, I would like to refer to Exhibit No. 5.
17 Perhaps I should try and identify this exhibit a little
18 bit better. I refer to this as a Paleo topographic map
19 of the top of the Queen pay sand. Now, this is not the
20 top of the Queen, as identified on Exhibit No. 2. But
21 this is the top of the pay.

22 Now, a topographic map is a map of the surface of
23 the ground with lines connecting points of equal elevation.
24 A Paleo topographic map is a map which attempts to some-
25 how identify the elevation as a topographic map of a

1 formation at the particular time you choose, and the
2 time I chose on this was at the close of Queen sand
3 deposition.. So, this map should represent the relative
4 elevation difference on the surface of the Queen sand at
5 the close of Queen sand deposition.

6 I couldn't tell you if it was a foot under water,
7 ten feet under water or what the actual situation is,
8 whether these contours ought to be identified as above
9 sea or subsea, but these contours are relative one to
10 another.

11 Now, I arrived at this by taking the difference in
12 the thickness between the top of the Queen sand pay and
13 the top of the Queen. As you recall, I said this varied
14 some ten feet. Now, this would be the top of the
15 anhydrite, this upper line and the Queen sand then builds
16 up, falls off.

17 You have certainly a bank and a trough or crest
18 and a trough. At the center of this trough, at the highest
19 point, the thickness would be about fourteen feet. At the
20 height of the crest -- I'm sorry, at the low point, the
21 base of the trough, the thickness is about twenty-four
22 feet.

23 So, I said twenty-four feet will be my zero line,
24 fourteen feet will be my ten foot line, anything in
25 between, I merely subtract from twenty-four to get the

1 elevation. In other words, if you were standing at
2 this point, at the base of the trough, the top of any
3 bank or dune would be ten feet above your feet. Now,
4 that's what I did.

5 This is what I feel like it shows. I feel that
6 this exhibit shows a series of underwater sand dunes or
7 banks and troughs. If you will observe, the reservoir
8 limits actually seem to fall very near the two foot
9 contour line, as I have drawn. I don't know that there
10 is any magical thing about that, but it does seem to
11 follow.

12 Also, you will note that the original sand bank, as
13 I have contoured it, covers both the area now including
14 the gas wells and the oil wells.

15 Now, I would like to discuss briefly the significance
16 of this. As the -- the way the reservoir was laid down,
17 the field has some bearing on whether or not the gas
18 wells could be isolated from the oil. In my opinion, the
19 Double L, Suble and Sulimar Queen reservoirs represent
20 back reef, lagoonal type shallow water sand banks. Red
21 sands and other continental or near shore sediments were
22 moved into this area by wind and water action. Tidal
23 currents, currents of fresher water moving towards the
24 side of the south or other water currents washed the
25 sediments, building underwater sand banks similar to

1 wind-blown dunes.

2 The currents worked and reworked the sands, cleaning
3 them, carrying off the finer material. This fine material
4 and the relatively unworked red sands were deposited at
5 the margins of the banks. The pore spaces between these
6 relatively unwashed edge sediments were likely smaller
7 originally and, therefore, the effect of later concurrent
8 deposition of salt, anhydrite and dolomite was to make
9 the bank margins essentially impermeable.

10 Periods of decreased current activity or increased
11 evaporation resulted in the deposition of less porous and
12 permeable zones or beds in the main body of the Queen
13 sand pay. Such a tight streak can be seen on our Exhibit
14 3 and 4.

15 Now, the porosity and permeability vary above and
16 below this tight streak. So, one well might be producing
17 primarily from the upper zone; the next well might be
18 producing equally from both the upper and the lower zone
19 in this Queen sand pay. So, what you have is not pro-
20 portionate volumes of fluid flowing to separate wells,
21 maybe offset wells, from the two zones. I feel like this
22 would definitely increase the difficulty of making any
23 valid reservoir study in the area.

24 I have mentioned this tight zone. The -- some
25 discussion was made at the original hearing of the ability

1 to squeeze off the gas above this tight zone and produce
2 the oil below it, and some people have had some success
3 at this. However, it appears that possibly poor cement
4 jobs or heavy fract jobs may have broken down the tight
5 zone in at least a portion of the area and facilitates
6 the movement of fluid between the two porous intervals.

7 Q Mr. Stamets, assuming that these new wells that have been
8 drilled since the prior hearing are located as you have
9 testified and you have the producing characteristics that
10 you have testified to, do you have an opinion as to whether
11 or not the wells in the Double L Pool and Suble-Queen Pool
12 are producing from the same or separate common sources of
13 supply?

14 A It's my opinion that the Suble-Queen Gas Pool represents
15 a portion of the gascap updip and in connection with the
16 Double L Pool.

17 Q All right. Would you like to explain that opinion any
18 further as to why?

19 A Well, I -- no. I feel like my exhibits essentially show
20 that -- perhaps, maybe I should rephrase that. I feel
21 like the exhibits show this. However, the specific items
22 on the exhibits which show it, I believe, are these wells
23 connected in or near this porosity barrier that was
24 mentioned at the original hearing as the Patrick No. 2,
25 the Garbie No. 1, Sunset No. 2, the Wilson No. 1.

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22 on the exhibits which show it, I believe, are these wells
23 connected in or near this porosity barrier that was
24 mentioned at the original hearing as the Patrick No. 2,
25 the Garbie No. 1, Sunset No. 2, the Wilson No. 1.

1 Also, the potentials of these wells, as you move
2 from the Lisa B No. 1 in the northeast -- northwest north-
3 west of Section 13 to the Patrick No. 2 in the northwest
4 of the southeast of 12, potentials increase indicating to
5 me that the porosity is getting better as you move toward
6 the Patrick No. 2, rather than the porosity getting less
7 as you expect if you went along with the testimony of Mr.
8 Viney in the original hearing.

9 Also, all of these wells in -- oil wells in Section
10 12, with the exception of the Wilson Well, had very good
11 potentials and have been very good producers at this
12 point.

13 Q In other words, it is your opinion that there is no
14 porosity barrier in that area?

15 A I see no indication of any.

16 Q There is permeability in the area?

17 A Right.

18 Q All right. Assuming that the wells are producing, then,
19 from the same common sources of supply, do you have any
20 recommendation as to whether or not special rules should
21 be adopted for the pool?

22 A Yes. I feel like originally we need to abolish the Suble
23 Gas Pool and expand the Double L Pool to take in the
24 Suble-Queen Gas Pool and a number of these other gas wells
25 that are in existence now along the western side. I also

1 have a set of proposed rules and regulations which have
2 been identified as our Exhibit No. 6.

3 Q Just a moment, before you go into that. You have
4 recommended that one pool be abolished and the Double L
5 Pool expanded to take in that. Special rules would need
6 to be adopted.

7 A Right.

8 Q Why is that necessary?

9 A The special rules?

10 Q Yes.

11 A We need the rules to, first, describe what is an oil well
12 and what is a gas well in this area to establish spacing
13 units for each; to determine the location of gas wells or
14 oil wells; to permit the production of gas from gas wells
15 and oil from oil wells.

16 Q Do you think there might be waste or violation of
17 correlative rights if some special rules are not adopted?

18 A Yes. I feel that if, for instance, the gas wells were
19 allowed unlimited withdrawals, the potential is there for
20 migration of oil updip and the loss of oil through wetting
21 of dry sands. Conversely, I feel like we need rules to
22 protect the people who own the gas from unlimited gas
23 withdrawals from oil wells located along the margin.

24 Q All right. And you have prepared proposed rules?

25 A Yes, I have.

1 Q Are those identified as an exhibit?

2 A Right, Exhibit No. 6.

3 Q All right. Has the Examiner been furnished a copy of
4 those proposed rules?

5 A Yes, there is a copy.

6 Q Are they available for anybody else?

7 A I have passed some out around here.

8 Q Without reading each of the rules, would you point out
9 significant rules here?

10 A Yes. Rule 2 says that "each gas well shall be located on
11 a standard unit containing 160 acres, more or less,
12 substantially in the form of a square, which is a quarter
13 section," which is the essence of that rule. The oil
14 well, in rule 2 (b), shall be located on a standard forty-
15 acre tract.

16 Rule 4 says that "each well, oil or gas, shall be
17 located no nearer than 330 feet to any quarter-quarter
18 section line, except that any well drilled in a known gas
19 productive area shall be located within 150 feet of the
20 center of a quarter-quarter section." Rule 5, "a well
21 shall be classified as a gas well if it has a gas-liquid
22 ratio of 100,000 or more cubic feet of gas per barrel of
23 liquid hydrocarbons."

24 Rule 6 --

25 Q May I interrupt you there just a minute. You are proposing

1 or suggesting 100,000.

2 A Yes.

3 Q You do not intend that the Examiner be limited in his
4 recommendation to that?

5 A No. That's not my intention at all. I feel like this
6 100,000 is a good figure for this reason. The gas-oil
7 ratios are climbing quite rapidly along the western
8 margin. If it were set at a lower figure, say, 30,000, the
9 number of wells would have to be broken loose from the
10 tank battery that they are going into at the present time
11 separate separators set at the wellhead or at the tank
12 battery and the gas measured individually from the well.

13 This would be a thing that would have to be kept up
14 with our district offices. They would have to determine
15 each time that a well had gone over, say, 30,000, that
16 they would have to get out there and physically check it
17 to see if this had been done or at least verify in some
18 manner that this well was now being metered individually.

19 Q Are there any other pools in the state that have this
20 classification?

21 A I believe there are some others with this classification,
22 and, although I don't have their names right now, I could
23 furnish them if that were necessary.

24 Another item on this high ratio would be the fact
25 that so far the wells that have been drilled in the gascap,

1 or the supposed gascap, have had those liquids produced
2 with them. So, as far as the gas wells go, the gas
3 liquid ratio would be meaningless.

4 Now, rule 6 proposes "that the limiting gas-oil
5 ratio shall be 2000 cubic feet of gas for each barrel of
6 oil produced." Rule 7, "an oil well which has 40 acres
7 dedicated to it shall be permitted to produce an amount
8 of gas determined by multiplying the top unit oil allowable
9 for the pool by the limiting gas-liquid ratio for the
10 pool."

11 Q Mr. Stamets, in connection with that statewide rule,
12 concerning the amount of gas that can be produced by oil
13 wells, casinghead gas, also has another provision providing
14 that all such gas produced in accordance with the rule is
15 being lawfully produced.

16 Do these rules contain such a provision?

17 A These rules do not contain such a provision. I would
18 definitely recommend such a provision not be included.

19 Q In other words, this would be a definite limit on the
20 amount of casinghead gas that it could produce?

21 A Right.

22 Q Go ahead.

23 A The second portion of rule 7 states, in part, that "a gas
24 well shall be permitted to produce that amount of gas
25 obtained by multiplying the top unit oil allowable for the

1 pool by the limiting gas-liquid ratio for the pool and by
2 a fraction, the numerator of which is the number of acres
3 dedicated to the particular gas well and the denominator
4 of which is 40."

5 Rule 8 is one I feel that needs a little discussion.
6 "The operator of each newly completed well shall cause a
7 gas-liquid ratio test to be taken on the well upon
8 recovery of all load oil from the well, provided however,
9 that in no event shall the test be commenced later than
10 30 days from the date of first production unless the
11 well is connected to a gas-gathering facility" and so on
12 and so on.

13 The thing I feel like needs some discussion there is
14 that a well completed in the gascap should definitely not
15 be allowed to produce to the air for 30 days after the
16 date of first production. Whatever addition to this
17 rule that it would take to prevent this, I feel should be
18 included.

19 Rule 9 calls for "gas-liquid ratio tests to be taken
20 on all wells during the months of March, July and November
21 of each year." These are quarterly tests. I can see
22 also down here I have semi-annual tests, so this has not
23 been too well prepared. But I call for quarterly tests
24 here due to the rapid fluctuating gas-oil ratios in this
25 pool.

1 However, if rule 7 limiting the production of gas
2 from oil wells is strictly enforced, semi-annual tests
3 or possibly even annual tests might suffice. My recom-
4 mendation is nothing less, at this time, though, than
5 annual tests.

6 Q I might enter, the engineer's here questioning whether
7 the test three times a year is a quarterly test.

8 A How about a thirdly test?

9 MR. RAMEY: For lack of anything better, let's call
10 it a thirdly test.

11 THE WITNESS: All right. I stand corrected on that.

12 Rule 10 says that "an initial shut-in pressure test
13 shall be taken on each gas well and shall be reported to the
14 Commission on Form C-125." This does not state annually there-
15 after, but I would presume that it goes without saying, since
16 our rules and regulations provide for an annual shut-in
17 pressure test that one will be required annually.

18 I see none of the other rules which -- Rule 18 does
19 require some discussion. "The monthly gas production from
20 each gas well shall be metered separately and the gas pro-
21 duction therefrom shall be reported to the Commission on Form
22 C-115." This is the one which would require any well classified
23 as a gas well to meter the gas separately rather than at a
24 consolidated tank battery.

25 I don't believe any of the other rules need

1 discussion.

2 Q Do you have anything further to add to your testimony?

3 A Not at this time.

4 Q Were Exhibits 1 through 6 prepared by you?

5 The geology was done by me, to a small degree by our
6 geologist in Hobbs, and the exhibits were drafted in
7 Hobbs.

8 Q Under your direction?

9 A Yes.

10 MR. HATCH: I would like to move the introduction
11 of Exhibits 1 through 6.

12 MR. UTZ: Without objection, Exhibits 1 through 6
13 will be entered into the record of this case. Does that
14 complete your direct testimony, Mr. Hatch?

15 MR. HATCH: Yes.

16 MR. UTZ: Are there others that propose to enter
17 testimony in this case? One more? Dalport?

18 MR. CHRISTY: Yes.

19 MR. UTZ: How about you, Mr. McClellan?

20 MR. McCLELLAN: The only thing I have is a statement.

21 MR. UTZ: Are there others?

22 MR. HINKLE: Humble; I'll make a statement.

23 MR. UTZ: Mr. Stamets is now available for cross
24 examination, if there are any questions.

25 MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant,

1 Cox and Eaton, appearing on behalf of Humble. I just have
2 one question.

3 CROSS EXAMINATION

4 BY MR. HINKLE:

5 Q In connection with your proposed rule 7, would this give
6 an advantage to gas wells over oil wells under most rules
7 that have been adopted in similar cases by the Commission?

8 A We have had rules adopted, in this particular situation,
9 providing for calculation and volumetric withdrawals and
10 also we have had a number of rules which have come out in
11 this same pattern.

12 My feeling in recommending this simpler version was
13 that we have rather a complicated reservoir here. The
14 permeabilities and porosities are not the same between
15 wells and that I really didn't feel like the benefits
16 would be great enough to impose this volumetric withdrawal
17 calculation on the pool.

18 I just don't feel like we are going to get the oil
19 and gas flown to the wells in the uniform rate and ac-
20 complish anything.

21 Q Are you familiar with the Bluit Pool Rules?

22 A Pardon?

23 Q The Bluit Pool Rules.

24 A Not too much. That was not in our district and --

25 Q I might say this. In the original hearing, Humble

1 recommended the adoption of the Bluitt Special Pool
2 Rules.

3 A Right.

4 Q I just wondered how much advantage are you giving a gas
5 well over an oil well as compared with the Bluitt Rules.

6 A You mean in cubic feet of gas per day?

7 Q Yes.

8 MR. UTZ: What you mean is volumetric withdrawal.

9 MR. HINKLE: Volumetric displacement.

10 THE WITNESS: I would anticipate really that under
11 these rules and regulations gas wells will not get any special
12 advantage. The factor in this being that should any gas well
13 ever start producing a bit of oil, I feel sure that the Com-
14 mission would immediately cause a change in the rules and
15 regulations or at least a hearing be called to consider change.

16 However, with the apparent migration of this gascap
17 already into the oil zone and the anticipated secondary recovery
18 to be started in this area within the next year or two, that
19 this will not be a problem.

20 MR. HINKLE: That's all.

21 MR. UTZ: Any other questions?

22 MR. CHRISTY: I would like to ask one or two, if I
23 might, please, sir.
24
25

CROSS EXAMINATION

BY MR. CHRISTY:

Q Number one, as I understood your testimony, the Patrick No. 2's initial potential was very similar to the Patrick No. 1, six million plus.

A It depends on which form you look at. One of them says six million and the other says nine million, and my understanding in talking to people in the field was that the Patrick No. 2 was a better well.

Now, that's nothing that you can hang your hat on.

Q They are both dry gas wells. I believe the Patrick No. 2 is almost aligned between the Patrick 1 and Sunset?

A Right.

Q And you remember the testimony in the prior hearing about the Bond's and the Patrick 1 and the Sunset for the interference tests. Do you remember that testimony?

A Right. As a matter of fact, I have got a page of that here that I was going to read if --

Q That isn't my question. I wondered if you remembered that.

A Yes, I do.

Q Now, my question is, do you know of any interference tests that have been made between the Patrick 2 and the Sunset or the Patrick 2 and the Patrick 1?

A To my knowledge, the Patrick No. 2 has not been perforated.

Q Therefore, there could have been no tests?

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1 A Right.

2 Q Do you remember the testimony of Mr. Kellahin, and I
3 direct the Examiner to page 112 of the last record, where
4 Mr. Kellahin, representing Mr. McClellan, said, "Well, if
5 you Humble, or you Dalport, or you McClellan, go out there
6 and drill another well along this permeability barrier,
7 then we'd know, we could find out." Do you remember that
8 testimony?

9 A Not verbatim, but I believe I do recall that.

10 Q And that well has been drilled but it has never been
11 bottom tested between the two interference tests?

12 A That's correct.

13 Q All right. Let me go to the rules for a second question.
14 As I understood you on rule 9, which you suggest these
15 three times per annum tests, you said that you thought
16 you could live with semi-annual or annual if rule 7 was
17 enforced.

18 A Right.

19 Q You do plan to enforce rule 7, don't you?

20 A I don't know that that's a proper question to me. I would
21 definitely recommend that our district offices strictly
22 enforce rule 7.

23 Q So, with the enforcement of rule 7, you could live with
24 semi-annual or annual tests?

25 A Yes.

1 MR. CHRISTY: Thank you very much. I'm sorry, Mr.
2 Examiner. I forgot to state my name. We didn't get the
3 appearances at the first. I am Sim Christy with Jennings,
4 Christy and Copple, representing Dalport Oil Corporation.

5 MR. UTZ: Other questions of Mr. Stamets?

6 CROSS EXAMINATION

7 BY MR. UTZ:

8 Q Mr. Stamets, in regard to Mr. Christy's last question, I
9 believe you agreed that semi-annual or annual tests might
10 be satisfactory.

11 A Yes.

12 Q You wouldn't want that rule to preclude the necessity of
13 the Commission calling for a test at any time they saw
14 fit, would you?

15 A That is correct.

16 Q Mr. Stamets, in glancing at these rules -- for the benefit
17 of anybody here, this is the first time I have seen these
18 rules so I have just scanned them.

19 Now, is my brief inspection of these rules correct
20 in that you are recommending forty-acre spacing for oil
21 and one-sixty for gas?

22 A Yes. And the rules also provide for less than one-sixty
23 for gas. However, the allowable would be commensurate
24 later. Now, this would not be standard spacing, but it
25 does provide for exceptions to the spacing for less than

1 160.

2 Q Well, now, could I state that another way? Does the
3 rules provide for more than one gas well on 160-acre
4 units? In other words, the allowable assigned, will it be
5 assigned to 160-acres or two 40's or two 80's or four
6 40's?

7 A I'm not sure that it states it precisely. It's the intent,
8 if you wind up with four gas wells on 160-acre unit that
9 you will receive 160-acre allowable all together, total.

10 Q Whether it's four allowables or one allowable?

11 A Right, whether it's four wells or one well.

12 Q Now, on your Exhibit No. 3, you did not include the
13 Patrick No. 2 here in those cross sections, is that
14 correct?

15 A That's right. I did not have a log of that well at the
16 time that this was drawn.

17 Q That's why you did not include it?

18 A That's right.

19 Q What is your information on that? It's located in the
20 northeast northwest of the southeast of Section 12, is
21 that correct?

22 A Right.

23 Q What is your information on that?

24 A I have seen the --

25 Q Is it a gas well?

1 A -- completion log on the well and I have discussed this
2 with Jack and depth people from Dalport, various others.

3 Q Your information indicates that it's producing from
4 liquids?

5 A Right.

6 Q And the next well on your cross section would be the
7 Sunset, Dalport Sunset No. 1, State No. 1?

8 A Right.

9 Q That well, do you know what the GOR is on that well?

10 A Yes. As a matter of fact, I do. I went through, for my
11 own information, and collected the gas-oil ratio as
12 reported on Form C-115 in April of this year. All I have
13 to do is find it.

14 The Sunset No. 1 has a gas-oil ratio, shown in the
15 proration schedule, -- this would be at the last regularly
16 scheduled test, I believe July, a year ago -- of 449 to 1.
17 The ratio reported on the latest C-115 comes out to 1332
18 to 1.

19 Q What was the date of that 115?

20 A That was the April report.

21 Q So, in a space of, oh, less than a quarter of a mile there,
22 maybe a little over a quarter of a mile, we go from an
23 absolutely dry gas well, which is not shown on this cross
24 section, to a well that now has a ratio of 1333 to 1?

25 A Right.

1 Q Do you have any evidence whatsoever that there is any
2 kind of barrier between those two wells?

3 A There is no evidence, that I have, that there is. Based
4 on my Exhibit 5, I feel like it's essentially the same
5 reservoir across there. There could be no barrier between
6 those wells.

7 Q Did you look at any pressure information?

8 A I reviewed the original case and checked the pressure
9 information which was provided in the transcript. I have
10 no additional pressure information since that time. The
11 pressures in the original case were taken by different
12 people at different times, with instruments unknown and
13 by and large, I feel like I just couldn't correlate one to
14 another. I felt like I would just disregard them.

15 Q So you have no pressure information at all?

16 A No, sir.

17 Q In regard to rule 5, your 100,000 to 1, as I understood,
18 you recommended that solely on the basis of a mechanical
19 inconvenience of metering gas -- oil and gas separately?

20 A That, and the fact that the gas wells essentially produce
21 no liquids.

22 Q Your Exhibit No. 2, you show the yellow of 30,000 and over,
23 is that correct?

24 A Yes.

25 Q And we have one, two, three, four yellow wells, if I may

1 call them that. Do you know what the GOR is on those
2 wells actually?

3 A Looking through this April figure or figures that I have
4 written down -- let's see. Let me just get up to the map
5 here and we can pick these off one by one.

6 The Amoco Falgout A, or however you pronounce that
7 name, in Section 23, 14, 29, initially reported a gas-oil
8 ratio of 62,352. The April C-115 shows the GOR of 119,000.

9 The second yellow well I see is this Amoco State EK
10 No. 1. The -- I will have to back up. The information I
11 gave for the Falgout is the information that should go
12 with the State EK. And the Falgout A, we don't have any
13 information on as it is a new well.

14 The third yellow well is the Corinne Grace Well,
15 which I previously mentioned testing in September of 1970,
16 38,909. I would anticipate that if they went out and
17 tested that well today that the GOR would be higher. In
18 my opinion, the gas is moving farther to the east, past
19 this well.

20 Q The last test was 60,000 to 1?

21 A Thirty-eight. The test on this well to the north, Spurck
22 State No. 8, was 60,000. The Wolfson Well is a brand new
23 well and I don't have that GOR.

24 Joe, do you know what that is offhand?

25 MR. RAMEY: All I know is that Wolfson told me it's a

1 questionable oil well, so make it a questionable gas well.

2 THE WITNESS: This was put on by John Runyon in Hobbs.
3 He failed to supply me with the gas-oil ratio. We can get that.
4 It will be part of our permanent records and can be supplied.

5 MR. RAMEY: It might be in my district, too. You
6 might check there.

7 THE WITNESS: Okay. I will check with the Artesia
8 office.

9 A The State EK No. 1 is the only one that I see that has an
10 actual producing gas-oil ratio over 100,000 to 1. We have
11 a few here, the Dalport Spurck State No. 4 has actual
12 producing ratio of 44,000 to 1.

13 Q (By Mr. Utz) Do you consider that an oil well, does it
14 produce oil?

15 A Yes, it did produce oil during that month. It made a
16 grand total of eighty-four barrels.

17 Q Let's get back to the State EK, the Amoco Well, I believe.
18 Does that produce any oil?

19 A One hundred ninety-four barrels in April.

20 Q With the 119 GOR?

21 A Right?

22 Q That's 119,000?

23 A Right.

24 Q Does the fact that that produces oil have any bearing on
25 your sulphureous gas to differentiating between a gas well

1 and an oil well?

2 A Well, not really. There is going to be a certain number
3 of wells along that margin which are going to encounter
4 both the gascap and the oil and they are bound to produce
5 more of the gas than the oil is because gas will flow to
6 the well bore more easily.

7 Q On your formula, you recommended a 2000 to 1 GOR.

8 A Right. Right.

9 Q Then, an oil well producing oil could produce 2000 to 1
10 times its acreage in a normal unit allowable acreage?

11 A Right.

12 Q A gas well could not produce any oil but produces its
13 GOR times its acreage, so there is a variance there of
14 how much as far as reservoir voidage is concerned of how
15 much ~~oil~~ the oil well produces?

16 A That's true enough. Right.

17 Q Do you know of any high GOR wells that produce substantial
18 amounts of oil?

19 A Let me look through this list and see. Right offhand, I
20 don't know. In general, the gas-oil ratio has gone
21 significantly. The oil has dropped off.

22 For instance, the Sunset Wells, both of those tested
23 last year. One of them, the No. 1, for eighty-five
24 barrels and the No. 2 for one hundred barrels a day. The
25 production that was reported, C-115, shows the well

1 producing about 1500 barrels per month, at this time, each.
2 The better producers have low GOR's. For instance, the
3 Amoco State EK No. 2 is a top allowable well, gas-oil
4 ratio of around 200 to 225 to 1. Jack McClellan's Lois
5 State top allowable gas-oil ratio of 686 to 1.

6 Looking through here, I just don't find any wells at
7 all that produce with high gas-oil ratios that are top
8 allowable wells or good wells.

9 Q What did you say the State EK produced?

10 A Which one, the No. 1 or No. 2?

11 Q The No. 1. The one -- I'm not sure. The one with 119,000.

12 A That is the No. 1 Well and it produced 194 barrels.

13 Q One hundred ninety-four barrels per month?

14 A Per month, right..

15 Q Would you consider that an insignificant amount of oil
16 as far as reservoir voidage is concerned?

17 A It's not a very significant figure, that is correct.

18 Q What would be the top allowable for that well?

19 A During the next two months, the top unit allowable will
20 be seventy barrels per day.

21 Q Seventy barrels times, say, thirty ^{days} barrels would be 2100
22 barrels as compared to 194 barrels?

23 A Right.

24 Q As far as the top allowable is concerned, it's pretty
25 insignificant?

1 A Right.

2 MR. RAMEY: What was that ratio on that oil well,
3 top allowable oil well you are talking about? You mentioned
4 that gas-oil ratio on the top allowable oil well.

5 THE WITNESS: There were two of them, only two that
6 I find; Amoco State EK No. 2 produced 2536 in April, with the
7 GOR of 216. Jack McClellan's Lois State produced 2448, with
8 a GOR of 686.

9 Q (By Mr. Utz) Now, if the Commission saw a few of these
10 low ratio oil wells along the vicinity of where you believe
11 the gas-oil contact is going to higher GOR's, what would
12 you suggest we do for remedial action?

13 A If we saw the wells along the margin, the oil wells and
14 their gas-oil ratios increased?

15 Q Yes.

16 A Under rule 7 we would just have to make sure that they
17 didn't exceed their gas allowable of 2000 to 1 times the
18 top unit allowable for the field.

19 Q Would you recommend any change be made in the GOR limit?

20 A None whatsoever. I made no study to that point and off-
21 hand can see no reason to change the same.

22 Q Does that indicate to you that the oil area is evacuating
23 more reservoir area than it should in relation to the gas
24 area?

25 A Of course, the gas is not -- the true gas wells are not

1 being produced. If we --

2 Q They will be, don't you think?

3 A Well, they may be. I have had indications from El Paso
4 Natural Gas Company and Phillips have interest in the gas
5 in this area, but nothing definite. With the need for gas,
6 as it is today, it very well could be produced. However,
7 as each day goes by, I feel like there is less and less
8 chance of damage because the oil is being depleted and
9 secondary recovery will have to be started, probably with-
10 in the next year or two.

11 Q Of course, if this pool was communitized, this would be
12 the ideal way to produce it, would it not?

13 A Right. It certainly would.

14 Q How much monthly allowable would that give a gas well on
15 160 acres?

16 A Let's see. It would be 140,000 a day times four; 560,000
17 sounds like it, a day.

18 Q On 160 acres?

19 A Right.

20 Q Well, seventy barrels is the normal unit allowable. That
21 is 2000 GOR's.

22 A Right.

23 Q That is 2100 a day for a forty-acre tract, is that correct?

24 A That would be 140 a day, wouldn't it? You are talking
25 about the oil as opposed --

1 Q I am talking about the 40-acre tract.

2 A Okay, forty-acre tract. Are you talking about oil or gas
3 allowable?

4 Q On your formula it would be either one, wouldn't it?
5 Seventy barrels normal unit allowable on a forty-acre
6 tract times 2000?

7 A 140,000 a day.

8 Q Fourteen. Okay. Fourteen hundred a day, is that right?

9 A That doesn't sound right. One hundred forty thousand a day.

10 Q Five-hundred sixty is correct, is that right?

11 A Per day, right.

12 Q These wells are below or above 5,000 feet.

13 A Yes, they are.

14 Q All of them?

15 A The wells are about 2,000 feet deep.

16 Q As far as the gas well is concerned, do you consider 560
17 a day to be an economical rate?

18 A That's rather a difficult question for me to answer
19 because I don't own one of them. I did some calculations
20 one day based on some information Jack McClellan gave me
21 and it looked to me like it would be an economical venture,
22 although it might not get your money back quite as quick
23 as you would like.

24 MR. RAMEY: An increase in the price of gas is much
25 more favorable.

1 THE WITNESS: Right.

2 MR. UTZ: That was going to be my next question.

3 Q (By Mr. Utz) Five hundred sixty MCF a day, would that be
4 two-thirds nitrogen?

5 A Well, it might not be quite that high, fifty to sixty
6 percent. This would be on the gas wells. The oil wells,
7 with the nitrogen content, is not quite that high. The
8 further you get away from the gascap the lower the per-
9 centage of nitrogen.

10 MR. UTZ: Any other questions of the witness? The
11 witness may be excused.

12 (Witness excused.)

13 MR. UTZ: Who wants to be first?

14 MR. CHRISTY: Are you going to have a statement?

15 Jack is next, if he wants to be, to put on his testimony.

16 MR. UTZ: Mr. McClellan, he said he was going to put
17 on testimony.

18 MR. MCCLELLAN: I would like to hear the testimony,
19 if he is going to present some.

20 MR. UTZ: You are not going to present any?

21 MR. HINKLE: Just a statement.

22 MR. CHRISTY: We have one witness, Mr. Examiner.

23 (Witness sworn.)

24 (Whereupon, Dalport's Exhibits 1 through 6 were marked
25 for identification.)

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LEON LAMPERT,

having been first duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. CHRISTY:

Q Would you state your name and address, by whom you are employed and in what capacity?

A Leon Lampert, Corpus Christi, employed by Dalport Oil Corporation.

Q In what capacity?

A As a geologist.

Q Mr. Lampert, have you previously testified before this regulatory body as a petroleum geologist and had your qualifications accepted?

A Yes, sir.

Q Are you familiar generally with the area involved in Case 4352 and the wells and the geological history of this field?

A I sure am.

MR. CHRISTY: Are there any questions concerning the witness' qualifications?

MR. UTZ: He is qualified. He's been qualified previously.

MR. CHRISTY: Thank you.

Q (By Mr. Christy) Mr. Lampert, this case concerns the Double L Field in Chaves County, New Mexico, and what is

1 presently described as the Suble Field?

2 A Yes, sir.

3 Q This has been identified as Exhibit 1?

4 A That's right.

5 MR. CHRISTY: This is Dalport's Exhibit 1, Mr.
6 Examiner.

7 Q (By Mr. Christy) Now, would you please identify Exhibit
8 1 a little more thoroughly and tell us what all of the
9 coloring and so forth means on here to your interpretation?
10 A Well, in the central portion you will see the yellow color,
11 which indicates the gascap that Mr. Stamets is talking
12 about. Immediately updip into the west of it, there is
13 a dotted, red line, which indicates the beginning of the
14 tight impervious sands that are going to separate this
15 gascap from additional hydrocarbons of water that lie to
16 the west.

17 Due east of the yellow color, you see the brown.
18 That indicates the oil reservoir and the oil-gas contact,
19 and the green indicates the areas where they have seen
20 water on a downdip edge of the Double L. The red, dashed
21 marker on the east side of our field marks the beginning
22 of the tight impervious sequence of sands that separate
23 the Double L from the Vest Ranch-Queen, which is to the
24 east.

25 All the uncolored areas between the red, dashed lines

1 indicate the tight zones. The intent of this map here is
2 to show on this map there are three separate gas lenses,
3 one of two of which have -- already contain oil, being the
4 Double L gascap and oil reservoir, the Vest Ranch gascap
5 and associated oil reservoir, and off on the west side of
6 the map there are some gas wells in the third lense and
7 there so far is no oil associated with it, only water.
8 Q On the east there appears to be another stratographic
9 trap for here separated.

10 A That's right. The oil field is not shown on my map but
11 it's immediately downdip from the Continental and McClellan
12 Wells that are on the northeast corner of the map. The
13 map also shows a nitrogen content as we have found them on
14 the various wells in the oil reservoir and in the gascap.

15 These nitrogen contents were taken from the Phillips
16 test and Continental test and reported tests by operators.

17 Q As I look at Dalport's Exhibit 1 and Commission Exhibit
18 2, they seem to be very similar, is that correct?

19 A Yes. Mr. Stamets and I are in close agreement with what's
20 occurred out there, --

21 Q All right, sir. Do you have --

22 A -- although this map is contoured on top of the pay.

23 Q Whereas his is top of the Queen?

24 A Top of the Queen, which is about fifteen or so feet above.
25 But this is the base of the anhydrite cap, which is the

1 top of the pay itself.

2 Q Now, you have mentioned the nitrogen content shown on
3 Dalport's Exhibit 1 on certain of the wells. Do you have
4 any GOR information on the various wells in the Double L
5 Pool?

6 A Yes, sir, we have quite a bit since we have about eighteen
7 wells.

8 Q Let me refer you to Dalport's Exhibit 2 and ask you if
9 you would indicate if this is the GOR map you just
10 mentioned?

11 A Yes, sir, it is.

12 Q Now, as of what dates is this information?

13 A As of approximately May of 1971. The map shows two
14 figures next to most of the wells, the top figure being
15 the GOR, approximately, of July of '70, approximately a
16 year ago. Doesn't necessarily mean the original GOR, but
17 the one that was approximately a year ago.

18 The lower figure, the denominator figure, is the
19 GOR taken most recently, between March and May -- actually,
20 around February and May of '71. So, you can look at the
21 top figure and see that -- well, let me refer to Section
22 36 on the map, Dalport's No. 6 Spurck in the northwest of
23 the northeast of 36.

24 The top figure, it says, TSM, too small to measure,
25 which this well, when it was first drilled, it had no gas.

1 A year later, the GOR was 1268 to 1, and immediately east
2 of it, the seven is also too small to measure when it was
3 originally drilled a little over a year ago, and in May,
4 it was 1347 to 1, showing the increase in GOR's.

5 This, as you go down the line, you can see that most
6 of them look the same way especially on the Robb Lease in
7 Section 1 and on the Sunset Lease in Section 12, further
8 on south.

9 Q This, then, depicts that there is substantial increases
10 in the GOR, particularly along the gas-oil contact line
11 that you have shown in Dalport's Exhibit 1.

12 A That's right.

13 Q Is there any instances in which you know of that these
14 GOR figures, at the bottom line, particularly, have
15 substantially increased since the March-May report?

16 A Since the May, yes, sir. The number -- let's see, where
17 is it? The No. 2 Sunset --

18 Q Identify what subdivision it's in, please.

19 A In Section 12, 15, 29, the Sunset Lease is experiencing
20 a marked increased in GOR's and it's over 4,000 to 1.
21 Instead, this No. 2 Sunset is 3354 and it's about 4,000
22 now.

23 Q That's as of what date, June?

24 A As of June.

25 Q June, this year?

1 A Yes.

2 Q There has been an increase in the last two or three
3 monts up another, oh, four or five GOR's?

4 A Yes, sir.

5 Q All right, sir.

6 A The figures ~~up~~ on the very northwest corner of the map,
7 the Falgout A, it's on the very upper left corner, and
8 the information we had the GOR was 16,143 originally when
9 it was drilled and currently was about 50,000 to 1.
10 Actually, it is about 60,000 to 1 now. So, it's right on
11 there on the gas-oil contact.

12 Our No. 8 Spurck, in the southeast corner of Section
13 36, a year ago was 19,153 to 1 and now it's 60,000.
14 Originally, when it was drilled, it was drilled more than
15 a year ago, a year and a half ago, the GOR's were, I think,
16 in the neighborhood of -- what would you say, Dick, you
17 mentioned that in your testimony -- about eighteen?

18 MR. STAMETS: Well, were they that low? Seems like
19 the original I had they were 4,000 or something.

20 THE WITNESS: Less than that. When we first completed
21 it, it was an oil well with a fairly low GOR. It has steadily
22 increased. It has rapidly increased up to the current date.

23 Q (By Mr. Christy) Now, let me refer you to the Sunset
24 No. 1 Well, which was identified in the prior hearing,
25 and particularly refer you to Exhibit C.

1 Does that graphically portray this increase in GOR
2 in Exhibit 3?

3 A You said Exhibit 3?

4 Q We were asking about Exhibit 3 and the Sunset No. 1 Well.

5 A We have found this out. As the gascap expands, as Mr.
6 Stamets said, the nitrogen content of the oil well increases
7 proportionately to the amount of gas that we are now
8 producing. It's proportionate to the increase in GOR's.

9 For instance, when the No. 1 Sunset was drilled in
10 April of 1970, the GOR was right at 700 and -- 449, 449.
11 The nitrogen content on it was fourteen and a half percent.
12 I think your Exhibit 1 of your big map shows the nitrogen
13 fourteen percent. That is in the east half of Section 12.

14 MR. UTZ: You are talking about the Sunset No. 1,
15 which is the curve on Exhibit 3?

16 THE WITNESS: Yes.

17 MR. UTZ: Okay. That first point is fourteen percent?

18 THE WITNESS: Well, fourteen percent. Then, the GOR,
19 as the date of the test, was 750 to 1. When the well was
20 drilled originally it was 449, but on the date of the nitrogen
21 test the gas analysis, it was 750 to 1. That was a year ago.

22 On exactly a year later, on May 28th of this year,
23 we took another test. The GOR was 4,064 to 1. The nitrogen
24 had gone up to 54 percent. So, this dramatically, I think,
25 shows what occurs as the gascap expands eastward providing

1 higher GOR's. Your nitrogen goes up; your BTU's come down.
2 This well had over 1700 BTU's, originally, per thousand. It
3 was exactly 1767 originally and now, a year later, the BTU's
4 are 731, along with this 4,064 GOR. And this is one of the
5 better wells in the field because it originally blew out -- and
6 it was capable to -- and it blew out and it could produce
7 several hundred barrels a day.

8 The No. 2 Sunset, which was drilled the latter part
9 of last year, also is an excellent well, but we don't have the
10 analyses on it. We did make analyses on it.

11 Now, referring again to Exhibit 3 -- well, anyway,
12 the yellow curve shows the increase of nitrogen along with the
13 increase of GOR's. The little dashed curve on the far left
14 side is our No. 1 Robb that originally -- well, not originally,
15 in May of 1970, it had a twenty-nine percent nitrogen content
16 along with a 214 or so GOR, 244 GOR.

17 Now, Mr. Christy, I will have to preface something
18 on this chart because this twenty-nine percent nitrogen and
19 244 to 1 GOR is after the well was squeezed. After the well
20 was squeezed, after the upper zone, the upper pay had been
21 squeezed, this was the gas content because, originally, it was
22 61,000 to 1 before the squeeze job. So, we squeezed it,
23 reduced that GOR to 244, but the nitrogen was twenty-nine
24 percent after the squeeze.

25 A year later, May of this year, GOR on it was 2400 to 1

1 and the nitrogen was up to forty-nine percent. So, again, all
2 is serving -- well, all the graph shows is that as the GOR's
3 came up, so did the nitrogen and BTU's. I have a record of
4 the BTU's; they went down.

5 Now, the graph also shows some information about
6 our Spurck Lease, showing the increase of -- well, along with
7 increases in GOR's you have increase in nitrogen.

8 Q (By Mr. Christy) Now, let me refer you to Exhibit 4,
9 Dalport's Exhibit 4, which is on the board here and ask
10 you if you would comment on that and explain the purpose
11 of it in connection with this hearing?

12 A Well, it's two cross sections. The upper cross section --

13 Q Excuse me. Let's talk about where these cross sections
14 are. Do you have a little map down in the middle of the
15 exhibit showing A to A prime, B to B prime?

16 A You can barely see it, but the top cross section is
17 essentially an east-west cross section.

18 Q Across the north end of the field?

19 A Across the south end of Section 36. It would be very
20 similar to his lower cross section there.

21 Q The word "his" --

22 A Mr. Stamets' Exhibit 4, his cross section BB prime.

23 Q That's five.

24 A All right. That's the upper cross section. The lower
25 cross section is a north-east south-west cross section

1 beginning at the McClellan 1-B Lisa, extending northeast-
2 ward to the McCellan Marion.

3 Q That's on the south end of the field?

4 A Yes, in the south central portion. And the upper cross
5 section shows our gas, original gas well drilled in 1960.
6 They tested nothing but gas. It's structurally high and
7 it continues on through our No. 5 Spurek, which is the
8 second well on the cross section which encountered a tight
9 zone which we think is limited right around the well bore
10 around the well.

11 Continuing eastward through the Dalport 8 Spurek, which
12 is the well that right now has a high GOR of 60,000, that
13 originally was an excellent oil well. The cross section
14 mentions the GOR's back in 1970. I believe that's right.
15 The GOR on February of 1970 was 4427 to 1 and in February
16 of '71 it was 60,000.

17 Now, in March of this year, we squeezed the upper
18 zone and squeezed off everything. We squeezed off the
19 gas completely but we did have oil coming out of the lower
20 zone, but there wasn't very much of it so we reacidized it
21 and broke through and we recovered our gas again. It is
22 back to 60,000 to 1.

23 The cross section continues eastward showing, in
24 brown, the oil pay with the tight streak, the horizontal
25 tight streaks separating the upper from the middle members.

1 Now, the lower cross section starts off on the
2 southwest end, with the McClellan Gas Well Lisa 1-B,
3 continuing through the Patrick No. 1, which is the second
4 well, and to the right is the Patrick No. 2 Gas Well that
5 hasn't been completed and then the fourth well from the
6 left is our Dalport 2 Sunset, which is the east offset to
7 the Patrick Gas Well; the Sunset 2 being an excellent well.
8 It has the highest permeabilities I have seen in the field
9 today, the highest average permeabilities in the entire
10 field which average, I think, is 540 millidarcies over an
11 eight-foot section.

12 The cross section shows the gas-oil contact at a
13 subsea datum of, I believe, it's plus 1935. The well
14 itself is plus 1926 on the Queen pay. It's below the
15 contact, but we have withdrawn a lot of fluids from the
16 well and the GOR's are rapidly coming up. The original
17 GOR on the well is -- can you see that, Joe?

18 MR. RAMEY: Twenty-eight ten. On the Sunset 2?

19 THE WITNESS: Yeah. What does it say there?

20 MR. RAMEY: Twenty-eight ten.

21 THE WITNESS: Twenty-eight ten, that is after com-
22 pletion. And in March it was 3354. It's an excellent well. It
23 can make the allowable right now with the high GOR's in it.
24 And as you continue on the cross section, continue eastward, I
25 wanted to show the McClellan Marion because it has a tight sand

1 zone; it made water, made some oil and it marks the
2 eastern side of the field where you lose porosity.

3 Q (By Mr. Christy) Just for the record, your color coating
4 on Dalport's Exhibit 4 is the same as Exhibit 1, Dalport's
5 Exhibit 1. That is, the gas in yellow, the oil in brown
6 and the water in green?

7 A That's right.

8 Q Any other comment on Exhibit 4?

9 A Exhibit 4 also shows in the upper cross section three
10 oil pays rather than two, which we pick up on cores. If
11 you don't core it, you can't see it. That light streak
12 that we mentioned separates the upper and the middle and
13 then below the middle there occasionally you see a third
14 zone which is the lower zone. It's only been in about
15 three different wells. It is not real widespread, but it
16 does show the Marion Well on the right, the far lower
17 right; does show some water and it may be communicated
18 water from another Queen stringer right below where they
19 perforated, but it is still water, regardless.

20 There is a little water on the downdip in the east
21 edge of the field but it's not a water drive. It's just
22 some connate water. You don't see great amounts anywhere.

23 Q I would like to return to Dalport's Exhibit 1 again. There
24 is shown in the gascap a yellow area of two red lines.
25 One surrounds the Spurck No. 5 Well in Section 36, and one

dearnley-meier reporting service, inc.

is just west of the Wilson No. 1 Well in Section 12.

I would like to ask you if you would explain what that information depicts.

A It depicts tight sand. The 5 is on the cross section, the upper left portion of the cross section. We cored it. It was tight. It had a few stringers of stain in it. We drill stem tested it. It had low pressures. Had we run casing and perforated, we would have probably made some kind of well. But at the time we drilled it we didn't feel like it was warranted.

I believe it's a localized condition that you are going to see all over the field where you have a small spot of tight sand and then it might be twenty acres in extent; it might be five acres in extent; it might be two acres, we don't know. There are fluctuations in the porosities and permeabilities, sort of based on Mr. Stamets Exhibit 5; that is his Paleo topographic map, which no one understands.

MR. UTZ: He does.

A Which I don't, yet. But the 5 did encounter tight sand.

The Wilson Well was tight, the Wilson being in the northwest of the northeast of 12. They did, when they drilled into it -- as I understand it, this is verbal oral communication -- they had very little as they drilled on

1 through the pay and they let it sit overnight and they
2 had forty feet of oil overnight, which is not much of a
3 show.

4 And I think -- the little red mark next to it
5 indicates that it is tight in the vicinity of the Wilson
6 Well, that there is a tight zone there; but, again, it
7 would be a limited tight spot. And there could be others
8 scattered in the gascap and in the oil reservoir, could be
9 anywhere. They are not joined. They are not linear and
10 they are not joined. They are not effective.

11 Q They are not effective permeability barriers?

12 A Right. The sand -- the permeabilities just fluctuate
13 throughout the whole reservoir, the gascap and the oil
14 rim.

15 Q Now, speaking of the Wilson No. 1, did they fract through
16 that tight barrier that you just mentioned?

17 A Evidently, they did something wrong because they -- they
18 shouldn't have drilled it there in the first place, I
19 guess is the original mistake. They do have quite a bit
20 of gas. I thought it was about 6600 to 1 in oral communi-
21 cation, which is on Exhibit No. 2.

22 That fract job that they put on it, which is a
23 30,000 -- 25,000 gallon fract job, I believe probably
24 broke on into the gascap and they are communicating
25 directly into the cap right there.

1 Q You mean the barriers are mechanically breakable?

2 A Yes, sir, evidently.

3 Q All right. Now, Mr. McClellan, I believe at the last
4 testimony, last hearing, rather, page 114 of the transcript,
5 you made a statement supporting Mr. McClellan's theory
6 with respect to the possibility of an impermeable barrier,
7 as testified by Mr. Viney.

8 I would like your comment on that. Why did you then
9 testify that there was and now testify there isn't or made
10 that statement?

11 A At the time the statement was made, our information to that
12 date showed there could have been a linear barrier separating
13 the gas wells from the oil rim. Since then, there has been
14 so much information that we have acquired, more wells have
15 been drilled, that there is no longer any doubt that there
16 is no such barrier, that the Grace No. 2 dry gas well
17 should have been on the barrier and wasn't. It's dry gas.

18 The Patrick No. 2, down here in Section 12, should
19 have been in the barrier and it wasn't. It's dry gas.
20 The Falgout No. 1, up in the very northern end of the
21 field, that you see on your map, has all the characteristics
22 of a dry gas well and if it's dry, if it has such a high
23 GOR and high nitrogen, where is your barrier. There is
24 just no way you can put in a solid barrier in a north-
25 south direction separating the gas from the oil. So, this

1 is why a year ago there was so little control there
2 could have been such a linear barrier. But, since then,
3 the information is such that I feel there is no such
4 barrier.

5 Q All right. I would like to ask you a word or two in
6 connection with the proposed special rules. You were
7 furnished a copy of the rules as proposed and testified
8 to a moment ago?

9 A Yes.

10 Q I would particularly like to ask you in connection with
11 your opinion on rule 9, which is the rule that provides
12 for tri-yearly tests. You heard the testimony that if
13 rule 7 was enforced, semi-annual or annual might be
14 acceptable.

15 I would like to have your comments, if any, as to
16 what the practical effects out on the field are if the
17 tri-annual rule was adopted.

18 A It's just difficult to test them periodically because you
19 usually have to shut down your whole lease to test one
20 well for twenty-four hours. If you have five wells on a
21 lease, then four wells are shut down for four days through-
22 out the month while you are testing. Same way on the
23 larger leases like we have on our Spurck Lease. We have
24 eight wells now and we would have to shut -- it would
25 cost us money to shut them all down three times a year.

1 We would more prefer to take an annual test, like
2 we are doing now, in July or August, whenever the Commission
3 would desire and just do it one time a year. Practically
4 speaking, it would be easier on the operator.

5 Q And if rule 7 was enforced it would also accomplish the
6 same purpose, wouldn't it?

7 A That's right.

8 Q Now, do you have any comment with respect to possible well
9 on 320-acre spacing?

10 A Yes, sir. I would hope that if the Commission adopts
11 these rules here that Mr. Stamets has mentioned, that, in
12 the event an operator should desire to drill on 320 that
13 he would be allowed to do so, also. He would be allowed
14 to produce gas that would be eight times the forty-acre
15 gas allowable instead of four times the allowable, which
16 is the one-sixty allowable Mr. Stamets mentioned.

17 I see no reason why you couldn't go as high as 320
18 acres on the gas allowable. If they do adopt rules, I
19 would hope that they do mention this situation in the event
20 that perhaps some operator would want to drill on a 320.

21 Q And, finally, do I understand that it is your opinion,
22 based upon your exhibit and your work in this area, that
23 the Suble Gas Pool and the Double L Pool are one common
24 source of supply?

25 A That's right, sir.

1 Q Is there anything else I have not asked you that you feel
2 would be of interest to the Commission in consideration
3 of this application?

4 A No, sir. I think that about covers it.

5 MR. CHRISTY: That's all from this witness. We offer
6 in evidence Dalport's Exhibits 1 to 4, inclusive.

7 MR. UTZ: Without objection, Exhibits 1 through 4
8 will be entered into the record of this case.

9 Are there questions of the witness?

10 CROSS EXAMINATION

11 BY MR. HATCH:

12 Q Do you have any evidence that one gas well would ef-
13 ficiently and economically drain 320 acres?

14 A We don't have exact evidence, except elsewhere I have seen
15 gas wells draining -- I have seen rulings for 320 acres and
16 I know in some of these wells, like McClellan's Patrick
17 1, with the high potential test of six million or seven
18 million, you do have good permeability and elsewhere in
19 the gascap we have seen good permeabilities.

20 I just see no reason why you couldn't drain on 320
21 acres and that would give you a little bit over a million
22 a day allowable on the current basis. I think you could
23 do so. I see no reason why you couldn't drain 320.

24 Q Do you have an opinion as to whether a well could drain
25 320 acres?

1 A Yes, sir, I think you could.

2 MR. UTZ: Mr. Hatch, I have a question for you.
3 Would you call this hearing under special rules?

4 MR. HATCH: Yes. We have a problem here on our
5 statewide for this depth. It should be 160. This hearing, of
6 course, did not speak of acreage in the advertisement as to the
7 amount of acreage. I don't know if you are going to consider
8 that to be testimony that would warrant 320 acres.

9 THE WITNESS: It would be important to Dalport to
10 possibly include such a ruling because we do have acreage up in
11 this gascap, also, and we would prefer -- since I believe that
12 we could drain 320, it would be beneficial to us to be able to
13 do so, assuming that there is ever a gas market up in the gas-
14 cap.

15 MR. UTZ: You don't have any testimony to show that
16 one well would drain 320 acres, you just have an opinion?

17 MR. CHRISTY: That is correct at this time.

18 MR. UTZ: As well as I remember, in the last hearing,
19 as well as subject to now, in this hearing, we also had no
20 evidence.

21 MR. CHRISTY: That is my understanding. I know of
22 none and I read the transcript twice.

23 MR. UTZ: Mr. Stamets.

24 MR. STAMETS: I believe you testified, Mr. Lampert,
25 that on your leases, with the number of wells, you would have

1 to shut in all the wells but one in order to test.

2 THE WITNESS: It depends on the lease. Our Amoco
3 Lease in Section 31 is set up that way. I believe we have to
4 shut them down. The Spurck Lease, we have a separate header
5 on there where we can test separately. We only have one battery
6 on the two section lease. And, if we are testing on the north
7 side -- all the flow lines are common -- we have to shut down
8 about four wells to test one. We have very lengthy flow lines
9 due to economic reasons.

10 MR. STAMETS: That is the only question I had.

11 CROSS EXAMINATION

12 BY MR. UTZ:

13 Q Mr. Lampert, in the event an oil well, such as these
14 mentioned in Mr. Stamets testimony, went to gas quite
15 rapidly by not obtaining this information on a more
16 frequent interval, is it your opinion that we could
17 disturb correlative rights in the form of draining too
18 much of the gas area to the oil area?

19 A You are saying if we only tested once a year that --

20 Q Right.

21 A -- you say we may disturb the correlative rights?

22 Q Right. In other words, you might be producing as long as
23 nine months or more for a very high GOR.

24 A Is it within the realm of the Commission's scope to call
25 for a special test if they so desire? I mean that we would

1 be adaptable to that, as far as that goes.

2 MR. CHRISTY: I would certainly think, Mr. Examiner,
3 as you started reaching the hundred thousand limit that you
4 might call for more frequent tests, but not as a fixed rule.

5 MR. RAMEY: It looks like it's being reached right
6 now.

7 MR. CHRISTY: Getting right close, certain wells.

8 THE WITNESS: We are anticipating flooding this. We
9 are holding meetings periodically. We haven't gotten too far,
10 but there will be a secondary water injection recovery.

11 Q (By Mr. Utz) You think there will be?

12 A There has to be. We need it. The reservoir needs it.

13 MR. KNAUF: I wonder if I could ask a question.

14 MR. UTZ: Would you identify yourself for the record?

15 MR. KNAUF: Jim Knauf with USGS. I was wondering,
16 if you do have secondary recovery would you try to establish a
17 barrier between his gascap and the oil?

18 THE WITNESS: Yes, sir. We will have to. We will
19 have to put in an artificial water barrier right along the gas-
20 oil contact, like they did in the Caprock Field. The Caprock
21 Field, incidentally, had the same reservoir characteristics;
22 had a giant gascap and then an oil reservoir.

23 In order to flood it efficiently, they injected
24 water right along the gas-oil contact and tried to fill the gas-
25 cap. Had it been voided today, they couldn't do so; but they

1 were able to set up a barrier or a water line on -- north-south
2 water line along the gas-oil contact.

3 We would plan to do the same thing so that when we
4 move, when we inject water on the downdip east end and push
5 oil westward that the oil will not go into the gascap and wet
6 down that dry porosity you see in the gascap.

7 If we would lose oil in the gascap, there is no
8 telling how much waste we would incur. We would have to stop
9 the oil from moving westward and we would have to use some
10 sort of artificial water barrier.

11 MR. UTZ: Your Exhibit No. 3 was intended to show
12 that, initially, the nitrogen content in the gas zone was
13 substantially higher than it was in the oil zone?

14 THE WITNESS: And still is. The nitrogen in the
15 gas zones have remained about the same, but as the gas -- as
16 the GOR's have increased in the easterly direction, the oil
17 wells have taken the characteristics of this gas that has
18 flowed into them and nitrogen has come up on all the oil wells
19 and BTU's have gone down.

20 Our No. 8 Spurck is a beautiful example. That's the
21 one in the southeast corner of Section 36. It currently has a
22 GOR of 60,000 and it has sixty-four percent nitrogen and it
23 was an excellent well initially when it was first drilled with
24 excellent permeability.

25 MR. UTZ: Do you contend this is evidence that there

1 is no barrier between the gas area and the oil area?

2 THE WITNESS: That's right. These characteristics are
3 indicative of a giant cap moving -- a large cap, not a giant
4 cap, a large cap moving eastward, whereas a very thin, narrow
5 cap wouldn't -- I don't think would have the intensity as
6 shown by our increase in GOR's.

7 MR. UTZ: Other questions of the witness? You may
8 be excused.

9 (Witness excused.)

10 MR. UTZ: Other testimony?

11 MR. CHRISTY: For the record, I would like to return
12 to the Commission the exhibits and testimony from the prior
13 hearing and that's all we have for Dalport.

14 MR. UTZ: You haven't told Ida about this, have you?

15 MR. CHRISTY: I am returning it on the record.

16 MR. UTZ: You had better tell Ida.

17 MR. CHRISTY: I will. We have other copies. Do you
18 want some more copies of Exhibit 4? We have some extras.

19 MR. UTZ: I don't think we need any more.

20 Any other testimony? If there is no further
21 testimony, we will open the hearing for statements.

22 Let's take a ten-minute break.

23 (Whereupon, a short recess was taken.)

24 MR. UTZ: The hearing will come to order, please.

25 We are now ready for statements, if there are any, on Case

1 4352.

2 MR. HINKLE: Mr. Examiner, I would like to make a
3 brief statement on behalf of Humble. I think it's already been
4 made clear --

5 MR. UTZ: Would you state your name for the record,
6 please?

7 MR. HINKLE: I already made an appearance this
8 morning.

9 I think it has already been made clear that the
10 Commission will consider the evidence which was originally
11 introduced in this case. In that connection, I want to call
12 attention to the fact that Humble had introduced the evidence
13 from two witnesses and structural maps, cross sections and so
14 forth, which showed that the Double L and the Suble were one
15 and the same pool, and I think you will find that that sub-
16 stantiates, corroborates the evidence that has been introduced
17 here this morning.

18 At that time, Humble made a point that withdrawals
19 of gas greater than the volumetric equivalent amount of oil
20 withdrawal would cause migration of oil into the gascap and
21 would thus cause economic waste which, I think, has already
22 been pointed out by the evidence here.

23 Humble also proposed the adoption of field rules
24 similar to the Bluit-San Andres Associated Pool. Humble would
25 still like to urge the Commission to consider these rules in

1 lieu of those which have been offered.

2 MR. UTZ: How many wells does Humble have in the pool,
3 Mr. Hinkle?

4 MR. HINKLE: I don't know offhand.

5 MR. RIVAS: Harley Rivas with Humble. I know we have
6 four on the Luss Lease and must have a half dozen or more.

7 MR. UTZ: If the Commission -- this is on the record --
8 if the Commission considers such a formula, as we have in the
9 Bluit, we would have to have some data from quite a number of
10 wells in there as to --

11 MR. HINKLE: I think that was presented at the original
12 hearing as to the interest that Humble has and their wells and
13 so forth, was it not.

14 MR. RIVAS: Some of it, yes. I think Mr. Utz is
15 right, though. There would have to be some more data for such
16 a volumetric balance.

17 MR. UTZ: Would Dalport be in the position to furnish
18 such data?

19 MR. LAMPERT: Yes, sir. I think most of them have
20 the data any way. Both the other companies already have it.

21 MR. UTZ: Such as reservoir GOR at various pressures?
22 That's the main thing I am thinking of.

23 MR. LAMPERT: We will furnish whatever they like,
24 within the realm of reason.

25 MR. UTZ: All right. Are there other statements?

1 MR. McCLELLAN: Jack McClellan. I have prepared a
2 statement here I would like to have entered in the record. May
3 I sit here and read it?

4 MR. UTZ: Yes, you may.

5 MR. McCLELLAN: Before I make the statement, I would
6 like to point out one thing. Perhaps it's been completely
7 ignored, the relationship of the Sulimar Field, which is to the
8 south of this field, an identical situation. However, the
9 striking thing about the Double L in the Sulimar is that the
10 Double L is experiencing these rapid rises of gas-oil ratios,
11 proportionate rise in nitrogen content due to the fact that
12 there are gas wells, pure gas wells that people are contending
13 is the gascap of that field.

14 It would seem odd to me that the Sulimar wouldn't
15 also have the same type gas field. I am sure it must. We are
16 experiencing no increase in gas-oil ratios, no increase in
17 nitrogen content, none whatsoever.

18 I don't think you can say there's a gascap to that
19 field and say there's not a gascap to the Sulimar. I contend
20 that the reason you are experiencing this is because you have
21 communicated into these existing gas wells by artificial means
22 which we have not done in the Sulimar.

23 It is the position of this operator that the
24 original conclusion of this Commission, establishing the Suble-
25 Queen Gas Pool, was correct based on the information available

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1 at that time, and that in the interim no significant infor-
2 mation has been produced that would alter the original decision
3 of this Commission.

4 The Queen sands in the area under discussion are very
5 complex and, as yet, not completely defined. Any amount of
6 geological and engineering evidence can be presented to establish
7 the existence or non-existence of a separating barrier between
8 the sands, or that the gas bearing sand is, in fact, the gascap
9 to the oil sand or in a separate reservoir.

10 The reported increase in the GOR and nitrogen content
11 in several wells in the Double L Field indicate that communi-
12 cation between the Suble gas reservoir and the oil zone of
13 the Double L does exist and has been occasioned by artificially
14 connecting the two zones through fracturing of several wells.
15 As a result of this connection, many wells in the Double L
16 are now draining the gas from the Suble gas reservoir without
17 resulting in economic remuneration to the owners of the gas.
18 These owners have no recourse to this drainage, due to the
19 inability to sell small volumes of gas that would result upon
20 application of gas formulas now in use, as the nature of this
21 gas, which, in effect, is "half gas", makes it uneconomical
22 to produce unless produced in large volumes.

23 A recently developed process separates the nitrogen
24 from the methane, resulting in a commercial gas. I have been
25 negotiating for a nitrogen extraction plant to be installed in

1 the area of my three existing shutin gas wells, now classified
2 as the Suble Gas Pool. This plant requires an input of
3 12,000,000 cubic feet per day of nitrogen gas and an output of
4 approximately 5,000,000 cubic feet per day, the production
5 from the output side having a BTU rating of 950, and a value
6 of approximately \$20,000 per month. I have a firm offer for
7 the installation of such a plant, but it will require delivery
8 of 12,000,000 cubic feet per day to make such a plant feasible,
9 which cannot be achieved unless the existing gas wells and
10 potential gas acreage is allowed to produce, not subject to
11 rules limiting the volumes below the necessary amount needed
12 to run the plant.

13 The present rules of the Oil Conservation Commission
14 pertaining to gas reservoirs in relationship to oil reservoirs
15 are not equitable to this area as the gas has a low BTU and
16 corresponding high nitrogen content. In the past, this type
17 gas was not commercial. The situation has now changed and
18 this quality gas has become of prime importance to the industry
19 and the nation, with a corresponding increase in value, thereby
20 making this low quality gas an economic commodity that is
21 needed to help fulfill the energy deficiency now present in
22 this Country.

23 Any decision of this Commission that would prevent
24 the sale of this gas in large quantities would seriously
25 curtail, if not eliminate, the possibility of utilizing this

1 energy source, resulting in the loss of revenue to the State
2 of New Mexico, the Federal Government, who is the principal
3 royalty owner, and owners of the existing wells and potentially
4 productive acreage. Operator has invested a great deal of time
5 and money toward the development of this rather large area for
6 exploitation of a new resource, low quality commercial gas. In
7 my opinion, this gas covers a large area and is present in
8 great quantities.

9 The future use of this gas is, in a large part,
10 dependent upon immediate planning and securing the newly
11 developed nitrogen extraction plant, or a source of use for the
12 nitrogen in its present form. This raw gas could be mixed with
13 high BTU gas, resulting in a larger volume of useable gas with
14 a more desirable BTU content, or used as a re-pressuring agent
15 for depleted oil fields adaptable to this type of re-pressuring.
16 This use would not only recover vast amounts of otherwise
17 unrecoverable oil, but also remove the nitrogen from the gas,
18 making it a highly useable and profitable by product. For this
19 to be feasible it will be necessary that a large constant source
20 of gas be available and that there will be assurance that
21 during the time of securing a use for utilizing this gas the
22 ability to obtain the necessary volume will not arbitrarily
23 be restricted at some later date.

24 I am not recommending that the gas from the Suble be
25 produced at the expense of reducing the ultimate recovery from

1 the Double L Oil Pool. At the present time, the nitrogen gas
2 content is increasing, particularly on the west side, which,
3 in my opinion, is due to the artificial connection previously
4 discussed. This gas from the gas field is not beneficial to
5 oil production, as it does not have sufficient pressure to move
6 the oil and will not go into solution for the same reason,
7 thereby only raising the GOR on these wells, resulting in a
8 lower price for the otherwise higher BTU of the casinghead gas
9 and will result in the economic waste of gas due to Phillips
10 inability to handle ever larger volumes of low BTU gas.

11 Phillips has no facilities to handle this type gas
12 and will eventually have to restrict the volume of take,
13 lowering the amount of oil that can be produced. An increase
14 in the GOR in order to produce more oil would compound the
15 present bad situation and I am opposed to any consideration of
16 a higher GOR for reasons already stated and, also, that it
17 would increase the drainage of the Suble Gas Pool.

18 In summary, it is my opinion that the Suble Gas Pool
19 is a separate reservoir as originally determined, that it is
20 now being depleted by the ever increasing GOR's in the Double
21 L Oil Pool, and that a strong possibility exists that if gas
22 were produced in large volumes from the Suble that it would
23 curtail the increasing GOR and give relief to Phillips in their
24 ability to handle the normal casinghead gas. I would suggest
25 to this Commission that they consider more flexible rules

1 pertaining to this situation due to the changing economics of
2 the oil and gas industry. If changes are made, I would suggest
3 that consideration should be given to much larger allowables of
4 gas with inferior quality, to compensate for the difficult
5 economic features involved in the resulting net price of such
6 gas.

7 I request that the present order of the Commission
8 remain unchanged until the information presented today can be
9 studied and consideration be given to a new formula pertaining
10 to this unique area.

11 Thank you.

12 MR. UTZ: Are there other statements? The case will
13 be taken under advisement.

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I N D E XWITNESSPAGE

R. L. STAMETS

Direct Examination by Mr. Hatch

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Cross Examination by Mr. Hinkle

30

Cross Examination by Mr. Christy

32

Cross Examination by Mr. Utz

34

LEON LAMPERT

Direct Examination by Mr. Christy

46

Cross Examination by Mr. Hatch

63

Cross Examination by Mr. Utz

65

E X H I B I T SOCC'S:MARKED:

Nos. 1 through 6

3

DALPORT'S:MARKED:

Nos. 1 through 6

45

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1 STATE OF NEW MEXICO)
2) ss
3 COUNTY OF BERNALILLO)

4 I, BRENDA BURKS, Court Reporter in and for the County
5 of Bernalillo, State of New Mexico, do hereby certify that
6 the foregoing and attached Transcript of Hearing before the
7 New Mexico Oil Conservation Commission was reported by me;
8 that the same is a true and correct record of the said
9 proceedings to the best of my knowledge, skill and ability.

10 Brenda Burks
11 Court Reporter
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21

22 I do hereby certify that the foregoing is
23 a complete record of the proceedings in
24 the hearing of Case No. 4352,
25 heard by me on June 30, 1971.
New Mexico Oil Conservation Commission

dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

200 SUMMIT BLDG. • P.O. BOX 1092 • PHONE 243-6491 • ALBUQUERQUE, NEW MEXICO

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
May 19, 1971

EXAMINER HEARING

IN THE MATTER OF:

Case 4352 being reopened by the Oil
Conservation Commission upon its own
motion to give all interested persons
an opportunity to appear and present
evidence to whether the Double L-
Queen and Suble-Queen Pools, Chaves
County, New Mexico, are in fact
separate reservoirs or one common
reservoir.

Case No. 4352

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: We'll call Case 4352.

MR. HATCH: Case 4352, in the matter of Case 4352 being reopened by the Oil Conservation Commission upon its own motion.

Mr. Examiner, there has been some discussion between the staff and various representatives of ownership in the Double-L and Suble-Queen Pools, and it is my recommendation that this case be continued to June the 30th.

MR. NUTTER: Case No. 4352 will be continued to the Examiner Hearing to be held at this same place at 9:00 o'clock A.M., June 30th, 1971.

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss

I, SYLVIA AMARO, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4352 heard by me on May 17, 1971.

Sylvia Amaro
Court Reporter

[Signature] Examiner
For Mexico Oil Conservation Commission

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209 SIMMS BLDG. • P.O. BOX 1072 • PHONE 243-4491 • ALBUQUERQUE, NEW MEXICO

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 28, 1971

EXAMINER HEARING

IN THE MATTER OF:

Case 4352 being reopened
by the Oil Conservation
Commission upon its own
motion to give all interested
persons an opportunity to
appear and present evidence
as to whether the Double
L-Queen and Suble-Queen Pools,
Chaves County, New Mexico, are in
fact separate reservoirs or one
common reservoir.

Case No. 4352
(Reopened)

BEFORE: Elvin A. Utz, Examiner

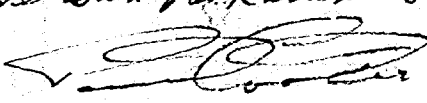
TRANSCRIPT OF PROCEEDINGS

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

Hearing Date APRIL 28, 1971TIME: 9 A.M.

NAME	REPRESENTING	LOCATION
John D. Russell	Texas Pacific Oil Co.	Roswell
Allen A. Wicke	" "	Midland
G. B. Freedman	Wolfson Oil Co.	Midland
Jerry Tweed	Atlantic Richfield	Midland
H. E. Harrington	Hanson Oil Corporation	Roswell
Les Brin Van Landuyt	Amoco Prod. Co.	Ft. Worth, Texas
	"	Roswell
Victor T. Lyon	Continental Oil Co.	Hobbs
James E. Hinkle	Atl. Richfield	Roswell
B. C. SINCLAIR	PENNZOIL UNITED, INC.	MIDLAND
J. C. Raney	✓	✓
Booker Kelly	✓	SF
Curtis Cook	Texaco	Hobbs
Bob Lee	Texaco	Hobbs
Jason Kellah	Kellah & Fox	Santa Fe
William J. Harvey	Seaf. & Reg. 6" Oil Co.	Santa Fe
Donald E. Hatten	Reg. 6" Oil Co.	SF

1 MR. UTZ: The hearing will come to order,
2 please.

3 I'll call the cases that are to be continued
4 or dismissed first. Case 4352, we re-opened this case --

5 MR. HATCH: Mr. Examiner, this case was called
6 on the application of the Oil Conservation Commission,
7 and its staff recommends this case to be continued to
8 the -- to May 19th pending further study.

9 MR. UTZ: Case 4352 will be continued to
10 May 19, 1971.
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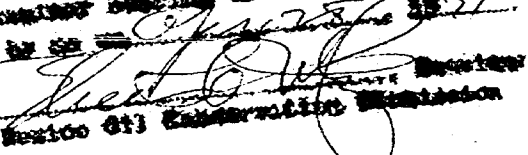
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1 STATE OF NEW MEXICO)
2 COUNTY OF MCKINLEY) ss

3 I, Jerry Martinez, Court Reporter in and for the
4 County of McKinley, State of New Mexico, do hereby certify
5 that the foregoing and attached Transcript of Hearing before
6 the New Mexico Oil Conservation Commission was reported by
7 me and that the same is a true and correct record of the said
8 proceedings, to the best of my knowledge, skill and ability.

9
10 
11 Court Reporter

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I do hereby certify that the foregoing is
a complete record of the proceedings in
the Executive Hearing of Case No. 4352
heard by me on August 28, 1971

New Mexico Oil Conservation Commission

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209 SUMMIT BLVD. • P.O. BOX 1092 • PHONE 343-4491 • ALBUQUERQUE, NEW MEXICO

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Hobbs, New Mexico

April 14, 1971

EXAMINER HEARING

IN THE MATTER OF:

Case 4352 being reopened by the
Oil Conservation Commission upon
its own motion.

Case No. 4352
(Reopened)

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

1 MR. NUTTER: The hearing will come to order, please.
2 We'll call first this morning Case Number 4352.

3 MR. HATCH: Case 4352. (Reopened) The matter of
4 Case 4352 being reopened by the Oil Conservation Commission
5 upon its own motion.

6 Mr. Examiner, this case, as it is being reopened
7 by the Commission on its own motion, and the Commission is
8 not thoroughly prepared to present the case at this time, we
9 would like to move that it be continued to the regular hearing
10 date in May.

11 MR. NUTTER: Case Number 4352, as announced on this
12 docket will be continued to April 28th, 1971 hearing, at
13 which time it will be further continued to May 19, 1971.
14 The hearing will be in the Oil Conservation Commission
15 conference room on the second floor of the State Land Office
16 Building at Santa Fe, New Mexico, at 9:00 o'clock a.m. on
17 May 19th, 1971.
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PAGE 3

1 STATE OF NEW MEXICO)
2) SS
3 COUNTY OF BERNALILLO)

4 I, LINDA MALONE, Court Reporter in and for the
5 County of Bernalillo, State of New Mexico, do hereby certify
6 that the foregoing and attached Transcript of Hearing before
7 the New Mexico Oil Conservation Commission was reported by
8 me and that the same is a true and correct record of the
9 said proceedings, to the best of my knowledge, skill and
10 ability.

11 Linda Malone
12 Court Reporter
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21 I do hereby certify that the foregoing is
22 a complete record of the proceedings in
23 the Examiner Hearing of Case No. 1352
24 held by me on April 14, 1971
25 [Signature] Examiner
New Mexico Oil Conservation Commission

dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

205 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-4491 • ALBUQUERQUE, NEW MEXICO

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
May 27, 1970

EXAMINER HEARING

IN THE MATTER OF:

Application of Jack L. McClellan
for the creation of a new gas
pool, or, in the alternative, the
establishment of pool rules for
two existing pools, Chaves and
Lea Counties, New Mexico.

CASE NO. 4352

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: The hearing will come to order. Case 4352.

MR. HATCH: Case 4352, Application of Jack L. McClellan for the creation of a new gas pool or, in the alternative, the establishment of pool rules for two existing pools, Chaves and Lea Counties, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin and Fox, Santa Fe, appearing for the Applicant.

MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant, Cox & Eaton, appearing on behalf of Humble Oil and Refining Company.

MR. UTZ: Other appearances?

MR. KELLAHIN: I have a statement that was left with me on behalf of Pan American Petroleum Corporation which I'd like to read at the conclusion, or the end.

MR. UTZ: I guess we'll allow that. They should have stayed here and said it themselves. So, you may proceed.

MR. KELLAHIN: We have one witness I'd like to have sworn, please.

(Witness sworn.)

(Whereupon, Applicant's Exhibit A was marked for identification.)

RALPH VINEY,

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A My name is Ralph Viney. I'm from Midland.

Q What business are you engaged in, Mr. Viney?

A I am a consulting engineer.

MR. UTZ: How do you spell your last name?

THE WITNESS: V-i-n-e-y.

Q (By Mr. Kellahin) Mr. Viney, have you ever testified before the Oil Conservation Commission or one of its examiners and made your qualifications as an engineer a matter of record?

A Yes, sir.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. UTZ: Yes, they are.

Q (By Mr. Kellahin) Mr. Viney, in connection with your work as a consulting engineer, have you done any work for Jack L. McClellan in connection with the case presently before the Commission?

A Yes, sir.

Q And briefly, what is proposed by the Applicant in

this case, Mr. Viney?

A Briefly, Mr. McClellan desires the establishment and designation of a new Queen Gas Pool.

Q Now, you heard the attorney read the call of the docket, and it also includes an alternative proposal. Would you elaborate on that later?

A Yes, sir; I'll elaborate on it right now. We, after obtaining the evidence of tests, did not feel that the alternate proposal was necessary or justified.

Q Now, in connection with your study, did you make a study of the area involved in this application?

A Yes, sir; we did.

Q What area did you actually make a study of?

A Well, in general, we made a study of the areas of Sections, or Townships 14 and 15 South, Ranges 29 and 30 East, Chavez County, New Mexico.

Q Now, did that embrace what has been designated by the Commission as the Double L Pool and the Sulimar Queen Pool?

A Yes, sir, and wells outside of the boundaries of these designated pools.

Q And the wells outside the boundaries of these designated pools are in the area that is under consideration in this case; is this correct?

A Yes, sir.

Q Now, on the basis of this study, just briefly, how did you go about making it?

A Basically, the study commenced by Mr. McClellan asking us to establish, if possible, if communication did exist or did not exist between his Double L -- I mean, between his Patrick Well in Section 12, 15 South, 29 East, and the Double L Field to the east of the Patrick Well. Basically, we started out by preparing the geology and looking at the geology and reviewing the evidence of logs, core analyses, prepared basic geological data which is shown on Exhibits 1 and 2 in the exhibit presented to the Commission.

Q That's in the booklet which has been marked as the Applicant's Exhibit A?

A That is correct.

Q You're referring to Exhibit 1 in that exhibit: is that correct?

A Yes, sir.

Q Now, will you continue your discussion of Exhibit 1, please?

A All right. Reviewing the geological data and noting that certain wells in the Double L Field, namely the Spurck Number 5 in Section 36 was tight in both members of the Queen Sand. That's 36, 29 East, Mr. Hinkle.

MR. HINKLE: Six?

THE WITNESS: Thirty-six.

MR. HINKLE: Thirty-six?

THE WITNESS: Yes, sir. We then prepared the geological map which is shown and postulated a boundary condition. Now, I will point out at this time that this same geological evidence is held by, or was held by Mr. McClellan when we first reviewed his material. This evidence I believe is also held by other operators in the field.

Following this, of course, we had postulated this boundary, but this was not proof positive that separation did exist. We then asked permission and did receive permission to conduct pressure drawdown, pressure buildups, and interference tests from the New Mexico Oil and Gas Conservation. The tests conducted and the information gained supported our postulated pinch out.

Q (By Mr. Kellahin) On Exhibit 1, what pinch out are you talking about?

A We are talking about the west pinch out, which is marked on this exhibit as the porosity pinch cut along the west boundary of the Double L Field.

Q And that would be in Section 1 in 29 East; is that right?

A Yes, sir. Actually, the boundary is shown in Sections 25, 36 in 14-29, in Sections 1, 12 in 15-29.

Q In other words, it runs along the entire western

boundary of the Double L; is this your understanding?

A Yes, sir. We also noted that wells now owned by Dalport, previously McPheron and Rob wells in Section 1, were high gas-oil ratios and had both members of the Queen Sand open.

Q Now, is that the well that's designated Dalport Well Number 1?

A Yes, sir, and 2.

Q And 2?

A Yes, sir. These wells were very high ratio wells and Dalport has just successfully squeezed off the upper perforations and reduced the gas-oil ratio to less than 200 cubic feet per barrel.

Q Is that on both the wells, or the Number 1 Well?

A On the Number 1 Well. Our report is that they are now working the Number 2 Well.

Q Have you anything else to add in connection with Exhibit 1?

A No, sir. The tops have not been indicated on the map, but they are available. Rather than clutter up a map reduced to this size, we just left them off.

Q Now, referring to what has been marked as Exhibit Number 2, would you identify that exhibit, please?

A Exhibit Number 2 represents gross isopachs of the Double L Field, the Sulimar Field, and the undesignated Gas

Queen Field, which encompasses the Patrick Federal Number 1 Well.

Q Now, does that also include another gas well, the undesignated Queen Gas?

A Yes, it includes Mr. McClellan's Lisa Number 1 in the northwest of the northwest of Section 13, 15-29.

Q Now, on what information did you base this isopach map?

A The isopach map was prepared on the basis of analyses of electric logs, core analyses, and cable tool drilling.

Q Were many of these wells drilled by cable tool?

A Yes, sir, and I would say that in most cases, I would say the majority of the wells have been cable tooled.

Q Now, referring to what has been marked as Exhibit Number 3, would you identify that exhibit?

A Yes, sir. Exhibit 3 is a schematic cross section on the top of the Queen commencing from the west side and the Patrick Well, coming across to the Dalport Sunset Well in the Double L Field, across to Mr. McClellan's Elyse Well on the east side of the Double L Field, and then dropping over and picking up the Continental Means Well, which is located in Section -- you have it there, (indicating), excuse me.

On our maps, we forgot to include that well on the Exhibits 1 and 2. But the well is located actually in Section 28, 14 South, Range 30 East, and if you will, just mark it just

above the "T" on that "T-14" above and a little to the right is the location of the Continental Means Well.

MR. UTZ: That's Continental Means, M-e-a-n-s --

THE WITNESS: Yes, sir.

MR. UTZ: -- Gas Well?

THE WITNESS: Yes, sir. The Patrick Well, as you will note, is designated a gas well, and we have a barrier condition between the Patrick and the Dalport Sunset Well. We then came over to the Elyse and we have an oil-water and a gas-oil contact in the Double L Field. Then, as you go across to the Continental, go east and downdip to the Continental Means Number 1 Well, you have a dry gas well again. There is definite water contact and water being produced in the Double L Field.

Q (By Mr. Kellahin) Now, that is particularly shown at the Jack L. McClellan Elyse Number 1?

A Yes, sir. To point out, this Elyse Number 1 does not produce water, but we just pictorially showed that there was a water-oil contact in the Double L Field.

Q Now, in your opinion, is the Continental Means Well connected with the Double L Pool?

A No, sir, I do not think it is connected. Otherwise, we probably should have had water in that Continental Well.

Q Why have you included it on this exhibit, then?

A The purpose of this schematic drawing is to more or less bring out the fact that -- which, in our opinion, and stated in our cover letter, that after reviewing the available data, it is our opinion that the Queen gas and oil reservoirs in this area are a series of echelon type shoreline sand deposits, separated by areas of no porosity. Each separate reservoir has its distinct characteristics. The Double L Field, as you will note, has a gas-oil contact and an oil-water contact.

The Patrick Well and the Means Well are both dry gas wells, which we will also show the characteristics of this gas to support dryness, rather than associated produced gas.

Q Now, have you prepared a cross section of this area, a cross section map?

A No, sir, other than this schematic -- other than of this area, no. Now, we have a cross section of the Double L Field which does include the Patrick Well that does not include the Continental Means Number 1 Well.

Q Now, turning to Exhibit Number 4, is that the cross section?

A Yes, sir.

Q Would you discuss the information shown on that exhibit?

A Let me color them with these, please, if I may,

(indicating). If you'll look on your maps, you'll find this Spurck Well in Section 36, Spurck 5, right in the middle of Section 36. This well was tight. Here is the gas-oil contact with the gas on the upper member of the Queen pay in this field. There could be, and I'll state this with that reservation, there could be a gas-oil contact in the lower member of the Queen Sand, but we have no definite proof at this point.

The well drilled some eight to ten years ago, which is Section -- I mean Well Number 1 over in Section 36 in the southwest corner, did have gas at an initial shut-in pressure of something like 760 pounds. This well, when it was completed, had a pressure of 743 pounds.

Q What well is that?

A This is the Spurck Number 8.

MR. UTZ: Where is it located?

THE WITNESS: This is Dalport. It's in the bottom of that section, Mr. Utz, right there, (indicating). We went along and put a barrier between the Number 5 Well and the rest of the wells in that section. We then dropped down below and in the next section, Section 1, and found high gas-oil ratio performance, which further substantiated both on structure and content of the formation that we were in the gas cap in this area, realizing at this point we have not proved separation between the Double L and the Patrick Well.

The oil-water contact in the Double L field, we do not know where it is. Humble picked it up, picked up a

well the other day at 1900 feet at the top of the Queen and it did not have water. It may be less than this. We do not know. Now, if I may go back, let's continue the development of the pressures. If you would turn to Exhibit 5, included in the Exhibit A submitted, you will note that information is presented on both the Sulimar and the Double L Field. The purpose of this, of course, was originally planning for the alternate position that we may have had to take, but did not.

In the Sulimar Field projections, you will note that we have projected at the bottom hole pressures on a time scale, and have actually run the pressures as the reservoir pressures were obtained, noting that the Patrick Well has not shown but a ~~ten~~ pound decline in approximately two years. We doubt that the original pressure on the Patrick Well was correct as it was calculated, but for the purpose of measurements, the accuracy of bombs sometimes are within this area.

So for all practical purposes, we have seen no change in the bottom hole pressure of the Patrick Federal Number 1. You will note below the points, below those points 1 and 5 on that Sulimar chart are falling below. We conducted a build-up pressure on Mr. McClellan's Lisa A-2 of seventy-two hours right in the middle of the Sulimar Field. It is now down to 270 pounds. Last night we finished a pressure on the new well that Jack McClellan has drilled, his Lisa A well

Number 9, which is located in the southwest of the southwest of 13, 15 South, 29 East. This pressure was 476 pounds. The pressures in the Sulimar are declining and the performance is completion-type mechanism.

MR. UTZ: What well was that?

THE WITNESS: That's the Lisa A Number 9, located in the southwest of the southwest of 13 -- I mean, excuse me, yes, Section 13, 15 South, 29 East.

MR. UTZ: That's four hundred what?

THE WITNESS: Four hundred seventy-six pounds, sir.

(Whereupon, Applicant's Exhibit B was marked for identification.)

Q (By Mr. Kellahin) I hand you what has been marked as Applicant's Exhibit B. Would you identify that exhibit, please?

A Yes, sir. Exhibit B is a bottom hole pressure survey report on the Jack L. McClellan Lisa A Well Number 9.

Q And that's the well you just testified to?

A Yes, sir. Our conclusions are that for all practical purposes and without doing any detailed engineering, that the average pressure in the Sulimar Field now ranges from 270 to about 476 or an average of about 370 pounds.

Q Now, on the basis of that pressure and the pressures which you still have in the Patrick Well Number 1, would that indicate there is any communication between those two areas?

A I would doubt very seriously that the two areas are in communication at all, in view of the total production that has been drawn from the Sulimar Field.

Q And that is shown on the exhibit as 244,000 barrels?

A Yes, sir. That's 244 through February.

Q Do you have a later figure on that?

A Yes, sir, (indicating). And in the month of March, 23,527 additional barrels were produced, bringing the total production from the Sulimar Field to approximately 270,000 barrels through March.

MR. UTZ: What exhibits are you referring to there?

THE WITNESS: Excuse me, sir. Exhibit 5.

MR. UTZ: All right.

THE WITNESS: Go to the left hand side, Mr. Utz.

Q (By Mr. Kellahin) Now, referring to the right hand portion of Exhibit 5, would you continue your discussion?

A Yes, sir. The right hand portion of Exhibit 5 is a pictorial presentation of the pressures and production in the Double L Field. Again, the Patrick pressure is plotted in September, 1967, and the next pressure recorded was in the Spurck Number 2 Well in April of 1969. This was a drill stem test pressure and 743 pounds. Mr. McClellan then completed his Marion Federal in June, 1969, and a pressure of 712 pounds also on a drill stem test was recorded.

Then in August, a bottom hole pressure using an Amerada bomb on the Spurck Number 3, Dalport Well, revealed a total pressure of 688 pounds. Mr. Kellahin, at this juncture, I would like to point out that one of the first supporting pieces of evidence we had to show separation between the Double L Field and the Patrick Federal Well was this disparity of pressures recorded in the Double L Field and the pressure in the Patrick Well. The pressures in the Double L field in '69 were approximately eighty pounds, fifty to eighty pounds higher than the initial pressures in the Patrick Well and were measured some eighteen months after the completion of the Patrick Well.

This became our first hint that there was separation. Had there not been separation and with the permeabilities that we later determined in the Patrick Well and in the Double L Field Well, you should have had equalization of the pressures between these two areas. Now, may I continue with the pressures?

Q I would like to point out, however, on my exhibit, you don't show a pressure with the Patrick Federal Number 1 on 5770, apparently.

A Yes, sir. It is Number 14, and it's shown on the line; yes, sir.

Q I see.

A We also obtained some pressures on the Humble Well. We had 609 on March 2nd, and you'll notice all the pressures

are shown here. The only pressure we do not have and cannot verify with complete accuracy is the 540 pounds that was reported on the Humble DeSmet Well on March 30th. The pressures in the Double L Field are declining.

Q Now, that also shows the cumulative production. Is that through February, also?

A Yes, sir; that's through February. And in March, the production was 20,450 barrels with 13,420 MCF of reported gas, bringing the total production from the Double L Field to approximately 103,000 barrels through March. And the April production was approximately two thousand barrels better than the March production, but I do not have figures to support this.

Q That completes the testimony on Exhibit 5, Mr. Viney?

A Yes, sir.

Q Now, turning to what has been marked as Exhibit Number 6, would you explain that exhibit?

A Yes, sir. And if I may, I would like to reverse the order of these exhibits.

Q Yes, you may.

A Would you pull Exhibit 9 out? Now, Exhibit 9 represents the total test time on both the Patrick and the Sunset Wells. On May 3rd, the Dalport Sunset Well was placed on production and on May 5, a pressure instrument was run in the hole and the well closed in. Simultaneously, a pressure

instrument was also placed in the Patrick Federal Well Number 1.

Q Now, has the Patrick Federal ever been produced?

A Only on periods of tests where Mr. McClellan was attempting to gauge the initial potential of the well.

Q And it had been shut in since its completion, then?

A Yes, sir, except for possibly one or two days in January when they conducted a test for gas connection. The Dalport Sunset Well continued to build and on the 73rd hour, we opened up the Jack McClellan Patrick Well. We also continued to leave the bomb in the Sunset Well. You will note at the end of 189 hours, 193 hours --

MR. HINKLE: 189 or 193?

THE WITNESS: Actually, it's 193 hours, Mr. Hinkle, the Dalport Well was still building. You will also note that after we opened up the Patrick Well, this well was tested at a rate of about three million six hundred feet a day, or equivalent to approximately twelve thousand reservoir barrels per day. The well was flowed for a total time of five days and then shut in. Immediately, within thirty minutes of the shut-in, the bottom hole pressure had gone from a flowing pressure of 457 to 625 pounds.

We continued to build and took a shut-in, and you will notice that we have a deflection in the points on the Patrick Well. And we are attributing this to mechanical

conditions, because we found sand in our element on the Amerada bomb.

Now, I would like to go back to Exhibit 5 as the information shown on Exhibit 9 was then used in the preparation of Exhibit -- excuse me, 6. I'm sorry, Exhibit 6 is the pressure drawdown, reservoir pressure drawdown or limit test on the Jack McClellan Well. You will notice on the right hand side on the graph form that we have three -- that we have two inflection points that we have labeled time barriers, TB's. These are, in our opinion, the time it took the pressure waves to reach the boundary in the Patrick Well.

The sloping between the area is a stabilization period and the two slopes labeled M2 and M3 being so close to the pressures, the same measurement, numerical measurement, tends to believe that we may be looking at parallel boundaries at this point. Now, we cannot prove it. We did not see a third boundary, so we cannot give you any orientation of the shape of the reservoir. This well indicated a flowing permeability using the thickness at the well bore of nine feet to be in the neighborhood of five hundred fifty millidarcies.

The shut-in pressure, as shown on Exhibit 9, supports this type permeability, the rapid buildup, using this information and using the standard and conventional

reservoir methods, we have calculated the time to boundaries and also the distances. We found one calculated boundary to be approximately 1500 feet from the Patrick Well, a second boundary to be 3300 feet and the radius of investigation during our test approximately 3800 feet from the well bore.

Q What is the distance from the Patrick Well to the Sunset Well?

A Thirty-nine hundred feet.

Q Now, with permeability of five millidarcies and the type of test you made, if there were no barrier between them, would it have affected the Sunset Well?

A In view of the radiuses that we calculated, you should have definite pressure drawdown and interference in the Sunset Well.

Q But your pressure test showed no such interference?

A Right. Now, let me clarify it for the sake of the engineers present, that if we use the average thickness of this reservoir, our permeabilities would have been higher. Our radiuses of investigation would have been higher, and, therefore, we should have not only reached the Sunset Well, but gone beyond it if there were no barriers between it.

Q Now, to the left side of Exhibit Number 6, there are a number of figures. What do those indicate?

A The left side are the basic calculations and the

parameters used, which are the generally accepted tests in the reservoir pressure buildup calculations. Now, we'll go to Exhibit 7, which again ties in with the pressures as shown on Exhibit 9, and were the basis, of course, for deriving our calculations. We, after looking at the pressure performance, the geological barriers, selected the particular formula for calculation of boundaries, inasmuch as we did feel multiple boundaries did exist in this reservoir.

There are other forms of the distance radius of investigation for single boundaries or for finite reservoirs or infinite reservoirs. This one we chose for the reason of the boundary conditions. The buildup on the Dalport Sunset Well is presented in an engineering form here in a dimensionless time in order to fit the equations used in the calculations. We found the first boundary to occur at approximately four and a half hours after shut-in, or a calculated distance of 738 feet from the -- 737 feet from the well.

The secondary boundary condition appeared in approximately twenty hours and the calculated distance was 1566 feet. The shape of the buildup curve does not reflect any interference. Had interference with other wells occurred, the buildup curve should curve downward. It is interesting to note that the permeability, using the ten feet in the Dalport

Well, gives the formation characteristic of about 1800 to 3,000 darcies. We use an average thickness of seven feet; this well is flowing with close to three darcies. And consequently, the pressure buildup performance indicated the quality of this formation. Gas-oil ratios are still almost solution gas-oil ratios in this well.

Now, Exhibit 8 pictorially shows the radiuses of the boundaries and investigations of these buildup and draw-down tests. I would like to refer you to the Patrick Well first and point out that had the radius of investigation or the second boundary on the Patrick Well been a true boundary, you would have had a common drainage area with the Dalport drainage pattern, and thus, interference should have slowed up.

The connection we can draw is that the eastern boundary of the Patrick Well has to be the first radius of drainage. We do not know where the western boundary of the Dalport Well is, but we do know that it has to exist between the first boundary on the Patrick and either the first or second boundary on the Dalport. And this is why we showed this broad area. There is no communication between these two wells.

Q Now, the Dalport Sunset Number 1 is located within the established boundaries of the Double L Pool; is that correct?

A Yes, sir.

Q Okay. Now, turning to what has been marked as Exhibit Number 9, would you -- we've already discussed that?

A We have reviewed this; yes, sir.

Q Exhibit 10.

A Yes, sir. Exhibit 10 relates in our opinion very close to the cross section shown on Exhibit 3, realizing that the Sulimar and Double L Queen Pools are similar. We presented these gas analyses on Exhibit 10 to show in capsule form the pertinent data of the analyses. The most significant point is the heating value or the BTU values on a wet basis. You will notice that in both the McClellan Patrick Field Well and the Continental Oil Company Means Well, that the BTU values are less than five hundred, whereas the lowest BTU value of associated gas produced from either the Sulimar or the Double L Field is close to 600, whereas the majority of them range from 800 to 2,000 BTU's.

Q Now, taken alone, would that indicate separation of the pools?

A Not necessarily; no, sir.

Q Does it support your conclusion, however, that there is separation between the Patrick Federal Number 1 and the Sulimar Queen Pool and the Double L Queen Pool?

A It is supporting evidence that the gas produced from both the Patrick Federal and the Means Well are not

connected to the same richness of hydrocarbons that exist in the Sulimar and the Double L Pool.

Q Now, referring to what has been marked as Exhibit Number 11, would you identify that exhibit?

A Yes, sir. Exhibit 11 is a plat of the available core analysis data in the Double L Field, showing you the relationship of permeability to porosity of the formation. Now, the reason we used the least squares method up in the upper portion of the curve was to attempt to get a reasonable measure of the permeability in Mr. McClellan's Patrick Federal Gas Well.

Q And what did you arrive at on the permeability?

A Well, looking at this, that we have 550 millidarcies and the porosity in the well bore is approximately 27 to 28 percent.

Q Now, referring to what has been marked as Exhibit 12, would you identify that?

A Exhibit 12 is a lease plat showing the current locations, completions, and it was included to bring into focus the relationship of all the wells in this report.

Q Are all the wells producing in the area shown on this exhibit, to the best of your knowledge?

A In the fields that are shown; yes, sir, except the completions, those designated as locations, such as the Humble's

locations on the Hess, are in the process of being completed at this time.

Q And has McClellan completed a well since this, too?

A Yes, sir, which is the A-9, which is the location on this map.

Q Now, referring to Exhibit Number 13, would you discuss that exhibit?

A Yes, sir. As the engineers present will realize, much of the calculations on buildup have to be based on relatively accurate fluid analyses, and unfortunately, we did not have any. In our investigations, we reviewed the production of wells in the Double L Field and selected two of Humble's wells to standardize on. We standardized on the DeSmet Number 1 and the Lusk Number 1 as they were the most representative in the reservoir.

The gas-oil ratios that were reported and found were considered representative, and we made a correction to allow for gas loss from the separator to the tank. With this information, we came up with a solution gas-oil ratio in this Queen Double L Field of approximately 183 cubic feet per barrel. The specific gravity of the produced gas ranges anywhere from .93 to 1.4. The weighted average was 1.13. We then attempted to estimate the bubble point, formation volume factors and oil viscosity, and we used empirical data from

reference work, and these are shown. We found that the bubble point of this reservoir was at 640 pounds. It was a saturated reservoir in its initial state. Formation volume factor is very low, 1.1, and the oil reservoir viscosity is 3.3 centipoises.

Q Now, Mr. Viney, what is the present status of the Patrick Federal Number 1?

A The Patrick Federal Number 1 is a shut-in gas well.

Q And is there any gas connection?

A No, sir, there is none available at this time.

However, Gas Pipeline Company has contemplated coming to the area and, as pointed out in the cover letter to Exhibit A, we have made this and placed everyone on the list that interest is available and to come and gather the gas.

Q In your opinion, if this well were produced under the existing gas-oil ratios, could it be produced at all?

A Not economically.

Q On the basis of your experience as a consulting engineer, in your opinion, would a gas line come to this area for that volume of gas?

A I doubt whether they could afford the price of the line.

Q Now, just to summarize your testimony, in your opinion, is the area occupied by the Patrick Federal Number

1, and I should say the area proposed to be included in an undesignated -- in a gas pool, connected in any way to the Sulimar Queen Pool?

A No, sir, it is not.

Q Is it connected in any way to the Double L Queen Pool?

A No, sir.

Q Now, would you review briefly the information on which you base this conclusion?

A Basically, in review, we find that the initial recorded pressures of wells completed in the Double L Field at the time of their completion were higher than the observed pressure that existed in the McClellan Patrick Field Well. We find that the pressure drawdown and interference tests do not indicate any communication with or between the Double L Field and the Patrick Well.

The gas analysis tends to support that the Patrick Well is producing from a dry gas reservoir. And during the five-day test, we recovered no fluid whatsoever, water oil condensate, or anything else. Normally, if there had been any hydrocarbons in liquid form, we should have swept them at the velocity we produced the well. The fourth item which tends to support the pinch out theory on the west side of the Double L Field is the fact that Dalport Oil Corporation was

able to effectively squeeze off the upper member of the Queen pay and effectively reduce the gas-oil ratios. The fifth member that is coming up and showing facts leading to the complete separation is the rather rapid declines in pressures now being observed in some of the wells in the Double L Pool.

In summary, this pretty well presents our case and it is our opinion, based on the evidence that the Patrick Well is not in communication with either the Sulimar or the Double L, and that with the establishment of a new gas pool and gas well allowables, production from the Patrick Federal Well would not dissipate reservoir energy from the existing producing oil pools.

It is the opinion that both the Double L and Sulimar Queen Pools are exhibiting depletion-type producing characteristics and the reservoir pressures can only be maintained by the injection of extraneous fluids. The Applicant respectfully requests that a new gas pool designation be established with each gas well located on a standard unit containing 160 acres, more or less, consisting of a governmental quarter section.

Mr. Kellahin, that completes my testimony.

MR. KELLAHIN: That completes the examination of the witness. At this time, I would like to offer in evidence Exhibits A and B, as consisting of thirteen separate exhibits.

MR. UTZ: Without objection, Exhibit A, consisting of thirteen exhibits, and Exhibit B will be entered into the record.

(Whereupon, Applicant's Exhibits A and B were admitted into evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Viney, I missed your third point when you were summarizing.

A All right. Let me go back.

Q Do you remember it?

A Let me go back. Oh, actually, yes, the squeezing off of the upper member of the Queen Gas pay.

Q No, I've got that as Number Four.

A Then we had the pressure interference tests.

Q Right.

A Then we had the pressures observed in the original wells.

Q That's the first one.

MR. MARKHAM: The gas tests, dry formation.

THE WITNESS: Oh, excuse me. The gas, on the basis of the analysis of the BTU's of the dry gas and actually producing dry gas during the Patrick drawdown tests.

Q (By Mr. Utz) Now, that pretty well covers the separation that you contend between the Double L and the

undesignated Queen gas. How about the Sulimar and the Queen?

A Yes, sir, Mr. Utz. If we go back to Exhibit Number 5 and Exhibit B, as submitted by Mr. Kellahin, the pressures in the wells in the Sulimar Field are now two hundred pounds less than the pressure in the Patrick Well.

Q I don't recall what the pressure was in your Patrick Well.

A Six hundred sixty-nine pounds. The nearest pressure in the Sulimar Field as of last night was four hundred seventy-six pounds.

MR. UTZ: Questions of the witness?

MR. HINKLE: I would like to ask you a few questions.

THE WITNESS: Yes, sir.

CROSS EXAMINATION

BY MR. HINKLE:

Q Referring to your Exhibit Number 1, you show porosity pinch out. Now, this, I assume, was drawn after you made the interference test, was it not?

A No, sir, it was not, Mr. Hinkle. It was drawn first.

Q What did you base it on?

A Observance of the thinning of the pays and the loss of porosity, as observed from the core analysis of wells up-dip.

Q Now, you say that there is no communication between

the Patrick Federal Number 1 and Dalport Sunset Number 1;
that is the conclusion you reached?

A Yes, sir. That is the conclusion.

Q By reason of your interference tests?

A Interference buildup and drawdown tests; yes, sir.

Q Who conducted this test for you?

A This test was conducted by Apex Engineering.

Q Apex Engineering?

A Apex Engineering. And we would like to submit the independent report of Mr. Harry LeGendre, engineer for Apex Engineering. The name is spelled L-e-G-e-n-d-r-e.

(Whereupon, Applicant's Exhibit
C was marked for identification.)

You will note that the figures included in Mr. LeGendre's report are identical to the figures used in our testimony. I would like to point one thing out, Mr. Hinkle, that we did take additional pressures in there, the Lisa A-2 pressures.

Q That are not shown in this report?

A They are shown in this report, and only listed in our testimony as a point and a remark on Exhibit 5.

Q Now, who determined the length of time that this test should be made, when it was shut in, from the time it was shut in until it was completed?

A I did, Mr. Hinkle.

Q You did?

A Yes, sir.

Q Now, let's assume that we have got a gas cap.

A Yes, sir.

Q And you're trying to determine if there is communication between the Dalport Well and the Patrick Number 1.

A Yes, sir.

Q And you're dealing with gas and you're dealing with oil, are you not, in the formation?

A Not in the Dalport.

Q In the one well you're dealing with gas --

A Yes.

Q -- and the other well, you're dealing with oil?

A In the Patrick Federal Well, the fluid was gas. In the Dalport Sunset Well, the fluid was oil and below the gas-oil contact in the Double L Field.

Q Well, now, isn't it true that when you're trying to determine communication where there is a gas cap, that it takes a longer shut-in time, and a longer test than it would otherwise?

A Normally, your pressureways should travel a little faster in the gas cap, so it should take less time.

MR. HINKLE: Mr. Examiner, there is a lot of

technicality about this that I don't understand, and I'd like to have John Carraway, who is a petroleum engineer, ask the witness some questions here.

MR. UTZ: Do you have any objection to that order, George?

MR. HATCH: (Shakes head indicating no.)

MR. UTZ: You may proceed.

CROSS EXAMINATION

BY MR. CARRAWAY:

Q The point I think Mr. Hinkle was getting at is, we have an oil well completed in an oil column and our interpretation is that we have a gas cap in which your Patrick Federal is completed. My question is, on an interference test, how did you take into account the fact that you were going across the gas-oil contact, or that the possibility existed that you were going across the gas-oil contact in those calculations?

A In the calculations, had we gone across the gas-oil contact, or had we gone into the Dalport or the Double L reservoir, we would have seen some pressure interference in our Sunset Well, regardless of your gas-oil contact.

Q Do you have any calculations that you have made that would show the extent of the pressure interference in the oil well, due to production, say, from the gas, or vice versa?

A Only on the basis of radiuses of investigation.
None from the interference.

Q So you have no word from the interference part of the test that would suggest or that would show what the expected pressure drawdown in the oil well, say, was from production from the gas well; is that right?

A No, sir, but let's review the facts and look at the fluid withdrawals, the rates of withdrawals. And, as I pointed out earlier, we used the average thickness at the well bore. Had we used the average thickness in the reservoir, which is approximately five feet, the radius in the McClellan Well and in the Sunset Patrick Well would have been approximately three times as great.

Therefore, the radiuses of investigation of both wells would have been increased. At no time did we run into an interference situation. The crossing of the gas and the oil boundary will not affect materially your pressure performance or interference tests.

Q Well, the radius of investigation that you have mentioned here, that applies only to the drawdown or buildup tests in the wells in which the pressure is being measured; is that right?

A That's right, but remember that bombs were in both wells, and the tests were being conducted simultaneously.

Q Right. But the radius of investigation that you used here is a theoretical value that applies only to the buildup curve and the drawdown curve in the well which is being produced. It does not apply to the interference test in that, in the pressure in the well that's being monitored; is that not true?

A What you're saying, to a point, is, you're saying we did not see all the boundaries; this is what you're bringing out. This is the point you're saying. Now, let me point out one other point that kind of brings home the fact that I think your well, or the Double L Field now has a gas cap and that gas cap is expanding very severely. The pressures on this Grace Well, these casing head pressures on these wells are now down to four hundred pounds.

This is, again, supporting evidence that if these were in communication and this Grace Well and these Dalport Wells, Rob Wells, were high, they should be exhibiting the same pressures of 625 to 650 pounds that you're seeing on the Patrick Well. If I contend, we have a boundary here, you're bringing up, and you say, "Well, how do you know that you have not, and still in communication, are not in communication with this gas cap?" This is what you're saying.

Q That's true, but I'm primarily interested in the area down there between the gas well and the Sunset, the area which your test would investigate.

A The only way I can tell you that without conclusive evidence that if the boundary existed, you could conduct that test from here on and never see any pressure, in effect.

Q If the boundary existed; yes.

A Yes. And in view of the permeabilities observed, the radius of investigations are crossing each other if they were in communication. You can take your calculations and cut my thicknesses in half and run these out. You can use your own formulas. You can use Humble's formulas and you will find that these will be within five percent of yours.

Q Well, our formulas are the same as yours, I believe.

A Yes, they are.

Q Okay. Well, the point, then, I guess, I'd like to have established at this point, then, is, the calculations that you have gone through here apply only to the drawdown test and insofar as the interference that you're talking about is concerned, you have no calculations to show that; is that true?

A We have no interference calculations. In effect, we couldn't see any information to make an interference test. The actual exhibits shown on 9, here we have gone seven days. And we have seen no reflections. Now, I don't know how you're going to make interference tests unless you have pressure reflections in the wells being tested.

Q Well, on an interference test, you can make a

calculation, though, that would predict what the pressure drop would be in the well that you're monitoring, due to protection from the first well; is that not true?

A This is correct.

Q This is a calculation I would like to see.

A All right. Then just apply your average thickness to the formulas in the report and you'll find that your radiuses of investigation go way beyond the eastern boundaries of the -- in fact, of your Hess lease.

Q Again, I would like to point out, though, that the radius of investigation applies only to the drawdown test. It is not even a consideration in an interference test.

A Yes, it is in this particular case.

MR. HINKLE: You're arguing. Ask him questions.

MR. CARRAWAY: Okay.

Q (By Mr. Carraway) As far as the boundaries that you show on the drawdown curve, the first one, I believe was, you indicated to me, that the western --

A Fifteen hundred and some feet from the Patrick Well.

Q Okay. On the Patrick Well, the first boundary that we show would be the western boundary of the area that you have got hypothesized between the two wells?

A Yes, sir.

Q The Number 1 Lisa Well, the one, I believe it's also a gas well, the four-point test was turned in on that well.

A Yes, sir.

Q And it's substantially tighter, apparently, than the Patrick Federal Well?

A Based on the tests filed, this you would have to conclude.

Q I wonder if it's not possible that the boundary that you see there may not be the Lisa Well or the tighter conditions around the Lisa Well, rather than the barrier that you show between the two wells?

A Obviously, as you know, you have no way to direct the distance or the direction of a boundary.

Q Well, I would like to suggest that on these draw-down curves, since they are subject to so much interpretation, a question that you can hypothesize a barrier between the two wells on the basis of these particular drawdown curves.

MR. KELLAHIN: If the Commission please, the Examiner is testifying. If he wants to testify, let's get him on the stand.

MR. HINKLE: We'll put him on the stand in a minute.

MR. UTZ: I think that's correct. He has the liberty to ask questions, but he cannot testify yet.

MR. CARRAWAY: Okay.

Q (By Mr. Carraway) On the back pressure test for the Lisa B Well, the calculated bottom hole pressure on

that test was 701 PSI; is that correct?

A This is what I read.

Q The pressure that we are measuring now in the Patrick Federal Well is --

A I'm a little bit lost in here. 669 pounds.

Q 669? Now, there has been no production from the gas wells, has there?

A Not materially, other than what, during this test and during special gas tests, that Mr. McClellan has conducted.

Q Why is the pressure drop from 701 to six whatever?

A May I -- Mr. Examiner, I don't know why the pressure dropped. Frankly, calculations -- these are bottom hole calculations. We do not know the basis of the man's calculations and these are within the realm of normal calculable errors. Therefore, I don't think you can conclude that there is or has been a pressure drop from the figures presented on the gas well test filed.

Q The Commission stipulates that a back pressure test will use a dead weight tester at the surface, which has good accuracy, does it not?

A Yes. I do not know how these tests were conducted. Therefore, I cannot verify or testify as to their accuracy.

Q But I think that we can assume a dead weight tester was employed?

A No, sir, I don't think you can make that assumption. You don't know.

Q But the Commission does require that it be employed, does it not?

A I believe the Commission requests that one be used.

MR. UTZ: I believe it's required.

THE WITNESS: Well, it may be, but whether it was used or not, I can't answer in this. I did not test these wells.

Q (By Mr. Carraway) You did state, though, that this well produced no fluid at all during the test you did run?

A The Patrick Well did not produce any fluids.

Q It's also noted on the back pressure tests that no fluid was produced on the Lisa Well. Therefore, I would assume that the pressure -- I'll leave that point at that.

MR. CARRAWAY: I believe that's all I have.

MR. HINKLE: Just one other question I want to ask.

CROSS EXAMINATION

BY MR. HINKLE:

Q I believe you stated in your testimony that there were people or companies interested in taking this gas; is that correct?

A Yes, sir, this is correct.

Q What is the quality of this gas that you can

produce from these wells?

A The quality of the gas, Mr. Hinkle, is shown on Exhibit 10, with the exception that we have not included the complete component, monthly percent of the hydrocarbons. But these are available. We have them on file if you desire to look at it. However, to answer the question, the dry gas wells, namely the Patrick and the Means, Continental Means, both have high nitrogen content. Sixty-three percent in one case; sixty-eight in the other. The gas cap wells in the Double L had relatively high nitrogen in the range of fifty-one to fifty-two percent.

The gas analysis taken on the Sunset while we were conducting this pressure drawdown test measured only nine to ten percent nitrogen, very high BTU content, very rich. There does not appear to be too good a correlation between the hydrogen content in the oil reservoirs except that you can relate the percentage of the nitrogen content with the position of the well on the structure. There is some relation.

Now, it's not a good correlation, but it's evident. Now, the relationship of -- coming to the gas content, the nitrogen content of the wells that were produced in the Double L Field along the gas cap, and comparing it directly with the gas produced from the Patrick Well, you had to have a terrific change of composition to say that they were produc-

ed: or being produced from the same reservoir.

Q Well, the wells that you referred to as the gas cap wells and the Double L do have a relatively high percentage of nitrogen, do they not?

A Yes, sir, but not any higher than wells low down on the structure. If you will look at Mr. McClellan's -- we don't have the Lisa Federal, but if you'll look at the Dalport Rob, it was high. If you look at the Marion Federal, it was a structurally low well in the Double L Field. It had forty-one percent nitrogen. Yet you come a well higher than the Marion Federal, the Dalport Sunset, it had only nine to ten percent.

This area of the reservoir is almost a virgin reservoir at this time in the oil portion and, of course, with time, why, the pressures will --

Q Well, in a field of this type and character, a pool of this type, do you usually find a high percentage of nitrogen gas?

A Normally not. I mean, the Queen Sands are one of these few reservoirs that do contain nitrogen. I mean, you will find this on other Queen Sands, too.

Q Wouldn't it seem to follow, then, that the fact that you've got nitrogen in the Patrick Well and the Lisa

Number 1 and so forth, a high content, and in a -- what you call the gas cap wells of the Double L, would that in of itself indicate there is some communication?

A No, sir; I don't believe so. I think probably during the eons past, there may have been communication, but with geological deposition since that time, why, these areas have been separated. And since the component analysis of the gas was the same during the deposition, you would have to have relatively same nitrogen or components in this gas and all reservoirs in this area.

MR. HINKLE: That's all of the cross examination.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Viney, referring to Exhibit Number 10 --

A Yes.

Q -- on specific gravity.

A Yes, sir.

Q The Double L Queen. Look at that --

A Oh, yes.

Q I understand the first one. The next three, I don't.

A Well, I don't either. Mr. Utz, these are errors. Let me give you the correct readings, if you will, please. Marion Federal is correct at .976. The Sunset Federal --

MR. HINKLE: 976?

THE WITNESS: Yes, sir. 0.976 is correct. The Dalport Sunset Federal Number 1, 1.285. Rob Number 1, 1.096. Rob Number 2, 0.931, whereas they have got it correct; that's right. No, it's not correct there, but that's the correct figure. The analysis is up here for support, if you wish to look at them.

Gravities, you will find, will be similar, but your hydrocarbon composition of the gases are not.

Q (By Mr. Utz) Mr. Viney, I don't know whether you mentioned the quality of the oil between the Sulimar and the Double L.

A Mr. Utz, I did not. Based on observed gravities, very, very similar. We did not run any angular distillation or similar type analysis of the crude oil. We just based it on observed gravities as measured in the field and corrected for temperature.

Q Both sweet?

A Very sweet. It was only in one case that we found any CO₂, a very minute amount of CO₂ in one of the analyses. They are sweet.

Q Did you get any liquids at all out of your Patrick Well?

A No, sir; none.

Q Absolutely dry?

A Absolutely dry, and during the tests, we had a buildup as pointed out, of a little scale on our plats, while measuring, to measure the gas. And the analysis of this scale proved to be ninety-five percent salt, sodium chloride.

MR. UTZ: Other questions?

CROSS EXAMINATION

BY MR. STAMMETT:

Q Mr. Viney, I believe that you testified or indicated that some gas-oil ratios were going up in the Double L Queen Pool; is that correct?

A Yes, sir.

Q And the essence of your testimony was that this was from a small expanding gas cap in the immediate area of the wells, rather than a major encroachment from a larger gas cap to the west?

A Yes, sir. Actually, in the squeezing off of this Rob Number 1, they eliminated this gas. And I think as you go to the east, you'll find the wells that are along the eastern boundary, the Spurck Number 8, and going into the Amco, you'll find that these ratios are picking up.

Q So all through the northern part of the field?

A Yes, sir.

Q The older part?

A Well, not necessarily -- yes, in the older part if you want -- but if you will notice the structural conditions, you're closer to your gas-oil contact on your structural conditions in the north end of the field than you are in the south end, so this would be a normal expected condition.

Q I'm not sure about that. I'll think about that a minute. You've drawn a barrier which essentially cuts off the production at the center line of Section 25. You show that there is not likely going to be any oil produced in the Double L in the west half of Section 25.

A Let me look at my exhibit, please, (indicating.)

Q Twenty-five; 14-29.

A We have advised Mr. McClellan that if he were to drill, to stay out of that indicated boundary area.

Q What have you based that line on in this area?

A In Section 25?

Q Yes.

A I appreciate your question. This is a projection of the trend that we found through the pinch out calculations and the tightness that was an oil porosity, we found in this Spurck Number 5; whether it goes straight to the 25 on the section or whether it curves, I can't tell you exactly; no, sir.

Q In other words, there could be some postulation, some possibility?

A There is some postulation; yes, sir, up on that north end.

Q Well, now, bearing in mind that oil possibly could be developed in the southwest quarter of Section 25, are you aware that there are two wells in the southwest quarter of Section 26, 14-29, which had gas shows in the Queen?

A Yes, sir. And this was similar to the well we pointed out on the cross section, top left-hand corner, which did have oil and gas shows and had a pressure of some 770 pounds.

Q Have you testified that there would be a barrier -- but that there is a barrier between those gas wells and any possible oil production in Section 25?

A Which gas wells?

Q Well, I take it back, the two gas wells with gas shows in Section 26.

A Between what wells?

Q The oil wells that we have postulated in the southwest quarter of Section 25?

A These non-existent gas wells and oil wells?

Q What I was getting at is, the testimony you've given up to this point seems pretty clear that you are con-

vinced that in this area which you have proposed as a new gas pool, that there is -- this is not a gas cap, but you have not extended this testimony into the area to the north.

A No, sir, I haven't, and it would probably take months and weeks to run a pressure drawdown test to determine if the boundaries would go that far.

Q The boundaries of the pool that you propose?

A The boundaries of the gas pool. And you would have to complete the darn gas well before you may find a boundary. I think this question here, again, let's go back to your original premise that was made initially. I think we have a series of Queen reservoirs in this area. Let's take the top of the Queen and say that regional dip being this situation, I think you've got a reservoir here, (indicating), a reservoir here, and then as we extend back in the plains up here, we may find another reservoir sitting in this area, another one here, none of them communicating with each other.

And therefore, if you find a well up in 26, yes, it may be connected with something else, but at this point, I couldn't tell you that it is.

Q That's what I was getting at.

A That's right. And I don't think you can, or I don't think anybody else can. I can't. If you can, why, I would like to know. No. I mean, I understand your question

and it's a good one, but I can't tell you that there is connection or there is not, but during the test, we did not produce the gas well long enough to investigate conditions much beyond four thousand feet from the well bore.

Now, as the Humble witness pointed out, I don't know which way this boundary is going to go. It's going to go out there. We found a couple of boundaries. Now, if they have to ask me where is that boundary and what direction from the well, I can't really tell you. The only thing we can do is by deduction, as we pointed out, the two possibilities that it did not -- there is something between the two wells tested. Now, where it is, I don't know, in the true sense of being able to step it out and say, "Here it is," and walk across the dry spot and say, "Now, you're back in the oil."

Q Is there anybody going to testify in this case as to the gas transportation? Will there be a witness who will tell us about who the gas transporters are?

A May I check with counsel?

(Whereupon, a discussion was had off the record.)

MR. MEDLEY: Mr. Examiner, I'm Reggie Medley with Natural Gas Pipeline, and if you would like, I would make a statement.

MR. STAMMETT: Let me tell you what my questions are, and then whoever could best answer them, we would be very happy to.

MR. UTZ: You weren't going to go on the witness stand. You were just going to make a closing statement?

MR. MEDLEY: That, I would prefer to do, and these talks have not been made with certain people and with others, and I would like it that way.

MR. STAMMETT: Let me ask my questions.

Q (By Mr. Stammatt) I presume that there is more than one gas transporter interested in this gas. The one that you're referring to now who would like to take the gas from Mr. McClellan's gas wells, is he also interested in taking the casing head gas from these two pools?

A It is my understanding that this is the consideration.

Q Do you have any knowledge that any restriction on the volume of takes from this area would be placed by this transporter?

A I would have to say that the volumes would be in accordance with the regulations of the applicable producing rules, and this is all I could make at this time.

Q On your two-year knowledge, have any contracts been submitted to operators in this area for actual sale of casing

head gas?

A To my knowledge, no. I have heard that there have been discussions, but I do not know that any contracts, as far as I'm concerned, have been submitted. You asked the question to me? I can't answer that.

Q In other words, to your knowledge, they have not, but also to your knowledge, they may have been?

A They may have been; yes, sir.

Q Okay. Apparently, you don't have enough information available to say whether or not the pipeline who is not a casing head gas transporter may be restricted in the volume which he could take from this area?

A May I answer your question with a question? When you're asking about restrictive volumes, what are you thinking of in terms of restrictions?

Q A pipeline which would be limited in the amount of this high nitrogen gas. Say they have a single place to put this high nitrogen gas and after they take so much, they have diluted their gas to the point where it drops below a thousand BTU's, and they cannot take any more?

A I would say then that, of course, every pipeline would have to watch their mixing to maintain their quality in terms of gas delivered and if that is going to be a restriction, you would have to say yes, there would be some

restriction. I, however, do not think that the restriction would be applicable to the amount of gas available from this area, both from the gas -- flow of gas and the casing head gas, so I do not think there would be restrictions in that sense.

MR. UTZ: That ought to answer your question.

MR. STAMMETT: That's all.

MR. UTZ: Are there any other questions?

MR. RAMEY: I'll ask one.

CROSS EXAMINATION

BY MR. RAMEY:

Q Mr. Viney, during your interference test where -- I assume the oil wells up in the Double L were producing, weren't they?

A Yes, sir. They were. The nearest well on production at that time, Mr. Ramey, during our test was the Sue Number 2.

Q The Sue Number 1 and the Marion Federal and McClellan's were shut in at that time?

A They were shut in. In other words, we tried to eliminate any possibility of interference within the oil reservoir that could distort the buildup test in the Dalport Sunset Well.

MR. UTZ: Mr. Viney, since we got on this gas

question, the gas in the Sulimar and Double L at this time has been cleared?

THE WITNESS: Yes, sir. It is being cleared.

MR. UTZ: Do you know that if this is being defined as a dry gas pool, then you get a purchaser in there, that they will take this flare gas?

THE WITNESS: Yes, sir. This is the understanding, that there will be gathering facilities installed for the picking up of the producing oil well gas.

MR. UTZ: I presume that would go at a rate -- however they can -- well, consistent with building gathering lines?

THE WITNESS: Yes, sir. And, of course, right away, in gathering, and the indications are with approval and the establishment of this gas pool, action will be taken as immediately as possible.

MR. UTZ: Other questions? You may be excused.

(Witness excused.)

MR. KELLAHIN: At this time, I would like to offer in evidence Exhibit C, which was the test information, the pressure test information, the booklet.

MR. UTZ: Exhibit C will be entered into the record in this case.

(Whereupon, Exhibit C was admitted into evidence.)

MR. HINKLE: Is that all of yours?

MR. KELLAHIN: That's all we had, Mr. Utz.

MR. UTZ: You may proceed.

MR. HINKLE: Mr. Examiner, we have two witnesses
we would like to have sworn.

(Witnesses sworn.)

(Whereupon Exhibits 1, 2,
and 3 were marked for
identification.)

JON CHAMPENY,

called as a witness, having been first duly sworn, was
examined and testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, your residence, and by whom
you are employed.

A Jon Champeny, Humble Oil and Refining Company,
Hobbs, New Mexico.

Q Are you a graduate geologist?

A Yes.

Q Have you previously testified before the Commission?

A No, I haven't.

Q State briefly your educational background and your
experience as a geologist.

A I have a Bachelor of Arts degree in Geology from the University of California at Santa Barbara and a Master of Arts degree in Geology from UCLA. I've worked for Humble as a geologist for nine years. I'm presently the District Production Geologist in Hobbs and have been there for a year and a half.

Q Are you familiar with Humble's operations in New Mexico?

A Yes.

Q Have you made a study of the Double L Queen Pool --

A Yes.

Q -- and the surrounding area?

A Yes, sir.

Q Have you prepared, or has there been prepared under your direction certain exhibits for introduction in this case?

A Yes, sir.

Q Refer to Exhibit Number 1 and explain what this is and what it shows.

A Exhibit Number 1 is a structure map very similar to the one that was presented by Mr. Viney. It's on the top of the Double L Queen Pool pay. It also shows the ownership in the Double L Queen Pool area. And as the legend states, it shows wells that have tested gas cap gas. It shows wells

that have GOR's ranging from 1600 to 70,000. It also shows wells completed in the pool that have GOR's averaging 350. Also I show on this map areas where this Queen interval is non-productive of oil and gas.

Q Where dry holes have been drilled?

A That's correct.

Q Now, what is Humble's interest in this area?

A Humble has four completions in the Double L Pool. They are all in the oil leg of the Double L Pool. We are currently completing three other wells on the DeSmet Federal lease and the Hess Federal lease. We are completing two wells and we are moving in to drill the Number 4 Florence Lusk to the north.

Q What is the broken line that you show there up toward the center of the plat? What does that indicate?

A The broken line is an effective gas-oil contact. It's exactly the same elevation that Mr. Viney shows. We agree there that there is a gas-oil contact in the reservoir.

Q Now, from all of the information available and what you have on this plat, Exhibit Number 1, what conclusion do you draw from this exhibit?

A The conclusion that I draw from this map is that we have a logical geologic sequence here of a reservoir that's

dipping about a half a degree to the east. It's a regular dip as evidenced by the regular spacing of the contour lines on the map and that the updip wells are gas wells. The wells that are in proximity to the gas-oil contact are wells that have high GOR's and the wells downdip are wells that have low GOR's. This is the normal case that you normally see, is an associated gas reservoir.

Q Do you have any further comments with respect to this exhibit?

A I might just mention that the evidence of a geological barrier running to the south from geologic evidence from the Number 5 Spurck State cannot be established from any geologic evidence. As you can see, I have an area that is shown to be non-productive around the Number 5 Spurck State, and this same evidence that Mr. Viney used for a boundary can be also interpreted as being localized, tight areas in this Queen Sand interval.

Q And not extending the full length of the pool or area?

A Yes, sir.

Q Refer to Exhibit Number 2 and explain what this is and what it shows.

A Exhibit Number 2 is a cross section. There is an index map on the bottom of it. It's very similar to -- this

cross section runs from the Dalport Number 1 Rob through Humble's Lusk lease over to Dalport's Amco Federal lease and to McClellan's Lisa Federal 1. The purpose of this cross section is to show that this interval is easily correlatable. The interval is about the same thickness all the way across this area from updip to downdip, and the dashed line above the Queen pay is a correlation point that also shows that it is a very easy correlation to make, that this interval is probably in communication all the way across the reservoir.

Q Do the logs of any of the wells shown on this cross section indicate a barrier of any kind like it was testified to by Mr. Viney?

A No, they do not.

Q Do they show any evidence of any faulty conditions?

A The regularity of the dip is such that there is no evidence for faulting in the area.

Q It seems to be normal?

A Right.

Q This shows a continuity throughout from the gas wells through all the producing oil wells in the pool?

A This is true. This goes --

Q Through the cross section?

A This particular cross section only goes from a high GOR well through the wells that are downdip from it.

Q Okay. Now refer to the next exhibit, Number 3, and explain that.

A Exhibit Number 3 is a cross section from McClellan's Lisa Federal 1-B through Dalport's Sunset State 1 to Humble's DeSmet Federal 1. Again, the cross section shows that the interval is easily correlatable from well to well. All correlation points are shown on the cross section and that there is no evidence geologically of a boundary between the gas wells, between the Lisa 1-B gas well and the oil wells in the Double L Pool.

Q Do you have any further comments with respect to this exhibit, or any of the others?

A No.

MR. HINKLE: That's all we have of this witness.

MR. UTZ: Any questions of the witness?

While we're waiting, I've got a question. Now, referring to your last exhibit, Number 3.

THE WITNESS: Yes, sir.

MR. UTZ: You show the Sunset 1 and the DeSmet 1 with the Double L Queen pay.

THE WITNESS: Yes, sir.

MR. UTZ: Now, the McClellan Lisa Federal 1-B shows a gas pay. Now, is the pay shown on the two right-hand wells correlatable with the pays shown on the McClellan

Lisa?

THE WITNESS: In my opinion, it's the same interval.

MR. UTZ: It is the same interval?

THE WITNESS: Yes, sir.

MR. UTZ: Same interval as the Queen?

THE WITNESS: Yes, sir.

MR. UTZ: All right. Other questions?

CROSS EXAMINATION

BY MR. KELLAHIN:

Q I believe you testified that there was in Section 36 on the Number 5, between there and the Number 3, a tight zone; is that correct?

A I show on the structure map an area that you can call tight. I call it area that is not productive of oil or gas.

Q Well, there is nothing to dispute the fact that there could be other areas on to the south of a similar character, is there?

A There are no wells that have ever shown this.

Q No wells?

A No.

Q Then there are no wells drilled. That's the reason no wells show it; isn't that correct?

A There is no evidence; yes, sir.

Q So it would not disprove the existence of any kind of a barrier between the McClellan Well and the Sunset Dalport Number 1?

A There have not been any wells that have proven that the barrier does go to the south. The only place we know it exists is in the Number 5 Spurck State.

Q And there is no evidence to prove that it does not, either, is there?

A I have none.

MR. KELLAHIN: Thank you. May Mr. Viney ask a question?

MR. UTZ: We allowed Humble to do that. Just so you don't testify.

CROSS EXAMINATION

BY MR. VINEY:

Q You stated that the interval in the McClellan Well and the interval shown on your Dalport Wells were the same interval; is that correct?

A Yes, sir.

Q Could you not also show that this same interval appears on dry holes in this area?

A Yes, sir. The gross overall, between intervals,

as you testified, covers the whole area. And there are areas where there is good sand, areas where there is so-called red sand.

Q Is it not then possible that while we may be able to correlate the intervals, that we are not necessarily correlating continuous depositional characteristics?

A The evidence that we have in looking at the production of all the wells in the area and the geologic evidence together makes me have the opinion that this is all one reservoir that is in communication with -- that there is communication in the whole area, as shown on my map.

Q Let me restate -- I don't think you answered my question. Is it not possible that you could correlate these intervals from well to well across this broad area and still not be correlating continuous reservoir beds?

A It is possible that the so-called gray sand or good sand is in small little lenticular beds that is not communicated. We have no evidence to show that this is not the case.

Q In your testimony, then, you have nothing to show that continuity does not or does exist from the McClellan Well to the Sunset Dalport Well?

A I have evidence. I believe that the evidence

shows that there is continuity and there is nothing between the wells to show that there is not continuity.

Q Is there any evidence to show there is not continuity?

A There is none.

Q In earlier testimony, it was pointed out that the Queens section as correlated in the Double L Field was also correlative in the Continental Means Well. Is this not the same interval that is being mapped and presented on your Exhibits 2 and 3?

A That's correct. I have no quarrel with that at all. I believe that well is in a separate reservoir as this Chase 1 Martha Well, which is not completed, but has tested some gas, is downdip from the Double L oil rig.

Q Is there not the possibility that this same situation could exist between the Dalport and the McClellan Well?

A It's possible.

MR. VINEY: Thank you.

MR. UTZ: You are a geologist, are you?

THE WITNESS: Yes, sir.

MR. UTZ: Will the engineering witness go into pressures and so forth?

THE WITNESS: Yes, sir. He'll handle all that.

MR. UTZ: Other questions? You may be excused.

(Witness excused.)

MR. HINKLE: I'd like to offer in evidence Exhibits 1, 2, and 3.

MR. UTZ: Without objection, Exhibits 1 through 3 will be entered into the record in this case.

(Whereupon, Exhibits 1 through 3 were admitted into evidence.)

MR. HINKLE: We have Mr. Carraway I would like to put on.

MR. UTZ: You may proceed.

W. J. CARRAWAY,

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, your residence, and by whom you are employed.

A John Carraway, Hobbs, New Mexico, and Humble Oil and Refining Company.

Q Have you previously testified before the Commission?

A Yes, I have.

Q And your qualifications as a petroleum engineer are a matter of record with the Commission?

A Yes, they are.

Q Are the qualifications satisfactory?

MR. UTZ: Yes, they are.

Q (By Mr. Hinkle) Have you made a study of the Double L Queen Pool and the surrounding area?

A Yes, I have.

Q Have you prepared, or has there been prepared under your direction certain exhibits for introduction in this case?

A Yes, there has.

Q First, you've heard the testimony of Mr. Viney this afternoon in this case?

A Yes.

Q Would you like to comment on some of his exhibits and his testimony, in particular with reference to the interference tests that were made?

A Yes, I would. I would like to address myself very briefly to the five points that Mr. Viney brought out in his summary. Mr. Viney's first point was that the reservoir pressure in the Double L was apparently higher than that measured in his gas wells. I think we should keep in mind that the 743 pound initial pressure, which was taken in the Double L, is a drill stem test pressure that was taken some time ago, and that Mr. Viney himself has explained away a difference of approximately thirty pounds between the dead weight test pressure on his gas well and the current pressure in his gas well as a difference attributable to instrument accuracy.

I feel that the difference between 743, the pressure that he has measured, that we measured, or that Dalport measured in the Number 2 Spurck, that difference and, between that and the 701 PSI pressure initially turned in for the Lisa B-1, I think that they can be attributed to this accuracy also. His second point, on the pressure data, the build-up tests, the drawdown tests, and interference tests, these are all fairly sophisticated calculations, and I, of course, have had no time to verify them on my own.

However, I think by his own admission, the drawdown test data and the interpretation of boundary effects is a matter of interpretation and strictly on the basis of those tests, they do not conclusively demonstrate a boundary between the gas well and the oil well. There is a technique of calculation in which the pressure in the oil well can be calculated. The pressure drop in the oil well can be calculated, which would result from production from the gas well. This is a well-known calculation. However, it would be difficult to apply in this case because of the fact that we are looking at the possibility of a gas-oil contact. And it's difficult to apply this equation in that circumstance. But Mr. Viney has not made any calculations or submitted any calculations which would show the kind of pressure drop which he would expect to find in the oil well as a result of

production in the gas well.

On my own, I've assumed some rates which are higher than were actually produced from the gas well, and calculated a pressure drop in the oil well due to production from the gas well. And I found in my calculations by assuming gas all the way between the two, recognizing that this was not the case, that it would take something on the order of ten days to produce a one PSI drawdown in the oil well due to production of approximately six million cubic feet a day from the gas well.

So I submit this only to show that it can take more than only seven days to give the kind of pressure interference that we are talking about between these two wells, which are almost four thousand feet apart. This third point, on the analyses of the gas in the Double L oil wells and the gas produced from the two gas wells, again, by his own admission, this is not conclusive evidence of separation.

But I would like to point out that on the two Dalport Wells, Number 1 and Number 2 Rob, which we have the BTU content, 1376 on the Number 1 Rob and 740 on the Number 2 Rob, these are substantial differences just on these two wells. On the last test proration schedule, the gas-oil ratios were turned in as almost alike on these two wells, and I have a copy of that schedule, I believe, (indicating),

wherein the gas-oil ratio on the Number 1 Rob was 69,574 and on the Number 2 Rob was 61,304, almost very nearly the same. And I merely point out that with these kinds of differences in BTU content between two wells with very similar gas-oil ratios, the difference between 740 BTU's and 660 -- what is this, 491 -- on the Patrick Number 1, to me, is not conclusive evidence at all of separation.

In fact, I would almost attribute that to a normal scatter of points. The number four point that was made was that Dalport had been able to squeeze off the gas in their Number 1 Rob. Again, this, I don't feel, is conclusive at all to show separation with the dense interval that does occur within the Queens section. And if the contact did actually cross this well within the dense section, it's possible that you could squeeze it off and complete below the contact in the lower porosity section.

In Number 5, Point Number 5, Mr. Viney pointed to the rapid pressure declines in the Double L Pool with production. This is something that Humble has noted, and I think that we are ready to admit that at least up in the northern area of the pool, where the withdrawals have been great, we have not seen a great deal of pressure support, but our concern at this hearing is that this permeability barrier, which Mr. Viney has pointed out, we don't believe we can say at this point exists down in the southern area of the pool with which

we are concerned now. We are very much concerned that the two gas wells are completed and are in the gas cap down in the southern part of the field, and we don't believe the data has been presented which conclusively proves that this is not true.

On the other hand, we do feel it is significant that the pressure in the Patrick Federal Number 1 had decreased from 701 PSI at the time the well was completed and which was turned in from the four-point back pressure test, down to 669 PSI at this point, again, realizing that the majority of the production from the Double L Pool has occurred up in the northern part of the pool, which may be over two miles away, and that only recently has development in the Double L Pool come down into the area that we are concerned with in this hearing.

This drop of 32 pounds in a shut-in gas well, I believe, is significant and does indicate that communication does probably exist between the oil column and the gas cap in the Patrick Federal Number 1.

MR. UTZ: Your thirty-two pounds you're talking about is the difference between 701 and 669?

THE WITNESS: Yes, sir, it is.

MR. UTZ: You're assuming that the 701 is correct on the four-point test submitted?

THE WITNESS: Yes, sir. At best, I can only assume that this pressure was taken with the dead pressure gauge. There was no fluid produced on the test, and I think the best assumption is that the bottom hole pressure was at least 701. They measured a surface pressure of 668 pounds at that time, which, again, is higher than the 669 we're looking at now, even on bottom hole. Those are all the comments I have on that.

Q (By Mr. Hinkle) What are your conclusions, then, notwithstanding the testimony of Mr. Viney with respect to this being or not being a gas cap barrier?

A My conclusion is that we have no conclusive evidence at this time to prove separation between the gas wells and the oil column, and the best thing for us to do at this time is to assume that they are in communication until such time as development down to the south proves that they are apart. I have calculations which I will submit here in a few minutes which do indicate that we have a great deal to lose if we make the wrong decision at this point with regard to the gas wells.

(Whereupon, Exhibit 4 was marked for identification.)

Q Now, refer to Exhibit Number 4 and explain what that is and what it shows.

A Exhibit Number 4 is a calculation of the volumetric gas equivalent of a top allowable oil well producing at the

dissolved gas-oil ratio. My dissolved gas-oil ratio is based on an average of the potential GOR's which were turned in on the oil wells, and I have excluded those wells which are noticeably high ratio and circled in red on this map; this is somewhat different from the GOR that Mr. Viney turned in, and I have no evidence to show which one is right or wrong.

But we have no fluid analysis, and I've taken the average potentials which were submitted as the best estimate I have of the dissolved GOR. But I have calculated on this page that a gas well producing at only twenty-three MCF a day at the low pressures that we are talking about in this reservoir will void the reservoir the same amount as a top allowable oil well producing at dissolved GOR. This was calculated at initial conditions in the reservoir, the highest possible pressure that I could find to calculate it on.

And as the pressure in the oil drops down, then, of course, this pressure will also become smaller. Eighteen out of the twenty-four wells which are currently completed in the Double L Pool are producing with ratios at or around this 330 cubic feet per barrel. So that I think this calculation is representative of the voidage that is going on in the oil rim.

And if we were to assign gas allowables to these gas wells on the order of -- I don't know what Mr. McClellan or Mr. Viney is looking at, but I'm assuming something on the order of a million a day or greater -- then I think it's rather obvious that the oil would migrate into the gas cap and that ultimate recovery, both primary and secondary, from the oil rim would be materially decreased due to wetting the gas cap.

(Whereupon, Exhibit 5 was marked for identification.)

Q Now, refer to Exhibit 5 and explain that to the Commissioner.

A On Exhibit Number 5, I've attempted to relate the value of the gas to the value of the oil in the Double L area. I've calculated the value of an acre foot of oil based on a thirty percent recovery, both primary and secondary. The value of an acre foot of oil turned out to be 1100 per acre foot. On the gas, I calculated that the gas is worth approximately twenty-two dollars per acre foot, and I base this on a seven cents per MCF gas price, which would be the hydrocarbon value of a sixty percent nitrogen gas.

Again, I have no knowledge of any gas contracts in the area, but I believe this would be representative for the purpose I'm trying to show here, that the oil value is substantially greater than the gas. We are looking at a

ratio of the two as something on the order of fifty. In my opinion, it would be an economic waste to create a condition which would provide for the decreased recovery of this oil in order to provide for the early recovery of this gas.

(Whereupon, Exhibit 6 was marked for identification.)

Q Now, refer to Exhibit 6 and explain that.

A Humble is hoping that a separate reservoir will not be created at this time for the proposed gas wells, and that instead, they will be assigned to the Double L Pool as associated gas wells until such time as the permeability barrier which is hypothesized at this time can be definitely proven or disproven. These proposed rules will provide the following points: Forty-acre spacing for oil wells, 160-acre spacing for gas wells, which is the state-wide requirement. We also propose that a gas well be defined as a well producing in excess of a hundred thousand cubic feet per barrel. We propose a two thousand to one personality GOR on the oil wells and the fifth point is, we feel that the allowable gas production should be based on the oil zone with allowables using a formula similar to that adopted for the Bluit San Andres associated pool in the lower Todd-San Andres Pool.

Q Now, do you know the orders of the Commission that provide for those rules?

A Yes. The Todd rule is Order Number R-1670-G, and the Bluit rule is F-1670-I. This formula is designed to prevent the movement of a gas-oil contact in an associated reservoir by equating the withdrawals above the contact to the withdrawals below the contact. I have also tabulated on this sheet a set of fluid parameters to be employed in this equation. Again, Humble has not taken any fluid analyses on this reservoir oil and these numbers are based on what we feel is a representative crude sample on another reservoir.

If any of the other operators in the pool have better numbers which they would care to present, then we would be happy to see them present it and substitute it for them.

Humble proposes a twenty-four hour shut-in and a pressure of 730 feet sub-sea to give the pressures which would be used in calculating the formula. Humble's final proposal is that these rules be made temporary for a period of one year, at which time the reservoir should be sufficiently developed, to finally decide on whether we want to adopt them personally or not.

Q In your opinion, would the adoption of the rules that you have recommended be in the interest of conservation and prevention of waste?

A I believe they would.

Q And also tend to protect correlative rights in this one-year period?

A I believe they would.

MR. HINKLE: That's all. I would like to offer in evidence Exhibits 4, 5, and 6.

MR. UTZ: Exhibits 4, 5, and 6 will be entered into the record in this case.

(Whereupon, Exhibits 4, 5, and 6 were admitted into evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Carraway, based on the production history as of now, or say, the last month available, how much gas allowable would this type of calculation give the gas wells?

A It would give them about 250 MCF a day apiece.

MR. RAMEY: As long as there were two gas wells?

THE WITNESS: As long as the Rob Number 1 and Number 2 were producing at ratios of 65 or 70,000 cubic feet per barrel. They are the ones that bring it up considerably.

Q (By Mr. Utz) What was the oil production on this pool for the month of April?

MR. STAMMETT: Seventy-five a day.

MR. RAMEY: Twenty thousand barrels a day.

MR. VINEY: Twenty thousand is what we picked up from the records for the month of March.

MR. UTZ: And that's from how many, seventeen wells?

MR. VINEY: There were eighteen wells, Mr. Utz.

Q (By Mr. Utz) Well, I'll ask you, how do you think that rate of production will hold?

A On the oil zone?

Q Yes.

A I think it would fall off and we are anticipating initiating a waterflood before very long in this reservoir, but we are anticipating that the wells which are now top allowable will be top allowable for something on the order of six months or longer.

Q I gather from your testimony that you don't think there is a separation between the Double L and the Patrick Well? I believe you stated somewhere along the line in order to establish communication between the two nearest wells there, the Patrick and what was it -- the Rob 2?

A The Sunset State, I believe. The Dalport Sunset State.

Q The Sunset State and the Patrick, that it would take six million a day for a period of ten days?

A Yes, sir. I went through a calculation in which I assumed some parameters also, and I don't know exactly how mine differed from those Mr. Viney did employ, but I did employ a rate of six million a day from the gas well and I assumed I was producing that gas well for ten days. I assumed there was gas all the way between the gas well and the oil well which is just about the only assumption that can be made under

the circumstances because we don't have anything that would take into account the gas-oil contact, because there are no techniques available. But it would take something on the order of ten days on the Dalport Sunset State -- if you take that assumption -- to get a one point pressure drop due to production of six million a day from the Patrick Federal.

Q Do you know of any other way of unquestionably establishing interference between these two wells?

A I think it would have to be done over a long term, something greater than the seven days that were employed on these two tests. I personally feel that this is a little bit early to be trying to show that the wells are separated from the old one in that the reservoir is still developing down to the south. And in a period of a few months, we may well know the situation a lot better than now.

If the pressure in one Sunset Well were to fall off at the same rate as some of the pressures up on the north end, then I don't think there would be any opposition on Humble's part, assuming separation at that time. But we feel it's too early to make a decision like this.

MR. UTZ: Are there other questions?

MR. HINKLE: I'll ask one more.

REDIRECT EXAMINATION

BY MR. HINKLE:

Q In your opinion, if the wrong decision is made and

you do testing, it could materially affect the production in the oil portion of it; is that right?

A Yes, sir.

Q And constitute waste?

A Yes.

MR. HINKLE: That's all I have.

CROSS EXAMINATION

BY MR. RAMEY:

Q Mr. Carraway, going back to Mr. Champeny's Exhibit 1, we show a line of high ratio wells and then down to the south, if you believe Mr. Viney's interference, there will be a barrier somewhere on the south part of the Dalport lease so that any wells drilled to the west would either cross this barrier and reach Mr. Viney's impermeable barrier, or else there would be a high ratio wells, and yet the second Dalport Well might also hit the barrier. So I wonder how much more development there is going to be that would prove any kind of separation in here?

A Well, I feel that with the top allowable well setting at the Dalport Number 1, that there will be development to the south. Again, this is only hypothesis, but I think even if there is not development any further south than there is right at the current time, that by monitoring the pressures in the Sunset State, you should be able to with the gas cap involved, but this can only be done with

substantial production from the Sunset State. Again, it boils down to a matter of time.

Q But you wouldn't anticipate any more drilling, say, in Section 36 or Section 1 to the west of the --

A No, sir, I would not.

Q -- existing wells?

A No, sir. The development I'm talking about would be primarily in Section 7, which would be southeast of the Sunset State.

MR. UTZ: Are you through, Joe?

MR. RAMEY: Yes, I'm through.

CROSS EXAMINATION

BY MR. TRAYWICK:

Q I believe you mentioned that you used different parameters in the reservoir limit equations than was used by Mr. Viney. How about thickness; do you recall the thickness you used?

A Yes, I assumed a net thickness of seven feet in my calculations.

Q Which would increase the time necessary to reach a boundary limit?

A I believe Mr. Viney used ten feet; is that correct?

MR. VINEY: Yes. Nine in the Patrick.

Q (By Mr. Traywick) It would be a direct relationship

with respect to time?

A Yes.

Q So if you use nine feet, that would cut the time down from ten days to approximately seven.

A Well, this may be true.

Q Assuming the other parameters -- no change in the other parameters.

A If they were equal, yes; but I think the point that I would like to try to get across at this point is that the parameters which we would employ would only be assumed numbers and no matter how much we tried to refine them, they would still be assumed numbers. And I feel that on that basis, that the test which was conducted is not conclusive. We are pushing the limit, in other words.

Q But even though they are assumed, they are the best numbers that can be derived from the data available?

A Yes, sir, they are.

Q The limitations, inadequacy of which is established by not having any additional drilling controls, so you have to assume uniform thickness, you know, uniform viscosity, uniform --

A Yes, sir.

MR. UTZ: Mr. Kellahin?

MR. KELLAHIN: Just a minute. Mr. Viney would like to ask some questions.

MR. VINEY: The gentleman that was asking Mr. Carraway questions, I would like to -- I guess just not ask questions, but clear up a point. Mr. Carraway is familiar with the ways of calculating permeabilities with the draw-down or pressure buildups. We did not assume any permeabilities. These are calculated. The evidence that we did assume was the thickness. Mr. Carraway would come up with identical calculations that were very similar, using the same figures as to permeability.

To answer a question you brought up, the radius of investigation is the function more of permeability, which, when used with lesser feet, will not only shorten the time but may cut the time into quarters by just application to this formula. But I did want to point out Mr. Carraway's situation. He has assumed some factors, which all of us do, to arrive at it, but on the permeabilities which we measured in Mr. McClellan's well, the 546 millidarcies that were calculated are minimal. The chances are it is closer to a darcy, if you would cut the average thickness of this reservoir down to its probable thickness of five feet over an extended drainage area.

So we then would have much quicker times to find our

boundary conditions. We would investigate larger boundary conditions, in the time that we have set up here, and taking Mr. Carraway's position that we are investigating a gas reservoir, and stated earlier by myself, we would have been back out on the water leg of the Double L Field on the east side.

THE WITNESS: Yes.

MR. VINEY: This is correct; right?

THE WITNESS: I guess the point I was getting at is yours was no more a question than mine.

MR. VINEY: But we did use the permeabilities shown here. They are calculated and determined from acceptable drawdown and the characteristics and the conclusions measured in the McClellan Well are accepted methods that Mr. Carraway or any other gentleman would have to come up with, employing the same drawdown equations.

THE WITNESS: I'm not sure what the question is, but I would like to point out that --

MR. TRAYWICK: I'm through.

MR. UTZ: I think the question was the same question that Mr. Traywick asked you, and he was just clarifying your answer.

MR. HINKLE: Do you have any further comments?

THE WITNESS: I have no further comments except

just to say that the calculations which have been employed here are complicated. They are somewhat sophisticated. They do require a great deal of data to be assumed. My point is that we should not at this time base a decision which can foul up the situation as badly as this can on assumed data, that we should wait until such time as we have conclusive data before we make a decision.

MR. UTZ: As far as the interference between these two wells are concerned, the question here -- you don't agree that the assumptions he made are correct in order to establish definite communication, but mainly because of the waves having to pass through a fluid-gas contact?

THE WITNESS: Yes, sir.

MR. UTZ: Any questions?

MR. KELLAHIN: Do you have all of the figures on which you based this calculation?

THE WITNESS: Yes, I have them.

MR. VINEY: Just as a quick question, Mr. Carraway, what estimate of permeability did you use? I mean, all of us have to make assumptions, and I know this is common knowledge.

THE WITNESS: I used 250 millidarcies and over seven feet.

MR. VINEY: In that case the measure of using ten-foot thickness was twice your figure and probably it's going to be four times that, so that would cut your figure, the time you would need to reduce the timber boundaries probably in the neighborhood of four to five days. This, I think, is calculation. I'm not arguing with you because I have to make the same assumption on other cases, so I know your problems.

THE WITNESS: Well, I'd like to be able to go through your data and make similar calculations myself.

MR. VINEY: That's why we gave you a copy of the exhibit.

MR. RAMEY: Mr. Carraway, how much information do we have on actual measured core permeability?

THE WITNESS: I believe Mr. Champeny has a better answer.

MR. CHAMPENY: I have core data on six wells. The average permeability in the oil leg from six cores that we looked at, and this is only taking out what was called net pay, what had oil in it, averages about 200 millidarcies.

MR. RAMEY: And you got 500 in the gas leg, you say, 500 plus?

MR. VINEY: Yes, sir. That was in the Dalport Well.

MR. RAMEY: Didn't you have a figure of --

THE WITNESS: Yes, sir.

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MR. RAMEY: Didn't you have a figure of --

THE WITNESS: Yes, sir.

MR. VINEY: Let me point out something that -- let me get back on the witness stand.

MR. KELLAHIN: I would like to ask a couple more questions.

CROSS EXAMINATION

BY MR. KELLAHIN:

Q What is being done with the gas you're producing at the present time?

A It's being flared.

Q Have you made a calculation of the value of that gas that's been flared?

A No, I have not.

Q Have you made a calculation of the total amount of gas that would be available to a line, assuming that your proposed formula was adopted?

A No, I have not.

Q You don't know whether there would be enough gas to justify a pipeline coming in there or not, do you?

A No, I don't.

Q Do you know how far they would have to come?

A No, I don't.

MR. KELLAHIN: That's all. Thank you.

MR. RAMEY: Back to the permeability. Have you ever witnessed anything in the range of 1800 in Queens Sands in New Mexico?

A No, I have not. We have run some buildup tests on two of our wells, the Lusk Number 1 and the DeSmet Number 1, and the buildup permeabilities don't seem to coincide. I mean, we came up with more millidarcy feet, or millidarcies, say, in those two wells than we get from core data, and so I don't know how to reconcile the discrepancy.

The 250 millidarcies I thought was high based on the core data, based on the majority throughout the pool, and I guess I would tend to consider the volume of core data as more representative than the calculated permeabilities based on buildup test analyses.

MR. UTZ: Any further questions?

The witness may be excused.

(Witness excused.)

MR. KELLAHIN: We would like to call Mr. Viney as a rebuttal witness.

MR. UTZ: Mr. Viney, will you take the stand again, please?

May I ask two questions before you get started?

MR. KELLAHIN: Yes, sir.

RALPH VINEY:

recalled as a witness, was examined and testified as follows:

CROSS EXAMINATION

BY MR. UTZ:

Q First, the permeability that you two are discussing and the permeability you used in particular, is that measured

or calculated?

A The permeabilities in the two tests, drawdown and buildup, are measured. We have core analyses to show that the permeabilities are in excess of two thousand millidarcies.

Q That's on the Dalport?

A On wells in this field. And I believe that on Humble's Well, on their Lusk, they have a core analysis which indicates permeabilities as high as a thousand millidarcies.

Q Now, the permeability on the Patrick Well 546, I believe, is that measured?

A That was a calculated. We did not have a core analysis on the Patrick Well.

Q Do you have a core analysis on the Dalport?

A Let me read what I have, if I may, sir. I would like to read here the Marion Federal Wells and I'm going to just read the permeabilities quickly. 139, 57, 62, 89, 107, 119, average of 95.5. The average porosity was twenty-two percent.

On the Spurck State Number 2, the upper member, and we only had one foot core, 154 millidarcies, then 15, 112.7; going into the lower members, 29, 283, 251, 19, 54; average of the ones reported, 102 millidarcies. The porosity through that interval, twenty percent.

On the Humble Lusk 1, 109, 1150, 104, 78, 600.

This is in the upper members. Then we have a tight zone that goes from .6 to a high of 5.8 through these tight members. The lower members, three cores, were analyzed. 460, 364, 468. I did not run averages on these. The porosity in the upper range is about twenty-nine to thirty percent; in the lower members, about twenty-six to twenty-seven percent.

MR. CHAMPENY: I can give the average on that, if you wish. 416 millidarcies. Twenty-five and a half percent porosity. Four hundred millidarcies is over that eight-foot twenty-five and a half porosity.

THE WITNESS: Amco Federal Number 3, 1,125, 2,080, 61, 167, 54, 48. of the tight members; going down to the lower members, we have two cores that showed any porosity and permeability. 137, 237. Porosity in the upper members range from twenty-three percent to thirty percent. Lower members average about nineteen percent. Those are the porosities. And the Corrine Grace Well, as you will notice, when the Rob Number 1 Well was drilled, as the Corrine Grace Well, the upper zone was drilled using cable tools, and the test was entirely gas.

They then took the cable tools, drilled approximately three feet, and had oil. Now, in the upper member of the Corrine Grace, which is updip, permeabilities: 414, 154, 150; porosities, twenty-seven to thirty percent. Lower members: fifty-six millidarcies, 17, 28. Porosity range, 20.6 to 25.3

percent.

One of the evidences that we found was that there was a permeability porosity pinch out updip towards the barrier. As Mr. Carraway pointed out, these calculations are theoretical calculations of permeability on formulas, yet we have to make some assumptions. But for the record, no assumptions were made except for thickness in determining the permeabilities. Permeabilities, if we inject the average thickness, we investigated a much further radius than was presented in this testimony.

MR. RAMEY: So you feel your permeability calculations are in range with some of the actual measured --

THE WITNESS: Yes, sir. I feel that we have definitely had the permeability range in here. We have now looked at permeabilities in excess of even the highest one calculated on the Dalport Well. The Dalport, Mr. Carraway, in my opinion, is an unusually good well. Your wells on the flank of the main deposition are a little tighter. Some of them are not as good as this Dalport Well. This is an exceptional well. Deposition-wise, it's exceptional.

MR. CHAMPENY: You're talking about the three?

THE WITNESS: The Dalport Sunset Well. Now, let me go into some questions as to voidage. I think basically --

MR. UTZ: While you're looking for them, how long

was the Patrick Well under test?

THE WITNESS: One hundred twenty hours.

MR. UTZ: At what rate?

THE WITNESS: Three million six hundred thousand a day.

I would like to go back on Mr. Carraway's point on the pressures. For the record, I did not say that there was a discrepancy in the dead weight tested. I just don't know whether dead weight testers were used on those.

MR. McCLELLAN: I can answer that, if you will let me. No, they weren't. One of them, we can't, because the valve's on the side and by the time you put the valve on, it was a very frantic situation, and somehow or another, we slapped the valve on the side. Only the recent tests have been the type he's talking about. The others were calculated by Mr. Smith in Hobbs.

THE WITNESS: Sir, I don't know what type of instrument he used, but I know he didn't use the drop line. He couldn't in the least. Because in this case, you can't get the line in there. So those were calculated pressures based on, I suppose, the surface pressures, and the volume and so forth.

Let me bring out a few more points of evidence as to why we picked our barrier. The average permeability in the Spurck Number 4 Well in 36 close to the barrier was ten

millidarcies. The average permeability in the one to two feet that we had in the Spurck 5, the dry hole was 3.5. I agree with Mr. Champeny's situation that one location to another, we cannot tell whether the formation is continuous and productive. And therefore, we have been correlating intervals and our consensus, of course, as presented in the testimony is the pressure drawdown tests are a little more indicative of the investigative area, rather than assuming that the conditions could or could not exist between wells.

I don't think that we can correlate and be positive that communication does or does not exist, and I have to put it in the record that way. Let me go on. We are going to -- since we got into this -- let's just find out what kind of an old field we're talking about. I used the average porosities a little lower than Mr. Carraway, and I parametered and looked at this whole field.

The gross area of this reservoir is approximately 7,900 acre feet. The oil in place is approximately 900 barrels per acre foot. The area of the reservoir is approximately 1600 acres. And let's now take a look at what are we looking at in the way of reserves. Assuming no gas cap, just assuming that my original center map, isopach map, is reasonable and that the oil in place calculations are reasonable, we are looking at 7,100,000 barrels in place. Now, whatever you want to apply for recovery factor, whether you

want to go for ten percent, you're talking about 712,000 barrels recoverable. If you want to go as high as thirty, you're talking about 2,136,000 barrels. I assumed that with the location that Humble is now completing in other potential locations that the total well count could be as high as thirty wells. If we then assume a ten percent recovery, the average well recovery is going to be 24,000 barrels.

If we assume a thirty percent recovery, the recovery is going to be in the neighborhood of 71,000 barrels. I would like to point out that on a productive index test that Humble ran on one of their wells, we calculated that it would run about fifty thousand barrels. This is available, and they have it in their records, indicating that on our basis, here, we assumed the average reservoir thickness is five feet.

And, now, we think that the gas cap is there, and, in fact, we have evidence that we can show you that the gas cap is there. I think this is pretty well established that it was a gas cap, so that in-place oil is about 6,400,000 barrels. On a ten percent, we're looking at 642,000 barrels of recoverable oil, and thirty percent, we're looking at one million nine for the recovery per well on this range; twenty-one to sixty-four thousand barrels of oil per well under primary conditions.

Let's look and see what's happening when you

produce the gas in the reservoir. Your problem is not from being connected to Mr. McClellan's well, because you're not. Your problem is allowing production of your high gas-oil ratio wells in your own reservoir. Let's assume that we have a well with two-barrel a day limitation or allowable, and we employ a seventy barrel for the field with a two-thousand to one limitation. That well, on a daily basis, is voiding the reservoir of 600 barrels a day. Six hundred.

Let's take the other position that Humble's got a well making top allowable, which is the reported conditions for March. The average voidage of a top allowable well with a ratio of 700 is 282 barrels a day. Your problem is not being connected with Mr. McClellan's gas well, or having that gas cap, with the amount of oil in the unreported gas that's been produced. The pressures should have been reduced if they were connected in Mr. McClellan's well. The difference in the pressures that Mr. Carraway brings up, unfortunately, are, I think, sloppy engineering.

Somebody didn't keep proper gauges. Unfortunately, even some of our people are pretty sloppy. But this I think we all run into. Gentlemen, I don't think you're connected. I think your biggest problem is a voidage of your gas reservoir, and the sooner that you employ artificial

means to maintain the reservoir pressure and to make a gas connection, even for the benefit of your solution gas, you're going to make money. Well, in the range here of the average well last month, produced thirty barrels per day. The average ratio, seven hundred to one. You're voiding 130 to 140 barrels of reservoir space with every thirty barrels of oil you're putting your stock in. Your problem is not Mr. McClellan's gas cap. It's in your own reservoir.

We personally feel that on the basis of this investigation, that we have employed the most honest techniques that we could. We went into this and advised Mr. McClellan that this drawdown and interference test could immediately show that the two wells are connected and therefore, he could blow his whole case.

He was advised of this before we started. We purposely extended the test three extra days, and ran pressure instruments each time to make sure that we were still in a building, or drawdown position. On the basis of our evidence and of the performance of this reservoir, it is our opinion that the rules proposed by Mr. Carraway would not make it economically feasible for a pipeline gatherer to enter the area, nor would it allow me to back track, and that you people, the operators in the reservoir, would suffer a severe economic loss and waste.

This nitrogen gas is a difficult gas to process. And as the engineer from Artesia pointed out in his questioning of me -- brought out in his questions that unless you have a gatherer who has sufficient volumes of gas in which to handle this high nitrogen content gas from the Queen Wells in this area, it is doubtful that you will obtain a commercial connection for this particular area.

MR. HINKLE: We would like to ask one question.

MR. CARRAWAY: Is there any one well that you can point to that has a core analysis that has something on the order of six hundred millidarcies, an average of over ten feet?

THE WITNESS: Yes, sir, (indicating). The Amco Federal Number 3.

MR. CARRAWAY: What was the average over ten feet of that one?

THE WITNESS: And if you will take your Lusk Number 1, you'll have over five foot intervals.

MR. HINKLE: Answer his question. Was that average over ten feet?

THE WITNESS: Over ten feet?

MR. HINKLE: Yes.

THE WITNESS: No, sir. He said six feet. Over six feet.

MR. CARRAWAY: I'm using 250 over seven hundred feet, and I'm questioning the 700 over ten feet number.

THE WITNESS: Well, I'm not questioning. I have none that show over ten feet from actual measured analyses. No, all I'm saying is the calculations show an average assuming ten feet of pay in that well, or nine feet, what we assumed.

MR. HINKLE: But the wells do not average over that ten feet, do they?

THE WITNESS: No, they don't average that, but let me point out, Mr. Hinkle, what Mr. Carraway is bringing out is not a question. He is confusing core analysis with calculated permeabilities. They have no relation in this particular case.

MR. CARRAWAY: I don't think I'm confusing them. I'm just questioning as to why you would choose to use your calculated numbers instead.

THE WITNESS: Well, I've used my calculated numbers, have I not?

MR. CARRAWAY: Yes, you have.

THE WITNESS: Yes, sir. Is this not based on good evidence?

MR. HINKLE: He says you're not using the actual information that was available from the core data.

THE WITNESS: Mr. Hinkle, core data measured eight inches of rock out of every forty acres, and I don't think this is a representative condition. I think the flow conditions of permeability measured from flow conditions are more representative than you can get from eight inches of rock out of forty acres.

MR. CARRAWAY: I don't feel that I want to argue that point at this time. I disagree with you. I'll go that far.

THE WITNESS: Yes, we have some evidence here of six or seven feet that have ranges above six or seven hundred millidarcies, or averages. Your own well had an average much above five hundred, or five feet in the upper part of the Lusk.

MR. CARRAWAY: I was using seven feet, though.

THE WITNESS: Yes.

MR. TRAYWICK: May I ask --

THE WITNESS: Yes, sir.

MR. TRAYWICK: There are no known permeability values within the area investigated by your reservoir limit test. I mean, your permeability values you were giving us was for oil wells outside of the area of investigation?

THE WITNESS: Yes, sir; this is all we had on that, sir. Unless, cable tooled.

MR. TRAYWICK: So there are no known values within the area in which we applied the reservoir limit calculations?

THE WITNESS: This is the point I would like to clarify, to Mr. Hinkle and to Mr. Carraway, and that in lieu of analysis, I don't think you can take the analysis of a core one or two miles away and say it's applicable to the particular well that's being analyzed.

MR. McCLELLAN: If you would allow me to -- I believe I can clarify this very simply, very practically.

MR. UTZ: We'll be glad to swear you and put you on the stand as soon as Mr. Viney's finished.

MR. McCLELLAN: All right. I think we can clarify this point he's making here very easily.

MR. UTZ: All right.

MR. KELLAHIN: Actually, the figure you used was a calculated figure based on your pressure buildup tests; is this correct?

THE WITNESS: Yes, sir, and this is a generally acceptable technique where analyses are not available.

MR. CARRAWAY: Am I allowed to testify at this point? I hadn't planned on presenting these, and I won't, but they are two buildup tests that we conducted, one on the Lusk Number 1. On these tests, we will define buildup curves on these things, in which I calculated an average of

590 millidarcies in the DeSmet Number 1 for every seven feet average, and in the Lusk Number 1, we had 1580 millidarcies average over eight feet. This is up in the part of the reservoir where we have core data available, and I can't reconcile the core data with a buildup test data, but with the volume of core data we have available, I believe the core data.

And I use these numbers, but I'm trying to show that the discrepancy that he points out here with the large permeabilities in his gas wells, if you want to believe these buildup tests, you can go up to the other part of the reservoir and see the same thing.

MR. VINEY: Mr. Carraway, I agree with what you're bringing out, but at the same time, how do we know what's the reason for the use of buildup and drawdown tests? Also, wells do improve after initial drilling. Remember that your cores normally are damaged with drilling and mud filtrating. So actually, I think it's just what you and I would wish to state for the cause we're trying to push.

MR. CARRAWAY: I guess that's what it boils down to.

MR. UTZ: Mr. Viney, I don't think I'm making a misstatement when I say that you are more than convinced that your interference tests between the Dalport 1 and the

Patrick I was more than adequate to prove communication or the lack of communication.

MR. VINEY: Yes, sir.

MR. UTZ: Would you have any other suggestions that would more definitely prove the lack of communication?

MR. VINEY: I don't know how, Mr. Utz, unless you wait until the oil field is depleted and then find that the gas pressure is the same.

MR. UTZ: Longer interference tests?

MR. VINEY: I don't think they would prove anything. I think basically, if you take the conditions here and cut the average thickness down to five feet in the well, which actually probably is the drainage, thickness of the average drainage area, that we probably investigated an area of maybe five or six thousand feet from the well bored. Now, what direction that is, I can't tell you, but if it were in the direction of the Dalport Sunset Well, we should have seen evidence in the Dalport Well.

MR. UTZ: Even though there might be a liquid-gas contact between the two wells?

MR. VINEY: There could be, but based on the structure, we think this is probably lower, and that the interface may not come between the direct line between the Sunset and the McClellan Well.

MR. UTZ: Well, let's assume there is a contact.

Then how would you prove this interference?

MR. VINEY: You can't very well conclusively prove the interface with an interference test. It's a very fine point, and the inflection is one of argument. I mean, even among good information, it's a difficult thing to see.

MR. UTZ: Other questions?

MR. TRAYWICK: An oil-gas contact would give you a difference in viscosity and give you a barrier effect on your drawdown curve?

MR. VINEY: Yes, sir. Actually, in reservoirs where you have gas-oil contacts, and sometimes even oil-water contacts, you have to be very careful on your interference and drawdown tests or you can really call the wrong shot. This becomes a fine technique, and I think there, again, the more you use these things, you become better experienced in it, and the evidence that we saw did not point out anything but barriers.

MR. UTZ: Other questions?

The witness may be excused.

(Witness excused.)

MR. KELLAHIN: I would like to call Mr. Jack

McClellan.

JACK L. McCLELLAN,

called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A Jack L. McClellan.

Q Mr. McClellan, are you the Applicant in the case before the Commission?

A Yes, sir.

Q What is your occupation?

A I'm a geologist and oil producer.

Q And have you testified before the Oil Commission and made your qualifications as a geologist a matter of record?

A Yes, sir.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. UTZ: Yes, they are.

Q (By Mr. Kellahin) Mr. McClellan, you heard the testimony in regard to differences of interpretation of permeabilities. Have you had any experience, in particular, in the area involved in this application which would throw any light on this?

A Coming back to the Dalport Well, besides being in the oil business, I have two cable tool drilling rigs which we drilled the Dalport, the Patrick, all the Sulimar; we drilled two Pan Americans up in the Double L. I drilled my lease in the Double L, my two Sue Wells, the Marion.

Back to this question of the permeability, when we drilled some of those other wells on the north end, we recovered small amounts of oil on the bail test in the neighborhood of three to four gallons an hour, and which was indicative that the wells were not very good wells.

The Dalport Well, I believe, would have flowed. We had almost a complete well full of oil. When we drilled the Patrick and the Lisa Number 1, they both blew out. This, I think, is a function -- and the reason I'm bringing this out is because we don't have any measurements. You can't really hang your hat on what I'm saying, but it is an indication that you do have some tremendous permeabilities, I think, particularly in the Dalport Well, which is evidenced by the capabilities of it.

If you will notice on the drawdown on the Patrick Well, that it had a very quick recovery after all that gas being produced. Consequently, I think you could assume here that you had some rather large permeabilities, so I inject

this, only the fact that I have drilled all over the whole area out there with cable tools, and we do get some indication as to the amount of oil which we do initially bail out when we drill into the pay. You can't put a number on it, but it's indicative of increased permeability.

MR. CHAMPENY: Jack, is it true that you drilled the two Rob Wells?

THE WITNESS: Yes.

MR. CHAMPENY: Is it not true that the -- at least the Rob Number 1 blew out when you went into the gas there?

THE WITNESS: I'm glad you asked that. Yes.

MR. CHAMPENY: Is it also true that you stated that the permeabilities are tighter, close to your boundary condition that you hypothesize?

THE WITNESS: All I was pointing out was the similarity between the fluids we get when we drill these wells and the gas wells when they blow out. I made no other assumption. But we can -- we drilled both wells. The first one, it blew out. We were all worried because it was a large volume of gas. We drilled three or four more feet and counted the oil, and then it really was a mess, oil blowing everywhere.

And the same thing occurred on the second Rob Well.

MR. CHAMPENY: So the permeabilities in the second

Rob Well are probably the same as the permeabilities down south?

THE WITNESS: No, I wouldn't say that. I don't know. They were fine permeability, obviously.

MR. KELLAHIN: That's all.

MR. HINKLE: That's all we have.

CROSS EXAMINATION

BY MR. UTZ:

Q Getting back to this pressure on the Patrick Number 1, which you submitted on your four-point test there, are you telling me that you did not use a dead weight gauge when you ran those tests?

A I'm not an engineer, and to be really truthful, I don't know what a dead weight gauge is.

Q Do you know what a dial gauge is?

A I wasn't out there when he measured it. I don't know how he measured it, but if this dead weight has to go down on a wire line, we did not.

Q No, it was a bottom hole. It would be weights that you measure while you hook a hose up to the well head, and you measure the pressure by putting weights on little rotary cable.

A We could sure find out. I could call the man and find out.

Q If he had a dial gauge on there, you would know that?

A Like I say, I wasn't out there.

MR. RAMEY: It did have a valve on it?

THE WITNESS: It's got a valve on it. When you said that dead line, I thought they had to lower a weight in there, and there's no way, because the valve's going out that way, (indicating straight ahead.)

Q (By Mr. Utz) You say Smitty took this test. Well, Smitty knows how to test, and I would bet he used the dead weight test.

A I don't have it with me. Those wells have been tested and tested numerous occasions by Phillips, Cities Service. I think some Continental, and some others I haven't --

MR. UTZ: Other questions?

MR. RAMEY: I would like to ask a question.

CROSS EXAMINATION

BY MR. RAMEY:

Q Mr. McClellan, you are a major interest holder out here and maybe you could enlighten us on what's been done about getting casing head gas connected. Is there presently a market outside of -- well, the Natural Gas Pipeline market?

A We were approached, or I was approached by both

Phillips and by Continental with low pressure gas lines to enter into that area to take this gas, at least to the Sulimar. I don't know about the Double L, what happened up there, and, of course, we have -- Natural Gas has the ability, in my opinion, to take much larger quantities of gas than does anyone else. There is a unique situation inasmuch as they are interested in the gas, and not particularly the liquids. But on the other hand, the other pipeline companies are interested in the liquid and not the gas.

So you have two complete approaches to it. I heartily agree that we need to get a gas connection right away, because we are losing a lot of money. If you will look on that map, I think you'll find that I own most of the acreage involved by the take from those gas wells, and it's certainly not my intention to ruin my own oil field, but I do think time is of the essence in this, because we can't hold off Natural Gas Pipeline forever.

They are ready, willing, and able to come after it and to blend the natural gas in with whatever they use. They are going to take a lower BTU. Ultimately, we plan to put a plant in there and perhaps extract the nitrogen from the gas, and when you do, you come up with a real good, high BTU gas.

The reason that I have asked for this is that I feel that this gas area covers a very large area out there, and potentially has a great deal of value, but the only value we have is if we have somebody in there willing to take the gas. We have known for years it was there, but it has no economic value. Now, it definitely has economic value.

Q At the meeting Wednesday in Hobbs, which kind of started this whole thing, I guess, or shall we say enlightened us, anyway, you pointed out that you had had a firm offer from Continental.

A We had a firm offer.

Q For casing head gas only?

A For casing head gas only.

Q Is that still available?

A I do not know. I did not want to go with that contract for the simple reason that they did not have the capacity to handle -- I don't think they could handle the Sulimar gas, and I know they couldn't handle both the Sulimar and the Double L. You realize by the analysis of that gas that even the casing head gas has a fairly large amount of nitrogen in it.

Their plant is limited with their contract to

Southern Union that all they can sell -- or they have to get up to a thousand BTU. Anything over that, they are penalized. So right away, they would reach it, in my opinion, and I've heard a gas engineer -- and he made the comment also that their capacity to take the gas is going to be very limited.

Q Well, now, the professional from Artesia was telling me on the way up here that Phillips had made a firm offer, and they could divert this gas to their Lea plant and Eunice plant.

A They made a firm offer and withdrew it, and they have not made a firm offer to me.

Q So as of now --

A There are no firm offers.

Q For casing head gas? Now, under your proposal, I think -- correct me if I'm wrong -- at the Hobbs meeting that you had plans to maybe lay your own gathering system or a cooperative system for the operators for casing head gas, and it would be compressed?

A Under the conditions, there would have to be some compression on our part, which we agreed to do. We were going to be out the expense of the gathering system.

Q In other words, you turn into a gas transporter, along with being a driller and oil operator?

A It will necessitate the facility of gathering the gas on the part of the operator in my particular area. Now, again, I'm -- I can't speak, even though I'm an operator of the Double L, I don't think we have had any real -- well, I'll just have to stay with what I know, and that's the Sulimar, and we would have to put our own gathering system in, which would not be too difficult.

Q This could also possibly be done in the Double L?

A Right.

Q And this gas would then be made available to Natural Gas Pipeline?

A Right. I feel that they have the capacity to take the nitrogen gas later on. Right now, they can take some of it, and it'll be probably a year or longer before there is any facility to take the pure nitrogen gas, make it into itself without blending it to make it a commercial product. I think this is probably the only opportunity we're going to have to get a market for this gas.

Q If they came in tomorrow, would the casing head gas go to them?

A The casing head gas would immediately go to them.

Q That's your primary concern, is the casing head gas?

A Right. We are not wasting nitrogen gas.

Q But as of now, you have no firm offer for selling your casing head gas?

A No.

MR. RAMEY: That's all I have.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. McClellan, how much production do you have in the Double L?

A Let's see. I have four producing wells in about -- well, probably two or three more undrilled locations.

Q Any fair producers?

A Two of them are top allowables.

Q Seventy-five barrels a day?

A Yes.

Q How much casing head gas is being flared from this pool; do you have any idea?

A I don't know.

Q Substantial, is it?

A I can't answer that, because I just don't know. It's substantial. It's enough that we certainly ought to be selling it.

MR. KELLAHIN: We do have a small gas cap on this pool. Shouldn't that be rejected?

THE WITNESS: We have looked into that possibility,

but we get no encouragement from the engineers along this line.

MR. UTZ: Seems like you should if there are any worried about wasting oil.

THE WITNESS: Well, of course, in the Double L, who's going to put the compressor in? And then the question will rise -- you're getting over my head. I'm not a reservoir engineer, so I would just prefer not to comment.

MR. RAMEY: Are there any plans for any engineering committee meetings?

THE WITNESS: Yes, we are in the process of making a waterflood study, and as Humble pointed out, they asked that we meet for the Double L, so I think the sooner we make preparations to start flooding both of these fields, the better off we'll be.

MR. UTZ: I will gather, Mr. McClellan, that you are convinced there is no communication between your undesignated Queen Pool and Double L?

THE WITNESS: Yes, sir.

MR. UTZ: And you have an interest in oil production in the Double L; you stand to lose substantial amounts of money, but if you went to some dry sand --

THE WITNESS: Well, if you will look at your ownership

plat, I also find the acreage in the Patrick and the Dalport Well, which, of course, I wouldn't -- if I thought we were taking the pressure off that, I wouldn't be in favor of that. I'm convinced that the gas is a separate entity.

MR. UTZ: Do you have any plans to drill another well toward the Dalport?

THE WITNESS: I don't know. Right now, we are drilling an eleven thousand footer over there in another spot, and we're waiting to see what's going to happen.

MR. KELLAHIN: We could blow this thing if Humble and Dalport and you would drill a well. We could find out.

MR. CHAMPENY: You can't go any further south.

MR. UTZ: There is the Dalport location in the south part of their lease.

Are there other questions of Mr. McClellan? You may be excused.

(Witness excused.)

Statements in this case?

MR. KELLAHIN: I have a statement left with me by Pan American Petroleum Corporation. It's written, and I'll just let you have it as a written statement.

MR. UTZ: A written statement from Pan American

will be entered into the record.

Any further statements?

MR. MEDLEY: Mr. Examiner, if you would like for me to -- sitting here listening, I wondered if this is a proper time to say anything or not. Our position depends on the outcome of this, of course, whether we would bring a pipeline in or not. Any statement that I make will be general. I will not answer detailed questions. We have had negotiations with Mr. McClellan. We have had discussions with Mr. Todd at Dalport Oil. Other than that, we have talked to no one.

We have not talked with Humble, with Pan American, Cities, or any other operators, not to that stage. If we move, if we put a pipeline into the area, we initially intend to take ten million cubic feet away. The volumes available from Sulimar and from Double L, and from Jack McClellan's gas wells will probably total seven million cubic feet a day. We have thrown in three million a day as a fudge factor if we miss our current producing production estimates. We will stay at ten million a day until the area proves up-gas.

We think there is a lot of gas there. We are of the same opinion that Mr. McClellan is. We can look at the wells over the area. We can see a lot of gas tests. As soon as the wells, or as soon as enough reserves are built up to

make a plant feasible, in that we would have enough gas to run through this plant for several years, we will build a nitrogen extraction plant. At that time, we will take all the gas that's available.

MR. UTZ: You said seven million from the two oil pools?

MR. MEDLEY: Seven million from the two oil pools plus probably the dry gas from the Lisa and the Patrick.

MR. UTZ: Thank you very much.

MR. LAMPERT: I would like to make a statement.

Leon Lampert with Dalport Oil Corporation. We agreed originally to run these interference tests between the Sunset and the Patrick, like Jack mentioned, to just find out once and for all whether there was communication, or no communication. And it is our opinion now that there is no communication from the evidence presented; there is no communication between the Patrick and the Sunset Wells; that there is a barrier separating those two wells, and that that barrier extends northward and connects in some fashion to the Dalport Number 5 Spurck in Section 36, which is tight and dry and abandoned, and which extends -- and the barrier extends a little bit further north right to the west of our Number 4 Spurck 1 location, north of the 5, since the permeabilities in that Number 4 Spurck are very low, averaging 10.7 millidarcies.

would testify to the fact that there was no barrier. We would be jeopardizing our production that's east of this barrier. And I just wanted to point out that we would suffer economic loss if we would be drained by a common -- by wells in a common reservoir. But we feel that it is not a common reservoir.

MR. UTZ: Thank you.

Any more?

May I have your attention, please? We have a telegram here to read into the record. This is a telegram which was signed by B. G. Griffin, Amerada Hess Corporation, and reads as follows:

"Regarding Case 4352 set for Examiner Hearing Wednesday, May 27, 1970, Amerada Division of Amerada Hess Corporation, as an offset lessee is opposed to the creation of a new Queen gas pool on the south by application and recommends that the Patrick and McClellan Lisa Federal wells be placed in the Double L Queen Pool.

"We support the classification of both the Double L and Sulimar Queen Pool as associated oil and gas reservoirs, and recommend that allowables be determined on an equivalent voidage basis. B. G. Griffin, Amerada Hess Corporation.

The case will be taken under advisement.

I N D E X

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I, DAVID BINGHAM, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

David M. Brigham
COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the hearing before me on 4352 filed by me on May-22 1940.

[Signature] Secretary

New Mexico Oil Conservation Commission

dearnley-meier reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
May 13, 1970

EXAMINER HEARING

IN THE MATTER OF:)
)
)

Application of Jack L. McClellan for)
the creation of a new gas pool or, in) Case No. 4352
the alternative, the establishment of)
pool rules for two existing pools,)
Chaves and Lea Counties, New Mexico.)

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

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SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO



BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 29, 1970

EXAMINER HEARING

IN THE MATTER OF:

Application of Jack L. McClellan for
the creation of a new gas pool, or,
in the alternative, the establishment
of pool rules for two existing pools,
Chaves and Lea Counties, New Mexico.

CASE NO. 4352

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: Case 4352.

MR. HATCH: Case 4352. Application of Jack L. McClellan for the creation of a new gas pool or, in the alternative, the establishment of pool rules for two existing pools, Chaves and Lea Counties, New Mexico.

The Applicant has requested that this case be continued until May 13.

MR. UTZ: Case 4352 will be continued until May 13.

STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

I, DAVID BINGHAM, a Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

David Bingham
 COURT REPORTER

I do hereby certify that the foregoing is
 a complete record of the proceedings in
 the Linnier hearing of Case No. 4352
 heard by me on *Apr 29*, 1920.
Thos. L. Linnier, Examiner
 New Mexico Oil Conservation Commission

Enc 1285

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

August 25, 1970

Mr. Jack L. McClellan
P. O. Box 848
Roswell, New Mexico 88201

Re: Casinghead gas connections
in Sulimar-Queen and Double L-
Queen Pools, Chaves and Lea
Counties, New Mexico
Order No. R-3981

Dear Mr. McClellan:

This is to acknowledge receipt of and to thank you
for the progress report submitted by you, dated August
24, 1970, concerning the above-described matter.

Please keep the Commission informed of any further
developments.

Very truly yours,

GEORGE M. HATCH
Attorney

GME/esr

cc: Oil Conservation Commission
P. O. Box 1980
Hobbs, New Mexico

Oil Conservation Commission
Drawer DD
Artesia, New Mexico

C
O
P
Y



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

August 4, 1971

GOVERNOR
BRUCE KING
CHAIRMAN
LAND COMMISSIONER
ALEX J. ARMJO
MEMBER
STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

Mr. Sim Christy
Jennings, Christy & Copple
Attorneys at Law
Post Office Box 1180
Roswell, New Mexico 88201

Re: Case No. 4352
Order No. R-3981-A
Applicant:
OCC

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC x
Aztec OCC

Other Mr. Clarence Hinkle, Mr. Jack McClellan, Mr. Don Stevens
Mr. Carl Traywick

Docket No. 13-71

DOCKET: EXAMINER HEARING - WEDNESDAY - JUNE 30, 1971

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 4352: (Reopened) (Continued from April 14, April 28, and May 19, 1971, Examiner Hearings)

In the matter of Case 4352 being reopened by the Oil Conservation Commission upon its own motion to give all interested persons an opportunity to appear and present evidence to whether the Double L-Queen and Suble-Queen Pools, Chaves County, New Mexico, are in fact separate reservoirs or one common reservoir. Further, in the event it is found that the two pools comprise one common reservoir, the Commission will consider the adoption of special rules and regulations to provide for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and an allocation formula for withdrawals from the gas wells and oil wells.

CASE 4539: (Continued from the May 19, 1971, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Doanbuy Lease & Company, Inc., and all other interested persons to appear and show cause why its following described wells in Section 27, Township 14 South, Range 33 East, Saunders Pool, Lea County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program:

Atlantic State AC - 1	Well No. 1	Unit N
Atlantic State AC - 2	Well No. 2	Unit M
Atlantic State AC - 2	Well No. 3	Unit O
Atlantic State AC - 3	Well No. 4	Unit L
Atlantic State AC - 3	Well No. 5	Unit J
Atlantic State AC - 4	Well No. 6	Unit P
Atlantic State AC - 4	Well No. 7	Unit I

CASE 4556: Application of Tenneco Oil Company for salt water disposal, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Queen formation in the perforated interval from 3154 feet to 3159 feet in its USA-Reno Well No. 1 located in Unit L of Section 3, Township 15 South, Range 31 East, Caprock-Queen Pool, Chaves County, New Mexico.

- CASE 4557: Application of Continental Oil Company for transfer of allowable, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to transfer allowable across the boundaries of the participating area and the leases outside said area but within the Maljamar Cooperative Area, MCA Unit Area, Maljamar Grayburg-San Andres Pool, Lea County, New Mexico.
- CASE 4535: (Continued from the April 28, and the May 19, 1971, Examiner Hearings)
- Application of Continental Oil Company for down-hole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Monument-Tubb and Weir Drinkard oil production in the well-bore of its SEMU Well No. 70, located in Unit I of Section 15, Township 20 South, Range 37 East, Lea County, New Mexico.
- CASE 4558: Application of Midwest Oil Corporation for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Little Inbe (Bough "C") Unit Area comprising 2,240 acres, more or less, of state lands in Sections 10, 11, 14 and 15 of Township 10 South, Range 33 East, Inbe Permo-Pennsylvanian Pool, Lea County, New Mexico.
- CASE 4559: Application of Midwest Oil Corporation for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Little Inbe (Bough "C") Unit Area, Inbe Permo-Pennsylvanian Pool, Lea County, New Mexico, by the injection of water through three wells located in Sections 11 and 14 of Township 10 South, Range 33 East, Lea County, New Mexico.
- CASE 4560: Application of Rijan Oil Company, Inc. for a pressure maintenance project, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot pressure maintenance project in the Slick Rock-Dakota Pool by the injection of water into the Dakota formation through its Rijan Wells Nos. 10, 12, and 14 located, respectively, in Units F, L and K of Section 31, Township 30 North, Range 16 West, San Juan County, New Mexico.
- CASE 4561: Application of Great Plains Land Company for an exception to Order No. R-3221, as amended, Eddy County, New Mexico. Applicant, in the above-styled cause, seek an exception to

(Case 4561 continued)

Order No. R-3221, as amended, to dispose of water produced by its well located in the NW/4 NW/4 of Section 31, Township 18 South, Range 30 East, Shugart Field, Eddy County, New Mexico.

CASE 4562: Application of Texas Oil and Gas Corporation, for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the special rules and regulations governing the Indian Basin-Upper Pennsylvanian Gas Pool to permit the drilling of a well at an unorthodox gas well location 990 feet from the North and West lines of Section 22, Township 22 South, Range 23 East, Eddy County, New Mexico.

CASE 4563: Application of Corinne Grace for special gas-oil ratio limitation and pressure maintenance project, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to produce her State Well No. 1 located in Unit A of Section 1, Township 15 South, Range 29 East, Double L-Queen Pool, Chaves County, New Mexico, with no gas-oil ratio limitation, strip the liquids, and institute a pressure maintenance project by the injection of all said gas back into the producing formation through her State Well No. 2 located in Unit B of said Section 1. Applicant further seeks to transfer an oil allowable from said Well No. 2 to said Well No. 1.

CASE 4564: Application of Penroc Oil Corporation for a non-standard oil proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of an 80-acre non-standard oil proration unit comprising the SW/4 NE/4 and NW/4 SE/4 of Section 33, Township 18 South, Range 38 East, Hobbs-Drinkard Pool, Lea County, New Mexico, to be dedicated to its Conoco-State Well No. 1 located 1980 feet from the North line and 2130 feet from the East line of said Section 33.

CASE 4549: (Continued from the June 15, 1971, Examiner Hearing)

Application of Tom L. Ingram for unorthodox gas well location, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox gas well location for his Light Well No. 1 located 1980 feet from the South line and 660 feet from the East line of Section 15, Township 8 South, Range 37 East, Bluit-San Andres Associated Pool, Roosevelt County, New Mexico, the S/2 of said Section 15 to be dedicated to the well.

Case 4352

Heard 5-27-70

Rec. 6-10-70

Grant McClellan request for
a new Gas Pool for his Patrick
#1, N-12-155-29E. & the Lisa B'

#1, D-13-155-29E.

The Horizontal limits should
be. 155-29E.

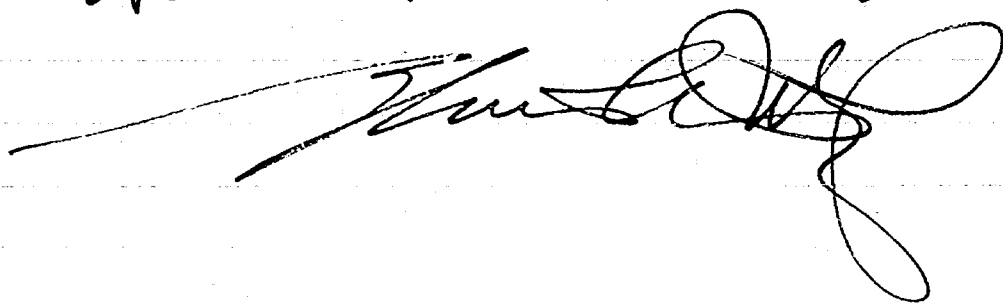
sec - 12 - SW 1/4

✓ - 13 - NW 1/4

& known as the Suble-
Queen Gas Pool

Require that any evidence
that would ~~indicate~~ indicate
~~communication~~ communication
between this Pool & either
the Double L or Sulimar
be reported to the Com-
mission at once.

Require that wells in
the Double L & Sulimar
not flare any gas ~~for~~
90 days after the date of
this order.



BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4352
Order No. R-3981

NOMENCLATURE

APPLICATION OF JACK L. McCLELLAN
FOR THE CREATION OF A NEW GAS POOL
OR, IN THE ALTERNATIVE, THE ESTAB-
LISHMENT OF POOL RULES FOR TWO
EXISTING POOLS, CHAVES AND LEA
COUNTIES, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 13, 1970,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 18th day of June, 1970, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

(1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.

(2) That the applicant, Jack L. McClellan, is the owner
and operator of certain wells in and near the Double L-Queen and
Sulimar-Queen Pools, Chaves and Lea County, New Mexico.

(3) That the applicant seeks the creation of a new gas pool
for Queen production in Chaves County, New Mexico, comprising the

CASE No. 4352
Order No. R-3981

following-described acreage:

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM

Section 11: SE/4
Section 12: SW/4
Section 13: NW/4
Section 14: E/2
Section 23: NE/4 and SW/4

(4) That in the event the Commission finds a new gas pool has not been discovered, applicant seeks, as an alternative, the promulgation of special rules for said Sulimar-Queen and Double L-Queen Pools as separate or as consolidated pools, including provisions for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and an allocation formula for withdrawals by oil and gas wells.

(5) That the evidence presently available indicates that the Jack L. McClellan Lisa "B" Federal Well No. 1, located 660 feet from the North line and 660 feet from the West line of Section 13, Township 15 South, Range 29 East, NMPM, Chaves County, New Mexico, having its top perforations at 1959 feet, has discovered a separate common source of supply which should be designated the Suble-Queen Gas Pool; that the vertical limits of said pool should be the Queen formation; and that the horizontal limits of said pool should be the SW/4 of Section 12, and the NW/4 of Section 13, Township 15 South, Range 29 East, NMPM, Chaves County, New Mexico.

(6) That if the casinghead gas from said Sulimar-Queen and Double L-Queen Pools is not being marketed at the end of 90 days from the date of this order, the Commission should on its own motion set a hearing to permit all operators in said pools to appear and show cause why the venting or flaring of said casinghead gas should not be prohibited.

IT IS THEREFORE ORDERED:

(1) That a new pool in Chaves County, New Mexico, classified as a gas pool for Queen production, is hereby created and designated as the Suble-Queen Gas Pool, with vertical limits comprising the Queen formation, and the horizontal limits consisting of the

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CASE No. 4352
Order No. R-3981

following-described area:

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM
Section 12: SW/4
Section 13: NW/4

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

ALEX J. ARMIJO, Member

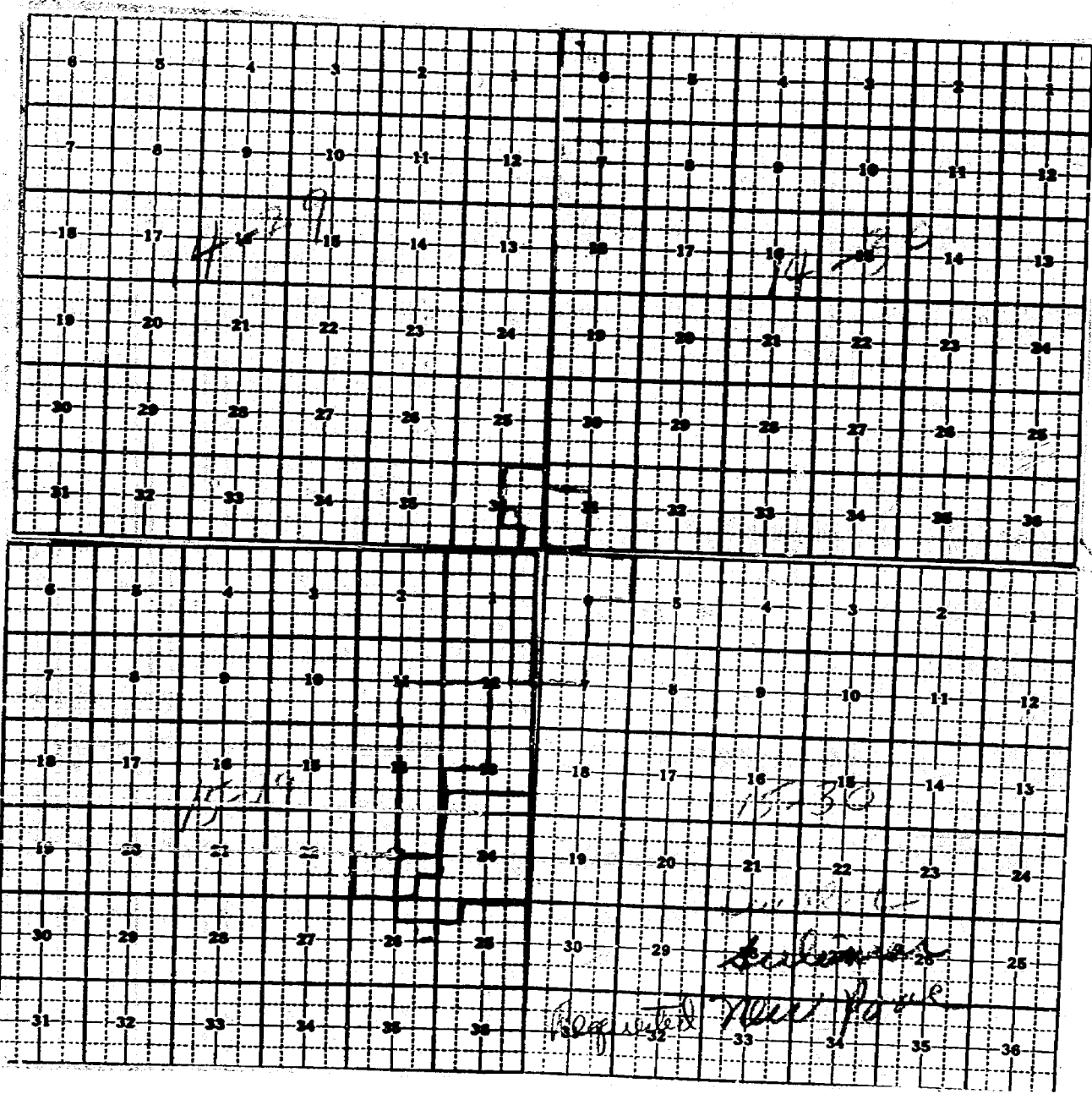
A. L. PORTER, Jr., Member & Secretary

S E A L

esr/

Pan American Petroleum Corp. has made a subsurface study of the area in question. Based on geological data available at this time you can not conclusively separate McEllan's Patrick Fed. gas well from the Double L Green Oil Pool. However, we have also examined pressure interference data gathered by McEllan. These pressure data conclusively show that the Patrick Federal Gas well is not in pressure communication ~~at this~~ with the nearest oil well in the Double L Pool.

In view of this, as well as the critical need for a gas market in this area, I am recommending that a separate gas pool be established as recommended by McEllan. The operators in the pool, and the Commission, can closely watch subsequent developments and thus determine if any future change is needed.



DOCKET: EXAMINER HEARING - WEDNESDAY - MAY 19, 1971

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Daniel S. Nutter, Examiner or
Elvis A. Utz, Alternate Examiner:

- ALLOWABLE: (1) Consideration of the allowable production of gas for June, 1971, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico; also presentation of purchaser's nominations for said pools for the six-month period beginning July 1, 1971;
- (2) Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico, for June, 1971.

CASE 4352 (Reopened): (Continued from April 14 and April 28, 1971 Examiner Hearings)

In the matter of Case 4352 being reopened by the Oil Conservation Commission upon its own motion to give all interested persons an opportunity to appear and present evidence to whether the Double L-Queen and Suble-Queen Pools, Chaves County, New Mexico, are in fact separate reservoirs or one common reservoir. Further, in the event it is found that the two pools comprise one common reservoir, the Commission will consider the adoption of special rules and regulations to provide for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and an allocation formula for withdrawals from the gas wells and oil wells.

CASE 4535:

(Continued from the April 28, 1971 Examiner Hearing)

Application of Continental Oil Company for down-hole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Monument-Tubb and Weir Drinkard oil production in the well-bore of its SEMU Well No. 70, located in Unit I of Section 15, Township 20 South, Range 37 East, Lea County, New Mexico.

CASE 4536:

Application of Eastland Oil Company for an exception to Order No. R-3221, as amended, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, to dispose into unlined surface pits water produced by three wells in the Power Grayburg-San Andres Pool, Eddy County, New Mexico, as follows:

(Case 4536 continued)

TOWNSHIP 17 SOUTH, RANGE 31 EAST

Allied State Well No. 1 - SW/4 SW/4
Section 32

TOWNSHIP 18 SOUTH, RANGE 31 EAST

Kenwood Federal Well No. 1 - NE/4 NW/4
Section 6
Kenwood Federal Well No. 3 - NW/4 NW/4
Section 6

CASE 4537: Application of Union Oil Company of California for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt into the Devonian formation in the perforated interval from 11,680 feet to 11,690 feet in its South Vacuum Unit Well No. 2-35 located in Unit I of Section 35, Township 18 South, Range 35 East, South Vacuum-Devonian Pool, Lea County, New Mexico.

CASE 4538: Application of Jack F. Grimm Oil Company for an unorthodox oil well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 104 C I of the Commission Rules and Regulations to drill a well at an unorthodox location 880 feet from the South line and 1500 feet from the West line of Section 20, Township 11 South, Range 29 East, White Ranch Siluro-Devonian Pool, Chaves County, New Mexico.

CASE 4539: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Doanbuy Lease & Company, Inc., and all other interested persons to appear and show cause why its following described wells in Section 27, Township 14 South, Range 33 East, Saunders Pool, Lea County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program:

Atlantic State AC - 1	Well No. 1	Unit N
Atlantic State AC - 2	Well No. 2	Unit M
Atlantic State AC - 2	Well No. 3	Unit O
Atlantic State AC - 3	Well No. 4	Unit L
Atlantic State AC - 3	Well No. 5	Unit J
Atlantic State AC - 4	Well No. 6	Unit F
Atlantic State AC - 4	Well No. 7	Unit I

Examiner Hearing - May 19, 1971

Docket No. 10-71

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CASE 4540: Application of Mountain States Petroleum Corporation for re-delineation of certain pools, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the contraction of the Atoka-Pennsylvanian Gas Pool by the deletion of the W/2 of Section 19, Township 18 South, Range 26 East, Eddy County, New Mexico, and the extension of the West Atoka-Morrow Gas Pool to include the W/2 of Sections 18 and 19, said Township and Range.

CASE 4541: Application of Tenneco Oil Company for gas injection, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks authority to inject casinghead gas produced by certain wells located in the Lone Pine-Dakota "D" Pool, McKinley County, New Mexico, into the Dakota A zone through perforations from 2547 feet to 2562 feet in its Santa Fe Pacific Railroad Well No. 2 located in the NW/4 SW/4 of Section 13, Township 17 North, Range 9 West, South Hospah Field. The gas is to be injected for storage purposes awaiting the institution of a pressure maintenance project in the Lone Pine-Dakota "D" Pool.

CASE 4542: In the matter of the application of the Oil Conservation Commission of New Mexico upon its own motion for an order for the creation of the following pool:

West Warren-Blinbry Pool in
Township 20 South, Range 38
East, Lea County;

and for the extension of the following pools in Lea County;

South Corbin-Morrow Gas Pool
Maljamar Grayburg-San Andres Pool
Vacuum-Abo Reef Pool
Warren-Drinkard Pool
Vada-Pennsylvanian Pool

and for the extension of the following pools in Eddy County:

Atoka-San Andres Pool
South Carlsbad-Morrow Gas Pool
Eagle Creek-San Andres Pool

and for the extension of the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County.

DOCKET No. 8-71

DOCKET: REGULAR HEARING - WEDNESDAY - APRIL 14, 1971

OIL CONSERVATION COMMISSION - 9 A.M. - THE HOLIDAY INN, 200 SOUTH LINAM,
HOBBS, NEW MEXICO

- ALLOWABLE: (1) Consideration of the oil allowable for May and June, 1971;
- (2) Consideration of the allowable production of gas for May, 1971, from fifteen prorated pools in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico, for May, 1971.

CASE 4487 (De Novo):

Application of Pennzoil United, Inc., for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Strawn formation underlying the W/2 of Section 6, Township 23 South, Range 27 East, South Carlsbad-Strawn Gas Pool, Eddy County, New Mexico, said acreage to be dedicated to the Morris R. Antweil Joell Well No. 1 located 660 feet from the North line and 1980 feet from the West line of said Section 6. Also to be considered will be the cost of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

Upon application of Pennzoil United, Inc., this case will be heard De Novo under the provisions of Rule 1220.

THE FOLLOWING CASES WILL BE HEARD BEFORE THE FULL COMMISSION OR
BY EXAMINER DANIEL S. NUTTER.

CASE 4352 (Reopened): (This case will be continued to the April 28, 1971, Examiner Hearing.)

In the matter of Case 4352 being reopened by the Oil Conservation Commission upon its own motion to give all interested persons

CASE 4352 (Reopened):

(Continued from Page 1)

an opportunity to appear and present evidence as to whether the Double L-Queen and Suble-Queen Pools, Chaves County, New Mexico, are in fact separate reservoirs or one common reservoir. Further, in the event it is found that the two pools comprise one common reservoir, the Commission will consider the adoption of special rules and regulations to provide for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and an allocation formula for withdrawals from the gas wells and oil wells.

CASE 4520: Application of Shenandoah Oil Corporation for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Artesia Pool by the injection of water into the Grayburg formation through nine wells located in Sections 25 and 36 of Township 17 South, Range 28 East and Sections 30 and 31 of Township 17 South, Range 29 East, Eddy County, New Mexico. Applicant further seeks a procedure whereby additional injection wells may be approved administratively.

CASE 4521: Application of Shenandoah Oil Corporation for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Grayburg-Jackson Pool by the injection of water into the Grayburg and San Andres formations through three wells located in Sections 15 and 22 of Township 17 South, Range 30 East, Eddy County, New Mexico. Applicant further seeks a procedure whereby additional injection wells may be approved administratively.

CASE 4522: Southeastern New Mexico nomenclature case calling for the creation of a new pool, the assignment of oil discovery allowable, and the extension of certain pools in Lea and Chaves Counties, New Mexico:

(a) Create a new pool in Chaves County, New Mexico, classified as an oil pool for Queen production and

CASE 4522:

(Continued from Page 2)

and designated as the Vest Ranch-Queen Pool comprising the following:

TOWNSHIP 14 SOUTH, RANGE 30 EAST, NMPM
Section 28: NE/4

Further, for the assignment of approximately 10,710 barrels of oil discovery allowable to the discovery well, the Jack F. Grimm Federal 28 Well No. 1, located in Unit G of said Section 28.

(b) Extend the Allison-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 36 EAST, NMPM
Section 3: S/2 SE/4

(c) Extend the Flying M-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 33 EAST, NMPM
Section 9: S/2

(d) Extend the North Vacuum-Abo Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
Section 10: SE/4
Section 12: NW/4

DOCKET No. 12-70

DOCKET: REGULAR HEARING - WEDNESDAY - MAY 13, 1970

OIL CONSERVATION COMMISSION - 9 A.M. - MORGAN HALL, STATE LAND OFFICE
BUILDING, SANTA FE, NEW MEXICO

- ALLOWABLE: (1) Consideration of the oil allowable for June, 1970;
- (2) Consideration of the allowable production of gas for June, 1970, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico; also presentation of purchaser's nominations for said pools for the six-month period beginning July 1, 1970; consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico, for June, 1970.

THE FOLLOWING CASES WILL BE HEARD BEFORE DANIEL S. NUTTER,
EXAMINER, OR ELVIS A. UTZ, ALTERNATE EXAMINER:

CASE 4354: Application of Michael P. Grace and Corinne Grace for compulsory pooling, Eddy County, New Mexico. Applicants, in the above-styled cause, seek an order pooling all mineral interests from the surface of the ground down to and including the Morrow formation underlying the N/2 of Section 11, Township 23 South, Range 26 East, South Carlsbad Field, Eddy County, New Mexico, said acreage to be dedicated to a well to be drilled in either the NE/4 NW/4 or the NW/4 NE/4 of said Section 11. Also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4355: Application of Pan American Petroleum Corporation for pool consolidation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the consolidation of the North Bagley-Upper Pennsylvanian and North Bagley-Lower Pennsylvanian Pools, Lea County, New Mexico, into one pool. Applicant further requests the Lower Pennsylvanian Allowable Factor be applied to the consolidated pool.

CASE 3727 (Reopened):

In the matter of Case 3727 being reopened pursuant to the provisions of Order No. R-3428, which order established 640-acre spacing units for the Rock Tank-Upper Morrow and Rock Tank-Lower Morrow Gas Pools, Eddy County, New Mexico, for a period of one year after first pipeline connection in either of the pools. All interested persons may appear and show cause why said pools should not be developed on 320-acre spacing units.

CASE 4356: Southeastern nomenclature case calling for an order for the creation, abolishment, extension and contraction of certain pools in Lea, Eddy, Chaves and Roosevelt Counties, New Mexico.

(a) Create a new pool in Lea County, New Mexico, classified as a gas pool for Morrow production and designated as the Baum-Morrow Gas Pool. The discovery well is the RK Petroleum Corporation State No. 1 located in Unit B of Section 27, Township 13 South, Range 32 East, NMPM. Said pool would comprise:

TOWNSHIP 13 SOUTH, RANGE 32 EAST, NMPM
SECTION 27: N/2

(b) Create a new pool in Lea County, New Mexico, classified as a gas pool for Queen-Penrose production and designated as the East Querecho Plains-Queen Gas Pool. The discovery well is Robert N. Enfield's Hudson Federal No. 1 located in Unit O of Section 30, Township 18 South, Range 33 East, NMPM.

TOWNSHIP 18 SOUTH, RANGE 33 EAST, NMPM
SECTION 30: SE/4

(c) Abolish the Bluit-San Andres Pool in Roosevelt County, New Mexico, described as:

TOWNSHIP 8 SOUTH, RANGE 38 EAST, NMPM
SECTION 7: All
SECTION 8: All
SECTION 17: All
SECTION 18: All

(d) Extend the Bluit-San Andres Associated Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 38 EAST, NMPM
SECTION 8: S/2
SECTION 17: W/2

(e) Contract the Bagley-Pennsylvanian Pool in Lea County, New Mexico, by the deletion of the following described area:

TOWNSHIP 12 SOUTH, RANGE 33 EAST, NMPM
SECTION 4: NE/4

Regular Hearing - May 13, 1970

Docket Nos. 12-70

-3-0V-SI FOR JORDON

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(Case 4356 continued)

Extend the North Bagley-Upper Pennsylvanian Pool in Lea County, New Mexico, to include therein:

(f) Extend the North Bagley-Upper Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM

SECTION 33: E/2

TOWNSHIP 12 SOUTH, RANGE 33 EAST, NMPM

SECTION 4: NE/4

(g) Extend the Cerca-Upper Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 13 SOUTH, RANGE 34 EAST, NMPM

SECTION 34: NW/4

TOWNSHIP 14 SOUTH, RANGE 34 EAST, NMPM

SECTION 8: NW/4

(h) Extend the Double L-Queen Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM

SECTION 12: E/2 NE/4

(i) Extend the Hobbs-Blinebry Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 38 EAST, NMPM

SECTION 33: NE/4

(j) Extend the Lea-Bone Springs Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 34 EAST, NMPM

SECTION 35: SE/4

TOWNSHIP 20 SOUTH, RANGE 34 EAST, NMPM

SECTION 2: E/2

(k) Extend the Rock Tank-Lower Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 24 EAST, NMPM

SECTION 12: All

Regular Hearing - May 13, 1970

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Docket No. 12-70

(l) Extend the Rock Tank-Upper Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 24 EAST, NMPM
SECTION 12: All

(m) Extend the Tulk-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 32 EAST, NMPM
SECTION 34: NE/4

(n) Extend the Tulk-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 15 SOUTH, RANGE 32 EAST, NMPM
SECTION 9: NE/4

CASE 4301: (Continued from the March 25, 1970, Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Robert T. Smith and all other interested persons to appear and show cause why the following Robert T. Smith wells located in Section 32, Township 20 North, Range 9 West, McKinley County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program:

State Well No. 1 located 487 feet from the North line and 990 feet from the East line;

State "A" Well No. 1 located 400 feet from the North line and 990 feet from the East line;

State Well No. 3 located 330 feet from the North line and 330 feet from the West line;

State Well No. 6 located 220 feet from the North line and 1485 feet from the East line;

State Well No. 6-Y located approximately 5 feet West of the above-described Well No 6;

State Well No. 8 located 1155 feet from the North line and 2475 feet from the East line.

- CASE 4337:** (Continued from the April 15, 1970, Examiner Hearing)
Application of Petroleum Corporation of Texas for an exception to Order No. R-3221, as amended, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico. Said exception would be for applicant's Dexter Hanagan Graridge Federal Well No. 1 located in Unit J, Section 22, Township 17 South, Range 30 East, Jackson-Abo Pool, Eddy County, New Mexico. Applicant seeks authority to dispose of salt water produced by said well in an unlined surface pit in the vicinity of said well.
- CASE 4336:** (Continued from the April 15, 1970, Examiner Hearing)
Application of Byron McKnight for an exception to Order No. R-3221, as amended, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil or gas on the surface of the ground in Lea, Eddy, Chaves and Roosevelt Counties. Said exception would be for applicant's lease comprising all of Section 19, W/2 of Section 20, NW/4 Section 29, and NW/4 Section 30, Township 19 South, Range 34 East, undesignated Yates-Seven Rivers gas pool, Lea County, New Mexico. Applicant seeks authority to dispose of salt water produced by wells on said leases in unlined surface pits on the leases.
- CASE 4084:** (Reopened) (Continued from the April 15, 1970, Examiner Hearing).
In the matter of Case No. 4084 being reopened pursuant to the provisions of Order No. R-3732, which order established 160-acre spacing units and an 80-acre proportional factor of 4.77 for the Feather-Wolfcamp Pool, Lea County, New Mexico. All interested parties may appear and show cause why the said pool should not be developed on less than 160-acre spacing units and to show cause why the 80-acre proportional factor of 4.77 should or should not be retained.

CASE 4351: (Continued from the April 29, 1970, Examiner Hearing)
Application of Humble Oil & Refining Company for well reclassification and simultaneous dedication of acreage, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the reclassification of its New Mexico "G" State Well No. 5 from an oil well in the Eumont Pool to a gas well in said pool. Applicant further seeks the dedication of a standard 640-acre gas proration unit comprising all of Section 23, Township 21 South, Range 36 East, Lea County, New Mexico, to said Well No. 5 and to applicant's New Mexico "G" State Well No. 9, located, respectively in Units E and G of said Section 23, and authority to produce the allowable assigned to said unit from either of said wells in any proportion.

CASE 4352: (Continued from the April 29, 1970, Examiner Hearing)
Application of Jack L. McClellan for the creation of a new gas pool or, in the alternative, the establishment of pool rules for two existing pools, Chaves and Lea Counties, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Queen gas pool comprising the following-described acreage:

CHAVES COUNTY, NEW MEXICO

TOWNSHIP 15 SOUTH, RANGE 29 EAST

Section 11: SE/4
Section 12: SW/4
Section 13: NW/4
Section 14: E/2
Section 23: NE/4 and SW/4

In the alternative applicant seeks the promulgation of special rules for the Sulimar-Queen Pool, Chaves County, and Double L-Queen Pool, Chaves and Lea Counties, New Mexico, as separate or as consolidated pools, including provisions for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and an allocation formula for withdrawals by oil wells and gas wells.



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

GOVERNOR
DAVID P. CARGO
CHAIRMAN

LAND COMMISSIONER
ALEX A. ARMijo
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

June 19, 1970

DOCKET MAILED

Mr. Jason Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

DOCKET MAILED

Date 5-6-71

DOCKET MAILED

Date 4-2-71

Re: Case No. 4352

Order No. R-3981

Applicant:

Jack L. McClellan

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x

Artesia OCC x

Astec OCC

Other Mr. Clarence Hinkle

Copy of docket sent to:

Amoco Production Co.
Ft. Worth

Dalport Oil Corp.
Corpus Christi, Texas

Corinne Grace
Box 2062
c/o Dorothy Harvey
Santa Fe, N. M.

Humble
Midland

DOCKET MAILED

Jack McClellan
Roswell

Date 5-6-71

Tom Schneider
Midland

Docket Mailed
4-2-71

Docket No. 11-70

DOCKET: EXAMINER HEARING - WEDNESDAY - APRIL 29, 1970

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 4340: Application of Tesoro Petroleum Corporation for three waterflood projects and unorthodox injection well locations, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute three waterflood projects in the South Hospah Upper Sand Oil Pool by the injection of water through nine injection wells to be drilled at unorthodox locations in Section 1, Township 17 North, Range 9 West, and in Sections 6 and 7, Township 17 North, Range 8 West, McKinley County, New Mexico. Applicant further seeks a procedure whereby additional injection wells and producing wells at unorthodox locations within the project areas may be approved administratively.

CASE 4341: Application of Pan American Petroleum Corporation for two non-standard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of two non-standard gas proration units for its State "C" Tract 13 Well No. 5, a dual completion, located 1980 feet from the North line and 660 feet from the West line of Section 36, Township 21 South, Range 37 East, Lea County, New Mexico, said units to be comprised as follows:

Blinebry Gas Pool - 240 acres - NW/4 and W/2
NE/4

Tubb Gas Pool - 200 acres - W/2 NW/4, NE/4
NW/4 and W/2 NE/4

CASE 4342: Application of Dearing, Wright, Gibbins, and Church, doing business as New Mexico Petroleum Company, for authority to operate an oil treating plant, Lea County, New Mexico. Applicants, in the above-styled cause, seek authority to install and operate a chemical and heating process oil treating plant in the vicinity of Tatum, New Mexico, for the reclamation of sediment oil to be obtained from tank bottoms, waste pits, and drip tanks.

- CASE 4343: Application of Texaco Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation in the perforated and open-hole interval from 11,194 feet to 11,278 feet in its New Mexico "BB" State (NCT-1) Well No. 2 located in Unit N of Section 11, Township 12 South, Range 32 East, East Caprock-Devonian Pool, Lea County, New Mexico.
- CASE 4344: Application of Texaco Inc. for salt water disposal, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation in the open-hole interval from 11,230 feet to 11,503 feet in its B. E. Spencer "B" Federal Well No. 1 located in Unit D of Section 28, Township 15 South, Range 30 East, Little Lucky Lake-Devonian Pool, Chaves County, New Mexico.
- CASE 4345: Application of Yates Drilling Company for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Seven Rivers and possibly other formations in the open-hole interval from 68 feet to 100 feet in its Galvin Well No. 8 and from 68 feet to 90 feet in its Galvin Well No. 14, both located in Unit N of Section 12, Township 20 South, Range 26 East, West McMillan-Seven Rivers Pool, Eddy County, New Mexico.
- CASE 4346: Application of Yates Drilling Company for a pressure maintenance expansion and promulgation of rules therefor, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand the S. P. Yates West McMillan Anderson Pressure Maintenance Project in the West McMillan Seven Rivers-Queen Pool, Eddy County, New Mexico, authorized by Order No. R-3852, by the conversion to water injection of two additional wells located in Units O and P, Section 11, Township 20 South, Range 26 East. Applicant further seeks the designation of a project area, promulgation of rules governing said project, and a procedure whereby other methods of flooding in the subject project may be authorized administratively.
- CASE 4347: Application of Yates Drilling Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Yates North Vacuum (San Andres) Unit Area comprising 800 acres, more or less, of State lands in Sections 1, 2, 11, and 12, Township 17 South, Range 34 East, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico.

April 29, 1970 - Examiner Hearing

-3-

Docket No. 11-70

CASE 4348: Application of Yates Drilling Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its North Vacuum (San Andres) Unit Area by the injection of water into the San Andres formation through 9 wells located in Sections 1, 2, 11, and 12, Township 17 South, Range 34 East, Vacuum Grayburg, San Andres Pool, Lea County, New Mexico. Applicant further seeks a procedure whereby said project may be expanded administratively without a showing of well response.

CASE 4349: Application of Tenneco Oil Company for a waterflood expansion and unorthodox injection well locations, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks to expand the waterflood project in its South Hospah Unit Area by the injection of water into the South Hospah Upper Sand Oil Pool, McKinley County, New Mexico, through two additional injection wells at unorthodox locations in Section 12, Township 17 North, Range 9 West, as follows:

Unit Well No. 41 - 5 feet from the North line and 1650 feet from the East line;

Unit Well No. 42 - 3000 from the North line and 5 feet from the East line.

CASE 4350: Application of Cities Service Oil Company for an exception to Order No. R-3221, as amended, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico. Said exception would be for applicant's Snyder Federal lease comprising the S/2 NE/4 and N/2 SE/4 of Section 26, Township 15 South, Range 29 East, Sulimar-Queen Pool, Chaves County, New Mexico. Applicant seeks authority to dispose of salt water produced by wells on said lease in an unlined surface pit located in Unit H of said Section 26.

CASE 4351: Application of Humble Oil & Refining Company for well reclassification and simultaneous dedication of acreage, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the reclassification of its New Mexico "G" State Well No. 5 from an oil well in the Eumont Pool to a gas well in said pool. Applicant further seeks the dedication of a standard 640-acre gas proration unit comprising all of Section 23, Township 21 South, Range 36 East, Lea County, New Mexico, to said Well No. 5 and to applicant's New Mexico "G" State Well No. 9,

located, respectively in Units E and G of said Section 23, and authority to produce the allowable assigned to said unit from either of said wells in any proportion.

CASE 4352:

Application of Jack L. McClellan for the creation of a new gas pool or, in the alternative, the establishment of pool rules for two existing pools, Chaves and Lea Counties, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Queen gas pool comprising the following-described acreage:

CHAVES COUNTY, NEW MEXICO

Township 15 South, Range 29 East

Section 11: SE/4

Section 12: SW/4

Section 13: NW/4

Section 14: E/2

Section 23: NE/4 and SW/4

In the alternative applicant seeks the promulgation of special rules for the Sulimar-Queen Pool, Chaves County, and Double L-Queen Pool, Chaves and Lea Counties, New Mexico, as separate or as consolidated pools, including provisions for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and an allocation formula for withdrawals by oil wells and gas wells.

CASE 4353:

Application of Lone Star Producing Company for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Tres Papalotes-Pennsylvanian Pool, Lea County, New Mexico, including a provision for 160-acre spacing and proration units.

POST OFFICE BOX 869 • ALBUQUERQUE, NEW MEXICO 87103 • TELEPHONE (505) 842-1940

ALBU
DEC 18 1970
file - Case 4352

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Re: Casinghead Gas Sales
Sulimar-Federal #1, NE NE Sec.
26 & Sulimar-Federal #2, NW NE
Sec. 26-15S-29E, Chaves County,
New Mexico - Sulimar Queen Field

Gentlemen:

In regard to your Order No. R-4070, prohibiting flaring of casinghead gas, this is to advise you that Pubco and Phillips Petroleum Corporation have entered into a contract for the sale of casinghead gas from the subject wells. We understand that Phillips has staked and obtained right-of-way for their pipeline into the Sulimar Field, and is currently obtaining bids for the installation of this pipeline. We expect that this pipeline and the well connection will be completed on or about January 1, 1971, and that flaring of casinghead gas from the subject wells will be eliminated as of the connection date.

Sincerely,

Charles E. Ramsey, Jr.
Charles E. Ramsey, Jr.
Manager, Engineering & Evaluation

CERJr:cm

cc: Mr. Joe Ramey
P. O. Box 1980
Hobbs, New Mexico 88240

CASE 4352 (REOPENED) -

THE MEMORANDUM TO ALL OPERATORS IN THE DOUBLE L-QUEEN
AND SUBLE-QUEEN POOLS IN CHAVES COUNTY, NEW MEXICO, WAS
SENT TO THE FOLLOWING ON MAY 19, 1971:

AMOCO PRODUCTION COMPANY
HOBBS, NEW MEXICO - Attn: Mr. Staley

HUMBLE OIL & REFINING COMPANY
MIDLAND, TEXAS - ATTN: Harley Reavis

DALPORT OIL CORPORATION
CORPUS CHRISTI, TEXAS - Attn: Mr. Leon Lampert

CORINNE & MICHAEL GRACE
SANTA FE, NEW MEXICO

MR. JACK McCLELLAND
814 PETROLEUM BLDG.
ROSWELL, N. M.

MR. TOM SCHNEIDER
406 N. MARIENFELD
MIDLAND, TEXAS

U. S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

MR. BILL GRESSETT
OIL CONSERVATION COMMISSION
ARTESIA, NEW MEXICO

DUCKETT M-4100

Date

6-15-71

For June 30th
hearing



OIL CONSERVATION COMMISSION

**STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501**

**GOVERNOR
BRUCE KING
CHAIRMAN**

**LAND COMMISSIONER
ALEX J. ARMJO
MEMBER**

**STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR**

MAY 19, 1971

M E M O R A N D U M

**TO: ALL OPERATORS IN THE DOUBLE L-QUEEN AND
SUBLE-QUEEN POOLS, CHAVES COUNTY**

FROM: A. L. PORTER, Jr., SECRETARY-DIRECTOR

SUBJECT: CASE 4352 (REOPENED)

The above-referenced case has been continued to the examiner hearing to be held at 9:00 a.m. on June 30, 1971, in the Oil Conservation Commission Conference Room, State Land Office Building, Santa Fe, New Mexico.

ALP/ir

Docket No. 13-70

DOCKET: EXAMINER HEARING - WEDNESDAY - MAY 27, 1970

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

- CASE 4357: Application of Stallworth Oil & Gas for an unorthodox oil well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill an infill producing oil well at an unorthodox location, 1315 feet from the South and East lines of Section 25, Township 16 South, Range 30 East, in its Square Lake Grayburg-San Andres Waterflood Project, Eddy County, New Mexico.
- CASE 4358: Application of Union Oil Company of California for a non-standard gas proration unit and unorthodox location, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 240-acre non-standard gas proration unit comprising the NE/4 and E/2 SE/4 of Section 18, Township 8 South, Range 38 East, Bluit-San Andres Associated Pool, Roosevelt County, New Mexico, to be dedicated to its Federal 18 Well No. 2 at an unorthodox location 660 feet from the South and East lines of said Section 18. Applicant further requests that the allowable assigned to the subject well be effective as of May 1, 1970.
- CASE 4359: Application of Pan American Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a gas well at an unorthodox location 1650 feet from the South line and 990 feet from the West line of Section 22, Township 18 South, Range 26 East, Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico.
- CASE 4360: Application of Pan American Petroleum Corporation to directionally drill, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to locate its Byers "A" Well No. 30 at a point 663 feet from the North line and 1935 feet from the West line of Section 3, Township 19 South, Range 38 East, Hobbs, (Grayburg-San Andres) Pool, Lea County, New Mexico, and directionally drill said well to a bottom-hole location 330 feet from the North line and 1650 feet from the West line of said Section 3.
- CASE 4341: (Continued from the April 29, 1970, Examiner Hearing)
Application of Pan American Petroleum Corporation for two non-standard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of two non-standard

(Case 4341 continued)

gas proration units for its State "C" Tract 13 Well No. 5, a dual completion, located 1980 feet from the North line and 660 feet from the West line of Section 36, Township 31 South, Range 37 East, Lea County, New Mexico, said units to be comprised as follows:

Blinebry Gas Pool - 240 acres - NW/4
and W/2 NE/4

Tubb Gas Pool - 200 acres - W/2 NW/4,
NE/4 NW/4 and W/2 NE/4

CASE 4361: Application of Read & Stevens for an unorthodox gas well location, Chaves County, New Mexico. Applicants, in the above-styled cause, seek authority to drill a gas well at an unorthodox location 990 feet from the South and West lines of Section 6, Township 15 South, Range 28 East, Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico, to be dedicated to a gas proration unit comprising the W/2 of said Section 6.

CASE 4362: Application of William J. LeMay for a non-standard gas proration unit or compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for a 318.9-acre non-standard gas proration unit comprising Lots 1, 2 and the E/2 NW/4, and NE/4 of Section 7, Township 20 South, Range 25 East, Dagger Draw-Morrow Gas Pool, Eddy County, New Mexico, or a 478-acre non-standard unit comprising Lots 1, 2, 3, and 4, and the E/2 W/2, and NE/4 of said Section 7. In the alternative, applicant seeks an order pooling all mineral interests from the surface of the ground down to and including the Morrow formation underlying said Section 7. The acreage in the above proposals is to be dedicated to a well 1650 feet from the North and West lines of said Section 7 which is to be re-entered.

CASE 4352: (Continued from the May 13, 1970, Examiner Hearing)
Application of Jack L. McClellan for the creation of a new gas pool or, in the alternative, the establishment of pool rules for two existing pools, Chaves and Lea Counties, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Queen gas pool comprising the following-described acreage:

CHAVES COUNTY, NEW MEXICO

Township 15 South, Range 29 East
Section 11: SE/4

Examiner Hearing - May 27, 1970

-3-

Docket No. 13-70

(Case 4352 continued)

CHAVES COUNTY, NEW MEXICO

Township 15 South, Range 29 East

Section 12: SW/4

Section 13: NW/4

Section 14: E/2

Section 23: NE/4 and SW/4

In the alternative applicant seeks the promulgation of special rules for the Sulimar-Queen Pool, Chaves County, and Double L-Queen Pool, Chaves and Lea Counties, New Mexico, as separate or as consolidated pools, including provisions for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and an allocation formula for withdrawals by oil wells and gas wells.



western union

Telegram

KA197 N3A440

NS NDA106 PB PD=MIDLAND TEX 26 445P CDT=

120 MAY 26 PM 5 10

NEW MEXICO OIL CONSERVATION, OIL COMM=

STATE LAND OFFICE BLDG SANTIAGO NMEX=

REGARDING CASE #4352 SET FOR EXAMINER HEARING WEDNESDAY
MAY 27, 1970 AMERADA DEYN AMERADA HESS CORP AS AN OFF SET
LESSEE IS OPPOSED TO THE CREATION OF A NEW QUEEN GAS POOL
AS SOUGHT BY APPLICANT IN ABOVE CASE AND RECOMMENDS THAT
THE MCCLELLAN LISA FEDERAL AND PATRICA FEDERAL WELLS BE
PLACED IN THE DOUBLE L QUEEN POOL.

WE SUPPORT THE CLASSIFICATION OF BOTH THE DOUBLE L
AND SULINAR QUEEN POOL AS ASSOCIATED OIL AND GAS.

WU 1201 (R 5-69)



western union

Telegram

(446)

RESERVOIRS AND RECOMMEND THAT ALLOWABLES BE DETERMINED
ON AN EQUIVALENT VOIDAGE BASIS.

B Q GRIFFIN AMERADA HESS CORP==

#4352 27 1970 L=

WU 1201 (R 5-69)

SUITE 814
PETROLEUM BUILDING

JACK L. MCCLELLAN
GEOLOGIST AND OIL PRODUCER
P. O. BOX 848
ROSWELL, NEW MEXICO 88201

805 622-3200 OFFICE
805 622-4076 HOME

April 22, 1970

Attention Operators in Sulimar and Double "L" Fields

Subject: I have applied for and received a hearing by the New Mexico Oil Conservation Commission to establish a Gas Pool in this area. The hearing is scheduled for April 29, 1970, being Case No. 4352. Situations have arisen that have caused me to ask for a continuance of this hearing to May 13, 1970.

This memorandum is to prevent any of you appearing unnecessarily at Santa Fe on this date and therefore prevent wasted effort.

Trust this has not inconvenienced anyone, but was necessary due to circumstances beyond my control.

Respectfully yours,

Jack L. McClellan
Jack L. McClellan

JLM:ct
cc: Humble Oil & Refining
Natural Gas Pipeline
Cities Service
Pan American
Pubco
Michael P. Grace
Continental Oil Co.
OCC
Jason Kellahin
Dalport Oil Corp.

*file in
case 4352*

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF CASE 4352 BEING REOPENED
BY THE OIL CONSERVATION COMMISSION UPON
ITS OWN MOTION TO GIVE ALL INTERESTED
PERSONS AN OPPORTUNITY TO APPEAR AND
PRESENT EVIDENCE TO WHETHER THE DOUBLE
L-QUEEN AND SUBLE-QUEEN POOLS, CHAVES
COUNTY, NEW MEXICO, ARE IN FACT SEPARATE
RESERVOIRS OR ONE COMMON RESERVOIR.

CASE NO. 4352
Order No. R-3981-A

NOMENCLATURE

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on June 30, 1971,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 3rd day of August, 1971, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

(1) That due public notice having been given as required
by law, the Commission has jurisdiction of this cause and the
subject matter thereof.

(2) That Order No. R-3802, dated August 1, 1969, created
the Double L-Queen Pool, Chaves County, New Mexico.

(3) That Order No. R-3981, dated June 18, 1970, issued
in Case No. 4352, created the Suble-Queen Gas Pool, Chaves
County, New Mexico.

(4) That Case No. 4352 was reopened by the Oil Conservation
Commission on its own motion to give all interested persons an
opportunity to appear and present evidence as to whether or not
the Double L-Queen Pool and Suble-Queen Gas Pool, Chaves County,
New Mexico, are in fact separate reservoirs or one common reser-
voir and, further, in the event it was found that the two pools
comprised one common reservoir, for the Commission to consider

-2-

CASE NO. 4352

Order No. R-3981-A

the adoption of special rules and regulations to provide for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and an allocation formula for withdrawal from the gas wells and oil wells.

(5) That the evidence establishes that the Suble-Queen Gas Pool is not a separate common source of supply but is an extension of the Double L-Queen Pool.

(6) That while the said Double L-Queen Pool is presently classified as an oil pool, the evidence adduced indicates it is, in fact, an associated oil and gas reservoir.

(7) That the Double L-Queen (Oil) Pool and the Suble-Queen Gas Pool should be abolished.

(8) That a new pool in Chaves County, New Mexico, classified as an associated pool for the production of oil and gas from the Queen formation and designated the Double L-Queen Associated Pool should be created and Special Rules and Regulations should be promulgated therefor.

(9) That the reservoir characteristics of the subject pool indicate that the gas area can be efficiently and economically drained and developed on 160-acre spacing, and that the oil area can be efficiently and economically drained and developed on 40-acre spacing.

(10) That the reservoir characteristics of the subject pool presently available justify the definition of a gas well as a well producing with a gas-liquid ratio of 30,000 or more cubic feet of gas per barrel of liquid hydrocarbons.

(11) That the reservoir characteristics of the subject pool presently available justify the establishment of a gas-liquid ratio limitation of 2000 cubic feet of gas per barrel of liquid hydrocarbons.

(12) That special rules and regulations providing for 160-acre gas well spacing and 40-acre oil well spacing should be promulgated for the subject pool in order to prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, prevent reduced recovery which might result from the drilling of too few wells, and otherwise prevent waste and protect correlative rights.

-3-

CASE NO. 4352
Order No. R-3981-A

(13) That the special rules and regulations should provide for the classification of a gas well as a well producing with a gas-liquid ratio of 30,000 or more cubic feet of gas per barrel of liquid hydrocarbons and should provide for a gas-liquid ratio of 2000 cubic feet of gas per barrel of liquid hydrocarbons in order to afford to the owner of each property in the pool the opportunity to produce his just and equitable share of the oil or gas, or both, and for this purpose to use his just and equitable share of the reservoir energy.

(14) That the temporary special rules and regulations should establish proration rules for gas wells in order to prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That effective September 1, 1971, the Double L-Queen (Oil) Pool and the Suble-Queen Gas Pool, both in Chaves County, New Mexico, are hereby abolished.

(2) That effective September 1, 1971, a new pool in Chaves County, New Mexico, classified as an associated pool for the production of oil and gas from the Queen formation, is hereby created and designated the Double L Queen Associated Pool, with vertical limits comprising the Queen formation and horizontal limits comprising the following-described area:

TOWNSHIP 14 SOUTH, RANGE 29 EAST, NMPM

Section 23: SE/4 SE/4

Section 24: SW/4 SW/4

Section 25: NW/4, E/2 SW/4, and SW/4 SE/4

Section 36: NE/4 NW/4, NE/4, W/2 SE/4, and SE/4 SE/4

TOWNSHIP 14 SOUTH, RANGE 30 EAST, NMPM

Section 31: S/2 NW/4 and S/2

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM

Section 1: E/2 E/2

Section 12: E/2 and SW/4

Section 13: NW/4

TOWNSHIP 15 SOUTH, RANGE 30 EAST, NMPM

Section 6: N/2 and SW/4

Section 7: W/2

..4..

CASE NO. 4352

Order No. R-5981-A

(3) That, effective September 1, 1971, Special Rules and Regulations for the Double L-Queen Associated Pool, Chaves County, New Mexico, are hereby promulgated as follows:

**SPECIAL RULES AND REGULATIONS
FOR THE
DOUBLE L-QUEEN ASSOCIATED POOL**

RULE 1. Each well completed or recompleted in the Double L-Queen Pool or in the Queen formation within one mile thereof, and not nearer to or within the limits of another designated Queen pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. (a) Each gas well shall be located on a standard unit containing 160 acres, more or less, substantially in the form of a square, which is a quarter section being a legal subdivision of the United States Public Land Surveys.

(b) Each oil well shall be located on a standard unit containing 40 acres, more or less, consisting of a governmental quarter-quarter section.

RULE 3. The Secretary-Director of the Commission may grant an exception to the requirements of Rule 2 (a) without notice and hearing when an application has been filed for a non-standard unit and the unorthodox size or shape of the unit is necessitated by a variation in the legal subdivision of the United States Public Land Surveys, or the following facts exist and the following provisions are complied with:

- (a) The non-standard unit consists of quarter-quarter sections or lots that are contiguous by a common bordering side.
- (b) The non-standard unit lies wholly within a governmental quarter section and contains less acreage than a standard unit.
- (c) The applicant presents written consent in the form of waivers from all offset operators and from all operators owning interests in the quarter section in which the non-standard unit is situated and which acreage is not included in said non-standard unit.

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CASE NO. 4352

Order No. R-3981-A

- (d) In lieu of paragraph (c) of this rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered or certified mail of his intent to form such non-standard unit. The Secretary-Director may approve the application if no such operator has entered an objection to the formation of such non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. Each well, oil or gas, shall be located no nearer than 330 feet to any quarter-quarter section line, except that any well drilled in a known gas productive area shall be located within 130 feet of the center of a quarter-quarter section.

RULE 5. A well shall be classified as a gas well if it has a gas-liquid ratio of 30,000 or more cubic feet of gas per barrel of liquid hydrocarbons. A well shall be classified as an oil well if it has a gas-liquid ratio of less than 30,000 cubic feet of gas per barrel of liquid hydrocarbons. The simultaneous dedication of any acreage to an oil well and a gas well is prohibited.

RULE 6. That the limiting gas-oil ratio shall be 2000 cubic feet of gas for each barrel of oil produced.

RULE 7. An oil well which has 40 acres dedicated to it shall be permitted to produce only that amount of gas determined by multiplying the top unit oil allowable for the pool by the limiting gas-liquid ratio for the pool. In the event there is more than one oil well on a 40-acre oil proration unit, the operator may produce the allowable assigned to the 40-acre unit from the wells on the unit in any proportion.

A gas well shall be permitted to produce that amount of gas obtained by multiplying the top unit oil allowable for the pool by the limiting gas-liquid ratio for the pool and by a fraction, the numerator of which is the number of acres dedicated to the particular gas well and the denominator of which is 40. In the event there is more than one gas well on a 160-acre gas proration unit, the operator may produce the amount of gas assigned to the unit from the wells on the unit in any proportion.

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CASE NO. 4352

Order No. R-3981-A

RULE 8. The operator of each newly completed well shall cause a gas-liquid ratio test to be taken on the well upon recovery of all load oil from the well, provided however, that in no event shall the test be commenced later than 30 days from the date of first production unless the well is connected to a gas-gathering facility and is producing under a temporary gas allowable assigned in accordance with Rule 11. Any well which is shut in shall be exempted from the gas-liquid ratio test requirement so long as it remains shut in. The initial gas-liquid ratio test shall be taken in the manner prescribed by Rule 9. If the gas-liquid ratio is 30,000 cubic feet of gas per barrel of liquid hydrocarbons, or more, the operator shall not produce the well until beneficial use can be made of the gas.

RULE 9. Gas-liquid ratio tests shall be taken on all wells during the months of March and September of each year. The initial gas-liquid ratio test shall suffice as the first semi-annual test. Tests shall be 24-hour tests, being the final 24 hours of a 72-hour period during which the well shall be produced at a constant normal rate of production. Results of such tests shall be filed on Commission Form C-116 on or before the 10th day of the following month. At least 72 hours prior to commencement of any such gas-liquid ratio tests, each operator shall file with the appropriate district office of the Commission a test schedule for its wells specifying the time each of its wells is to be tested. Copies of the test schedule shall also be furnished to all offset operators. Commission District supervisors may grant exceptions to the above test requirements where it is demonstrated that wells produce no liquids.

Special tests shall also be taken at the request of the Secretary-Director and may also be taken at the option of the operator. Such special tests shall be taken in accordance with the procedures outlined hereinabove, including notification to the Commission and offset operators.

RULE 10. An initial shut-in pressure test shall be taken on each gas well and shall be reported to the Commission on Form C-125.

RULE 11. Any well completed after the effective date of these rules shall receive an allowable only upon receipt by the appropriate Commission district office of Commission Forms C-104 and C-116, properly executed. The District Supervisor of the Commission's district office is hereby authorized

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CASE NO. 4352

Order No. R-3981-A

to assign a temporary gas allowable to wells connected to a gas transportation facility during the recovery of load oil, which allowable shall not exceed the number of cubic feet of gas obtained by multiplying the daily top unit allowable for the pool by the limiting gas-liquid ratio for the pool.

RULE 12. Balancing dates shall be 7 o'clock a.m. January the first and 7 o'clock a.m. July the first, and the periods of time bounded by these dates shall be gas proration periods.

RULE 13. Any gas well which has an underproduced status as of the end of a gas proration period shall be allowed to carry such underproduction forward into the next gas proration period and may produce such underproduction in addition to the allowable assigned during such succeeding period. Any allowable carried forward into a gas proration period and remaining unproduced at the end of such gas proration period shall be cancelled.

RULE 14. Production during any one month of a gas proration period in excess of the allowable assigned to a well for such month shall be applied against the underproduction carried into such period in determining the amount of allowable, if any, to be cancelled.

RULE 15. Any well which has an overproduced status as of the end of a gas proration period shall carry such overproduction forward into the next gas proration period, provided that such overproduction shall be compensated for during such succeeding period. Any well which has not compensated for the overproduction carried into a gas proration period by the end of such proration period shall be shut in until such overproduction is compensated for. If, at any time, a well is overproduced an amount equalling three times its current monthly allowable, it shall be shut in during that month and each succeeding month until the well is overproduced less than three times its current monthly allowable.

RULE 16. The allowable assigned to a well during any one month of a gas proration period in excess of the production for the same month shall be applied against the overproduction carried into such period in determining the amount of overproduction, if any, which has not been compensated for.

RULE 17. The Commission may allow overproduction to be compensated for at a lesser rate than would be the case if the

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CASE NO. 4352

Order No. R-3981-A

well were completely shut in upon a showing after notice and hearing that complete shut in of the well would result in material damage to the well or reservoir.

RULE 18. The monthly gas production from each gas well shall be metered separately and the gas production therefrom shall be reported to the Commission on Form C-115 so as to reach the Commission on or before the 24th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the produced gas.

RULE 19. Each purchaser or taker of gas shall submit a report to the Commission so as to reach the Commission on or before the 15th day of the month next succeeding the month in which the gas was purchased or taken. Such report shall be filed on Form C-111 with the wells being listed in the same order as they are listed on the appropriate proration schedule.

RULE 20. Failure to comply with any provision of these rules shall result in the immediate cancellation of allowable assigned to the affected well. No further allowable shall be assigned until all rules and regulations have been complied with. The Secretary-Director shall notify the operator of the well and purchaser in writing of the date of allowable cancellation and the reason therefor.

RULE 21. All transporters or users of gas shall file gas well-connection notices with the Commission as soon as possible after the date of connection.

RULE 22. Allowables to wells whose classification has changed from oil to gas or from gas to oil as the result of a gas-liquid ratio test shall commence on the first day of the month following the month in which such test was reported, provided that a plat (Form C-102) showing the acreage dedicated to the well and the location of all wells on the dedicated acreage has been filed.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the Double L-Queen Associated Pool or in the Queen formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location

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CASE NO. 4352

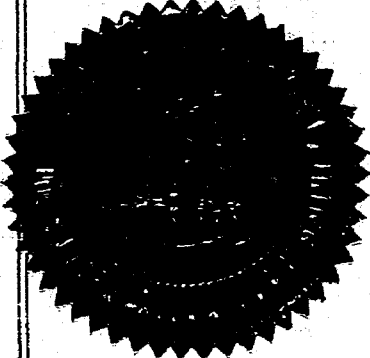
Order No. R-3981-A

shall notify the appropriate district office of the Commission in writing of the name and location of the well on or before September 1, 1971.

(2) That all operators shall, prior to September 1, 1971, file with the Commission Form C-102 for each well showing the acreage dedicated to the well.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


Bruce King
BRUCE KING, Chairman

Alex J. Armijo
ALEX J. ARMIJO, Member

A. L. Porter, Jr.
A. L. PORTER, Jr., Member & Secretary

S E A L

dr/

**BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO**

**IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:**

**CASE No. 4352
Order No. R-3981
NOMENCLATURE**

**APPLICATION OF JACK L. McCLELLAN
FOR THE CREATION OF A NEW GAS POOL
OR, IN THE ALTERNATIVE, THE ESTAB-
LISHMENT OF POOL RULES FOR TWO
EXISTING POOLS, CHAVES AND LEA
COUNTIES, NEW MEXICO.**

ORDER OF THE COMMISSION

BY THE COMMISSION:

**This cause came on for hearing at 9 a.m. on May 13, 1970,
at Santa Fe, New Mexico, before Examiner Daniel S. Mutter.**

**NOW, on this 18th day of June, 1970, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,**

FINDS:

- (1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.**
- (2) That the applicant, Jack L. McClellan, is the owner
and operator of certain wells in and near the Double L-Queen and
Sulimar-Queen Pools, Chaves and Lea County, New Mexico.**
- (3) That the applicant seeks the creation of a new gas pool
for Queen production in Chaves County, New Mexico, comprising the**

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CASE No. 4352
Order No. R-3981

following-described acreage:

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM

Section 11: SE/4
Section 12: SW/4
Section 13: NW/4
Section 14: E/2
Section 23: NE/4 and SW/4

(4) That in the event the Commission finds a new gas pool has not been discovered, applicant seeks, as an alternative, the promulgation of special rules for said Sulimar-Queen and Double L-Queen Pools as separate or as consolidated pools, including provisions for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and an allocation formula for withdrawals by oil and gas wells.

(5) That the evidence presently available indicates that the Jack L. McClellan Lisa "B" Federal Well No. 1, located 660 feet from the North line and 660 feet from the West line of Section 13, Township 15 South, Range 29 East, NMPM, Chaves County, New Mexico, having its top perforations at 1959 feet, has discovered a separate common source of supply which should be designated the Suble-Queen Gas Pool; that the vertical limits of said pool should be the Queen formation; and that the horizontal limits of said pool should be the SW/4 of Section 12 and the NW/4 of Section 13, Township 15 South, Range 29 East, NMPM, Chaves County, New Mexico.

(6) That if the casinghead gas from said Sulimar-Queen and Double L-Queen Pools is not being marketed at the end of 90 days from the date of this order, the Commission should on its own motion set a hearing to permit all operators in said pools to appear and show cause why the venting or flaring of said casinghead gas should not be prohibited.

IT IS THEREFORE ORDERED:

(1) That a new pool in Chaves County, New Mexico, classified as a gas pool for Queen production, is hereby created and designated as the Suble-Queen Gas Pool, with vertical limits comprising the Queen formation, and the horizontal limits consisting of the

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CASE No. 4352
Order No. R-3981

Following-described area:

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPH
Section 12: SW/4
Section 13: NW/4

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


DAVID F. CARGO, Chairman


ALEX J. ARMILLO, Member


A. L. PORTER, Jr., Member & Secretary

esr/

OIL CONSERVATION COMMISSION HEARING

CASE No. ⁴³⁵²4532 (RE-OPENED)

JUNE 30, 1971

SUBLE GAS POOL AND DOUBLE "L" OIL POOL
CHAVES COUNTY, NEW MEXICO

STATEMENT BY
JACK L. MCCLELLAN

SUITE 814
PETROLEUM BUILDING

JACK L. MCCLELLAN
GEOLOGIST AND OIL PRODUCER
P. O. BOX 848
ROSWELL, NEW MEXICO 88201

505 622-3200 OFFICE
505 622-4076 HOME

STATEMENT BY JACK L. MCCLELLAN CONCERNING OIL CONSERVATION COMMISSION
HEARING, CASE No. 4532 (RE-OPENED) ON SUBLE GAS POOL AND DOUBLE "L"
OIL POOL, CHAVES COUNTY, NEW MEXICO, JUNE 30, 1971.

IT IS THE POSITION OF THIS OPERATOR THAT THE ORIGINAL CONCLUSION OF
THIS COMMISSION, ESTABLISHING THE SUBLE QUEEN GAS POOL, WAS CORRECT
BASED ON THE INFORMATION AVAILABLE AT THAT TIME, AND THAT IN THE
INTERIM NO SIGNIFICANT INFORMATION HAS BEEN PRODUCED THAT WOULD
ALTER THE ORIGINAL DECISION OF THIS COMMISSION.

THE QUEEN SANDS IN THE AREA UNDER DISCUSSION ARE VERY COMPLEX AND,
AS YET, NOT COMPLETELY DEFINED. ANY AMOUNT OF GEOLOGICAL AND ENGI-
NEERING EVIDENCE CAN BE PRESENTED TO ESTABLISH THE EXISTENCE OR NON-
EXISTENCE OF A SEPERATING BARRIER BETWEEN THE SANDS, OR THAT THE
GAS BEARING SAND IS IN FACT THE GAS CAP TO THE OIL SAND OR IN A
SEPERATE RESERVOIR.

THE REPORTED INCREASE IN THE GOR AND NITROGEN CONTENT IN SEVERAL
WELLS IN THE DOUBLE "L" FIELD INDICATE THAT COMMUNICATION BETWEEN
THE SUBLE GAS RESERVOIR AND THE OIL ZONE OF THE DOUBLE "L" DOES
EXIST AND HAS BEEN OCCASIONED BY ARTIFICIALLY CONNECTING THE TWO
ZONES THROUGH FRACTURING OF SEVERAL WELLS. AS A RESULT OF THIS
CONNECTION MANY WELLS IN THE DOUBLE "L" ARE NOW DRAINING THE GAS
FROM THE SUBLE GAS RESERVOIR WITHOUT RESULTING IN ECONOMIC REMUNERA-
TION TO THE OWNERS OF THE GAS. THESE OWNERS HAVE NO RECOURSE TO
THIS DRAINAGE, DUE TO THE INABILITY TO SELL SMALL VOLUMES OF GAS
THAT WOULD RESULT UPON APPLICATION OF GAS FORMULAS NOW IN USE, AS
THE NATURE OF THIS GAS, WHICH IN EFFECT IS "HALF GAS", MAKES IT UN-
ECONOMICAL TO PRODUCE UNLESS PRODUCED IN LARGE VOLUMES. A RECENTLY
DEVELOPED PROCESS SEPERATES THE NITROGEN FROM THE METHANE, RESULT-
ING IN A COMMERCIAL GAS. I HAVE BEEN NEGOTIATING FOR A NITROGEN
EXTRACTION PLANT TO BE INSTALLED IN THE AREA OF MY THREE EXISTING
SHUTIN GAS WELLS, NOW CLASSIFIED AS THE SUBLE GAS POOL. THIS PLANT
REQUIRES AN INPUT OF 12,000,000 CUBIC FEET PER DAY OF NITROGEN GAS
AND AN OUTPUT OF APPROXIMATELY 5,000,000 CUBIC FEET PER DAY, THE
PRODUCTION FROM THE OUTPUT SIDE HAVING A BTU RATING OF 950, AND

A VALUE OF APPROXIMATELY \$20,000 PER MONTH. I HAVE A FIRM OFFER FOR THE INSTALLATION OF SUCH A PLANT, BUT IT WILL REQUIRE DELIVERY OF 12,000,000 CUBIC FEET PER DAY TO MAKE SUCH A PLANT FEASIBLE, WHICH CANNOT BE ACHIEVED UNLESS THE EXISTING GAS WELLS AND POTENTIAL GAS ACREAGE IS ALLOWED TO PRODUCE, NOT SUBJECT TO RULES LIMITING THE VOLUMES BELOW THE NECESSARY AMOUNT NEEDED TO RUN THE PLANT.

THE PRESENT RULES OF THE OIL CONSERVATION COMMISSION PERTAINING TO GAS RESERVOIRS IN RELATIONSHIP TO OIL RESERVOIRS ARE NOT EQUITABLE TO THIS AREA AS THE GAS HAS A LOW BTU AND CORRESPONDING HIGH NITROGEN CONTENT. IN THE PAST THIS TYPE GAS WAS NOT COMMERCIAL. THE SITUATION HAS NOW CHANGED AND THIS QUALITY GAS HAS BECOME OF PRIME IMPORTANCE TO THE INDUSTRY AND THE NATION, WITH A CORRESPONDING INCREASE IN VALUE, THEREBY MAKING THIS LOW QUALITY GAS AN ECONOMIC COMMODITY THAT IS NEEDED TO HELP FULFILL THE ENERGY DEFICIENCY NOW PRESENT IN THIS COUNTRY.

ANY DECISION OF THIS COMMISSION THAT WOULD PREVENT THE SALE OF THIS GAS IN LARGE QUANTITIES WOULD SERIOUSLY CURTAIL, IF NOT ELIMINATE, THE POSSIBILITY OF UTILIZING THIS ENERGY SOURCE, RESULTING IN THE LOSS OF REVENUE TO THE STATE OF NEW MEXICO, THE FEDERAL GOVERNMENT, WHO IS THE PRINCIPAL ROYALTY OWNER, AND THE OWNERS OF THE EXISTING WELLS AND POTENTIALLY PRODUCTIVE ACREAGE. OPERATOR HAS INVESTED A GREAT DEAL OF TIME AND MONEY TOWARD THE DEVELOPMENT OF THIS RATHER LARGE AREA FOR EXPLOITATION OF A NEW RESOURCE: LOW QUALITY COMMERCIAL GAS. IN MY OPINION, THIS GAS COVERS A LARGE AREA AND IS PRESENT IN GREAT QUANTITIES.

THE FUTURE USE OF THIS GAS IS, IN A LARGE PART, DEPENDENT UPON IMMEDIATE PLANNING AND SECURING THE NEWLY DEVELOPED NITROGEN EXTRACTION PLANT, OR A SOURCE OF USE FOR THE NITROGEN IN ITS PRESENT FORM. THIS RAW GAS COULD BE MIXED WITH HIGH BTU GAS, RESULTING IN A LARGER VOLUME OF USEABLE GAS WITH A MORE DESIRABLE BTU CONTENT, OR USED AS A RE-PRESSURING AGENT FOR DEPLETED OIL FIELDS ADAPTABLE TO THIS TYPE OF RE-PRESSURING. THIS USE WOULD NOT ONLY RECOVER

VAST AMOUNTS OF OTHERWISE UNRECOVERABLE OIL, BUT ALSO REMOVE THE NITROGEN FROM THE GAS, MAKING IT A HIGHLY USEABLE AND PROFITABLE BY PRODUCT. FOR THIS TO BE FEASIBLE IT WILL BE NECESSARY THAT A LARGE CONSTANT SOURCE OF GAS BE AVAILABLE AND THAT THERE WILL BE ASSURANCE THAT DURING THE TIME OF SECURING A USE FOR UTILIZING THIS GAS THE ABILITY TO OBTAIN THE NECESSARY VOLUME WILL NOT ARBITRARILY BE RESTRICTED AT SOME LATER DATE.

I AM NOT RECOMMENDING THAT THE GAS FROM THE SUBLE BE PRODUCED AT THE EXPENSE OF REDUCING THE ULTIMATE RECOVERY FROM THE DOUBLE "L" OIL POOL. AT THE PRESENT TIME THE NITROGEN GAS CONTENT IS INCREASING, PARTICULARLY ON THE WEST SIDE, WHICH IN MY OPINION IS DUE TO THE ARTIFICIAL CONNECTION PREVIOUSLY DISCUSSED. THIS GAS FROM THE GAS FIELD IS NOT BENEFICIAL TO OIL PRODUCTION, AS IT DOES NOT HAVE SUFFICIENT PRESSURE TO MOVE THE OIL AND WILL NOT GO INTO SOLUTION FOR THE SAME REASON, THEREBY ONLY RAISING THE GOR ON THESE WELLS, RESULTING IN A LOWER PRICE FOR THE OTHERWISE HIGHER BTU OF THE CASINGHEAD GAS AND WILL RESULT IN THE ECONOMIC WASTE OF GAS DUE TO PHILLIPS INABILITY TO HANDLE EVER LARGER VOLUMES OF LOW BTU GAS.

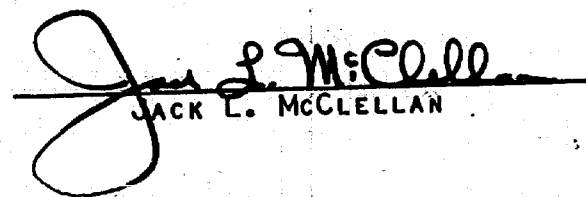
PHILLIPS HAS NO FACILITIES TO HANDLE THIS TYPE GAS AND WILL EVENTUALLY HAVE TO RESTRICT THE VOLUME OF TAKE, LOWERING THE AMOUNT OF OIL THAT CAN BE PRODUCED. AN INCREASE IN THE GOR IN ORDER TO PRODUCE MORE OIL WOULD COMPOUND THE PRESENT BAD SITUATION AND I AM OPPOSED TO ANY CONSIDERATION OF A HIGHER GOR FOR REASONS ALREADY STATED AND, ALSO, THAT IT WOULD INCREASE THE DRAINAGE OF THE SUBLE GAS POOL.

IN SUMMARY, IT IS MY OPINION THAT THE SUBLE GAS POOL IS A SEPERATE RESERVOIR AS ORIGINALLY DETERMINED, THAT IT IS NOW BEING DEPLETED BY THE EVER INCREASING GOR'S IN THE DOUBLE "L" OIL POOL, AND THAT A STRONG POSSIBILITY EXISTS THAT IF GAS WERE PRODUCED IN LARGE VOLUMES FROM THE SUBLE THAT IT WOULD CURTAIL THE INCREASING GOR AND GIVE RELIEF TO PHILLIPS IN THEIR ABILITY TO HANDLE THE NORMAL CASINGHEAD GAS. I WOULD SUGGEST TO THIS COMMISSION THAT THEY CONSIDER

MORE FLEXIBLE RULES PERTAINING TO THIS SITUATION DUE TO THE CHANGING ECONOMICS OF THE OIL AND GAS INDUSTRY. IF CHANGES ARE MADE, I WOULD SUGGEST THAT CONSIDERATION SHOULD BE GIVEN TO MUCH LARGER ALLOWABLES OF GAS WITH INFERIOR QUALITY, TO COMPENSATE FOR THE DIFFICULT ECONOMIC FEATURES INVOLVED IN THE RESULTING NET PRICE OF SUCH GAS.

I REQUEST THAT THE PRESENT ORDER OF THE COMMISSION REMAIN UNCHANGED UNTIL THE INFORMATION PRESENTED TODAY CAN BE STUDIED AND CONSIDERATION BE GIVEN TO A NEW FORMULA PERTAINING TO THIS UNIQUE AREA.

THANK YOU,


JACK L. MCCLELLAN

SUITE B14
PETROLEUM BUILDING

JACK L. McCLELLAN
GEOLOGIST AND OIL PRODUCER
P. O. BOX 848
ROSWELL, NEW MEXICO 88201

505 622-3200 OFFICE
505 622-4076 HOME

AUGUST 24, 1970

25 AM 8 01
AUG

OIL CONSERVATION COMMISSION
POST OFFICE BOX 2088
SANTA FE, NEW MEXICO 87501

RE: GAS CONNECTION
SULIMAR QUEEN POOL
ORDER No. R-3981

GENTLEMEN:

PERTAINING TO CASE No. 4352, ORDER No. R-3081, PART 6, THE COMMISSION ORDERED THAT WITHIN 90 DAYS FROM THE DATE OF THIS ORDER, WHICH IS JUNE 18, 1970, THAT IF GAS IS NOT BEING MARKETING AT THE END OF THIS TIME THAT THE COMMISSION, ON ITS OWN ORDER, WOULD SET A HEARING THAT ALL OPERATORS MIGHT SHOW CAUSE WHY THE VENTING OR FLARING OF CASINGHEAD GAS SHOULD NOT BE PROHIBITED.

IN THE PAST SEVERAL WEEKS I HAVE BEEN NEGOTIATING WITH NATURAL GAS PIPELINE COMPANY CONCERNING A CONTRACT FOR BOTH THE CASINGHEAD GAS AND GAS WELL GAS IN THE SULIMAR QUEEN AREA. AS YOU WILL REALIZE, THIS WAS A RATHER UNIQUE CONTRACT INASMUCH AS IT INVOLVED THE PURCHASE OF A COMBINATION OF CASINGHEAD GAS AND LOW BTU GAS WELL GAS. THIS CONTRACT, BY NECESSITY, INVOLVED MANY TECHNICALITIES THAT HAD NOT BEEN PREVIOUSLY INVOLVED IN STANDARD CONTRACTS. THEREFORE, MUCH NEGOTIATION AND ENGINEERING DATA WERE REQUIRED TO REACH A CONTRACT ACCEPTABLE TO BOTH THE PIPELINE AND THE OPERATORS.

ON AUGUST 13 WE MET WITH NATURAL GAS PIPELINE IN MIDLAND, TEXAS AND REACHED AGREEMENT ON ALL POINTS IN CONTENTION. NATURAL GAS IS NOW REDRAFTING THEIR CONTRACT FOR OUR ACCEPTANCE. AT THAT TIME THEY WILL THEN CONTACT OPERATORS

OIL CONSERVATION COMMISSION
AUGUST 24, 1970
PAGE 2

IN THE DOUBLE L FIELD FOR EXECUTION OF A LIKE CONTRACT,
AT WHICH TIME NATURAL GAS WILL COMMENCE CONSTRUCTION OF
A GAS LINE TO THE SULIMAR AND DOUBLE L QUEEN AREAS.

VERY TRULY YOURS,

Jack L. McClellan
JACK L. MCCLELLAN

JLMC:LT
CC: SEE ATTACHED LIST

DALPORT OIL CORPORATION
ROOM 1123 THE 600 BUILDING
CORPUS CHRISTI, TEXAS 78401
ATTENTION: MR. LEON LAMPERT

DALPORT OIL CORPORATION
3471 FIRST NATIONAL BANK BUILDING
DALLAS, TEXAS 75202
ATTENTION: MR. W. L. TODD

HUMBLE OIL & REFINING COMPANY
POST OFFICE BOX 2180
HOUSTON, TEXAS 77001
ATTENTION: MR. IVY

HUMBLE OIL & REFINING COMPANY
POST OFFICE BOX 2100
HOBBS, NEW MEXICO 88240
ATTENTION: MR. BOB PARSE

PAN AMERICAN PETROLEUM CORPORATION
POST OFFICE BOX 68
HOBBS, NEW MEXICO 88240
ATTENTION: MR. ED STALEY

PAN AMERICAN PETROLEUM CORPORATION
POST OFFICE BOX 1410
FORT WORTH, TEXAS 76101
ATTENTION: MR. KEN WARDWELL

CORRINE GRACE
C/O CHARLES P. MILLER
POST OFFICE BOX 417
HOBBS, NEW MEXICO 88240

CITIES SERVICE OIL COMPANY
POST OFFICE BOX 4906
MIDLAND, TEXAS 79701
ATTENTION: MR. GENE MOTTER

PUBCO PETROLEUM CORPORATION
POST OFFICE BOX 1419
ALBUQUERQUE, NEW MEXICO
ATTENTION: MR. ORIN CRANE

NATURAL GAS PIPELINE COMPANY
POST OFFICE BOX 236
MIDLAND, TEXAS 79701
ATTENTION: MR. R. L. MEDLEY

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4352
Order No. R-3981

NOMENCLATURE

APPLICATION OF JACK L. McCLELLAN
FOR THE CREATION OF A NEW GAS POOL
OR, IN THE ALTERNATIVE, THE ESTAB-
LISHMENT OF POOL RULES FOR TWO
EXISTING POOLS, CHAVES AND LEA
COUNTIES, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 13, 1970,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 18th day of June, 1970, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

(1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.

(2) That the applicant, Jack L. McClellan, is the owner
and operator of certain wells in and near the Double L-Queen and
Sulimar-Queen Pools, Chaves and Lea County, New Mexico.

(3) That the applicant seeks the creation of a new gas pool
for Queen production in Chaves County, New Mexico, comprising the

-2-

CASE No. 4352
Order No. R-3981

following-described acreage:

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM

Section 11: SE/4
Section 12: SW/4
Section 13: NW/4
Section 14: E/2
Section 23: NE/4 and SW/4

(4) That in the event the Commission finds a new gas pool has not been discovered, applicant seeks, as an alternative, the promulgation of special rules for said Sulimar-Queen and Double L-Queen Pools as separate or as consolidated pools, including provisions for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and an allocation formula for withdrawals by oil and gas wells.

(5) That the evidence presently available indicates that the Jack L. McClellan Lisa "B" Federal Well No. 1, located 660 feet from the North line and 660 feet from the West line of Section 13, Township 15 South, Range 29 East, NMPM, Chaves County, New Mexico, having its top perforations at 1959 feet, has discovered a separate common source of supply which should be designated the Suble-Queen Gas Pool; that the vertical limits of said pool should be the Queen formation; and that the horizontal limits of said pool should be the SW/4 of Section 12 and the NW/4 of Section 13, Township 15 South, Range 29 East, NMPM, Chaves County, New Mexico.

(6) That if the casinghead gas from said Sulimar-Queen and Double L-Queen Pools is not being marketed at the end of 90 days from the date of this order, the Commission should on its own motion set a hearing to permit all operators in said pools to appear and show cause why the venting or flaring of said casinghead gas should not be prohibited.

IT IS THEREFORE ORDERED:

(1) That a new pool in Chaves County, New Mexico, classified as a gas pool for Queen production, is hereby created and designated as the Suble-Queen Gas Pool, with vertical limits comprising the Queen formation, and the horizontal limits consisting of the

-3-

CASE No. 4352

Order No. R-3981

following-described area:

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM

Section 12: SW/4

Section 13: NW/4

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

ALEX J. ARMIJO, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

esr/

Case 4352.

Heard. 6-30-71

Co. 7-218-71

Grant an extension to the
Double L oil pool pool to in-
clude:


155-RE

Sec 12 ~~SW/4~~ ^{SW/4} NE/4, W/2 SE/4,
SW/4.

Sec. 13 NW/4.

The 2000:1 G & R shall remain
at sea effect.

Establish a G & R Definition
for a Gas well of 30,000:1.
There was evidence at the hearing
that a well was producing
Gas Cap gas at G & R's
substantially below 30,000:1.

See Exhibit 6 for Special
pool Rules. 

County, _____

Township 1 Range _____

Township _____ Range _____

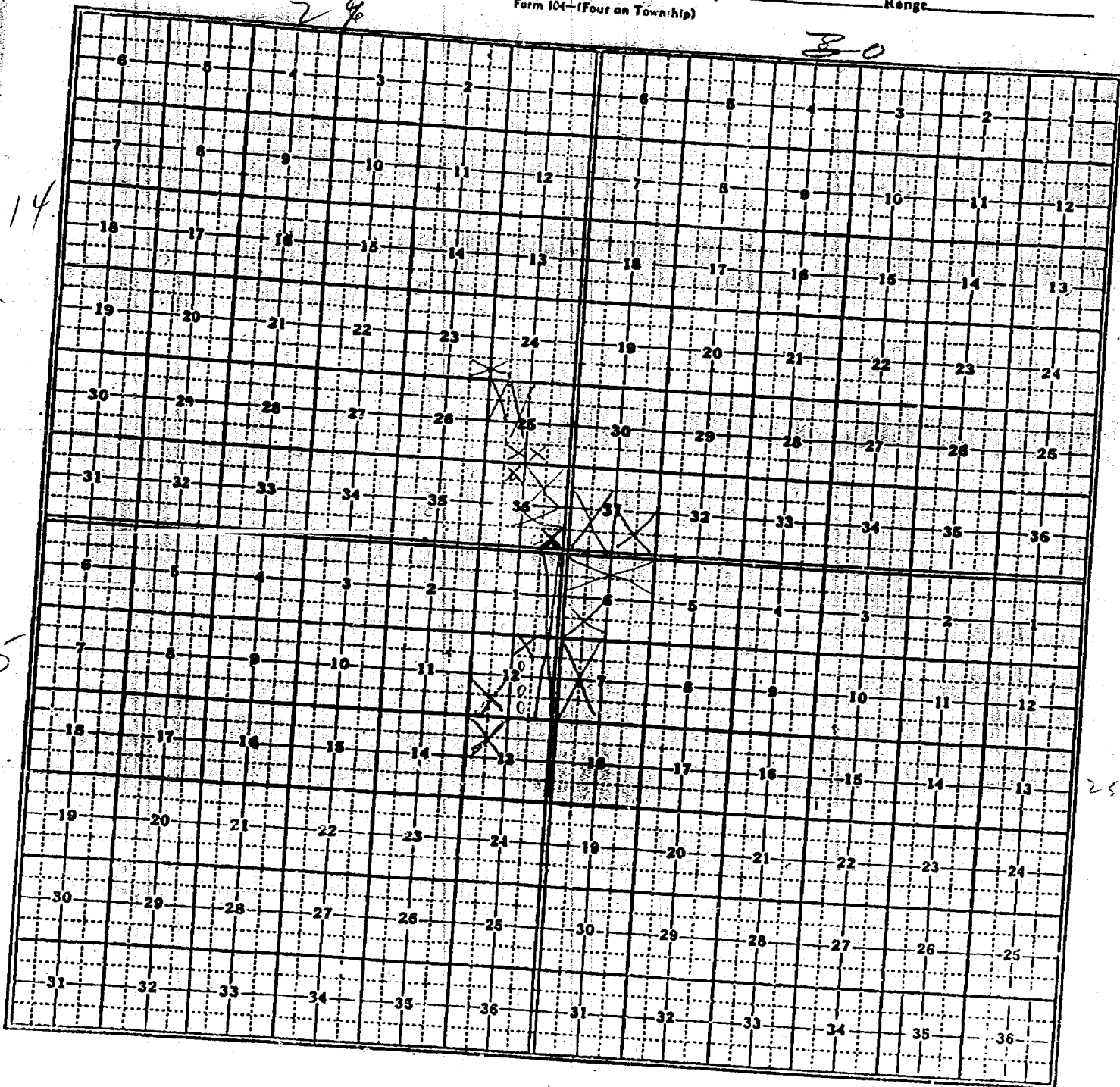
Township _____ Range _____

Township _____ Range _____

Form 104—(Four on Township)

29

30



Amaco Production Co
P.O. Box 68 Hqs NM
Attn: Mr Stacey

Humble Oil & Refining Co
P.O. Box
Midland Tex

Attn: Mr. Harley Reeves

Delport Oil Corp

Corpus Christi Texas

Attn: Mr. Leon Lampert

Corrine and Michael Grace

Santa Fe NM

Mr. Jack McEllean
814 Petroleum Bldg
Roswell NM 88201

Tom Schneider
406 N. Marienfeld
Midland Tex 79701

USPS
Roswell

Bill Krasnick

PROPOSED RULES - DOUBLE L-QUEEN
ASSOCIATED POOL

That, effective the date of this order, Special Rules and Regulations for the Double L-Queen Pool, Chaves County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
DOUBLE L-QUEEN POOL

RULE 1. Each well completed or recompleted in the Double L-Queen Pool or in the Queen formation within one mile thereof, and not nearer to or within the limits of another designated Queen pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. (a) Each gas well shall be located on a standard unit containing 160 acres, more or less, substantially in the form of a square, which is a quarter section being a legal subdivision of the United States Public Land Surveys.

RULE 2. (h) Each oil well shall be located on a standard unit containing 40 acres, more or less, consisting of a governmental quarter-quarter section.

RULE 3. The Secretary-Director of the Commission may grant an exception to the requirements of Rule 2 (a) without notice and hearing when an application has been filed for a non-standard unit and the unorthodox size or shape of the unit is necessitated by a variation in the legal subdivision of the United States Public Land Surveys, or the following facts exist and the following provisions are complied with:

- (a) The non-standard unit consists of quarter-quarter sections or lots that are contiguous by a common bordering side.
- (b) The non-standard unit lies wholly within a governmental quarter section and contains less acreage than a standard unit.

BEFORE EXAMINER UTZ
IL CONSERVATION COMMISSION
OCC EXHIBIT NO. 6
CASE NO. 4352

- (c) The applicant presents written consent in the form of waivers from all offset operators and from all operators owning interests in the quarter section in which the non-standard unit is situated and which acreage is not included in said non-standard unit.
- (d) In lieu of paragraph (c) of this rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered or certified mail of his intent to form such non-standard unit. The Secretary-Director may approve the application if no such operator has entered an objection to the formation of such non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. Each well, oil or gas, shall be located no nearer than 330 feet to any quarter-quarter section line, except that any well drilled in a known gas productive area shall be located within 150 feet of the center of a quarter-quarter section.

RULE 5. A well shall be classified as a gas well if it has a gas-liquid ratio of ³⁰⁰⁰⁰100,000 or more cubic feet of gas per barrel of liquid hydrocarbons. A well shall be classified as an oil well if it has a gas-liquid ratio of less than ~~100,000~~ cubic feet of gas per barrel of liquid hydrocarbons. The simultaneous dedication of any acreage to an oil well and a gas well is prohibited.

RULE 6, That the limiting gas-oil ratio shall be 2000 cubic feet of gas for each barrel of oil produced.

RULE 7. An oil well which has 40 acres dedicated to it shall be permitted to produce an amount of gas determined by multiplying the top unit oil allowable for the pool by the limiting gas-liquid ratio for the pool. In the event there is more than one oil well on a 40-acre oil proration unit, the operator may produce the allowable assigned to the 40-acre unit from the wells on the unit in any proportion.

A gas well shall be permitted to produce that amount of gas obtained by multiplying the top unit oil allowable for the pool by the limiting gas-liquid ratio for the pool and by a fraction, the numerator of which is the number of acres dedicated to the particular gas well and the denominator of which is 40. In the event there is more than one gas well on a 160-acre gas proration unit, the operator may produce the amount of gas assigned to the unit from the wells on the unit in any proportion.

RULE 8. The operator of each newly completed well shall cause a gas-liquid ratio test to be taken on the well upon recovery of all load oil from the well, provided however, that in no event shall the test be commenced later than 30 days from the date of first production unless the well is connected to a gas-gathering facility and is producing under a temporary gas allowable assigned in accordance with Rule 11. Any well which is shut in shall be exempted from the gas-liquid ratio test requirement so long as it remains shut in. The initial gas-liquid ratio test shall be taken in the manner prescribed by Rule 9. If the gas-liquid ratio is 100,000 cubic feet of gas per barrel of liquid hydrocarbons, or ^{30,000} more, the operator shall not produce the well until beneficial use can be made of the gas.

RULE 9. Gas-liquid ratio tests ^{Sept.} shall be taken on all wells during the months of March, ~~July & November~~ of each year. The initial gas-liquid ratio test shall suffice as the first semi-annual test. Tests shall be 24-hour tests, being the final 24 hours of a 72-hour period during which the well shall be produced at a constant normal rate of production. Results of such tests shall be filed on Commission Form C-116 on or before the 10th day of the following month. At least 72 hours prior to commencement of any such gas-liquid ratio tests, each operator shall file with the appropriate district office of the Commission a test schedule for its wells specifying the time each of its wells is to be tested. Copies of the test schedule shall also be furnished to all offset operators. Commission District supervisors may grant exceptions to the above test requirements where it is demonstrated that wells produce no liquids.

Special tests shall also be taken at the request of the Secretary-Director and may also be taken at the option of the operator. Such special tests shall be taken in accordance with the procedures outlined hereinabove, including notification to the Commission and offset operators.

RULE 10. An initial shut-in pressure test shall be taken on each gas well and shall be reported to the Commission on Form C-125.

RULE 11. Any well completed after the effective date of these rules shall receive an allowable only upon receipt by the appropriate Commission district office of Commission Forms C-104 and C-116, properly executed. The District Supervisor of the Commission's district office is hereby authorized to assign a temporary gas allowable to wells connected to a gas transportation facility during the recovery of load oil, which allowable shall not exceed the number of cubic feet of gas obtained by multiplying the daily top unit allowable for the pool by the limiting gas-liquid ratio for the pool.

RULE 12. Balancing dates shall be 7 o'clock a.m. January the first and 7 o'clock a.m. July the first, and the periods of time bounded by these dates shall be gas proration periods.

RULE 13. Any gas well which has an underproduced status as of the end of a gas proration period shall be allowed to carry such underproduction forward into the next gas proration period and may produce such underproduction in addition to the allowable assigned during such succeeding period. Any allowable carried forward into a gas proration period and remaining unproduced at the end of such gas proration period shall be cancelled.

RULE 14. Production during any one month of a gas proration period in excess of the allowable assigned to a well for such month shall be applied against the underproduction carried into such period in determining the amount of allowable, if any, to be cancelled.

RULE 15. Any well which has an overproduced status as of the end of a gas proration period shall carry such overproduction forward into the next gas proration period, provided that such

overproduction shall be compensated for during such succeeding period. Any well which has not compensated for the overproduction carried into a gas proration period by the end of such proration period shall be shut in until such overproduction is compensated for. If, at any time, a well is overproduced an amount equalling three times its current monthly allowable, it shall be shut in during that month and each succeeding month until the well is overproduced less than three times its current monthly allowable.

RULE 16. The allowable assigned to a well during any one month of a gas proration period in excess of the production for the same month shall be applied against the overproduction carried into such period in determining the amount of overproduction, if any, which has not been compensated for.

RULE 17. The Commission may allow overproduction to be compensated for at a lesser rate than would be the case if the well were completely shut in upon a showing after notice and hearing that complete shut in of the well would result in material damage to the well or reservoir.

RULE 18. The monthly gas production from each gas well shall be metered separately and the gas production therefrom shall be reported to the Commission on Form C-115 so as to reach the Commission on or before the 24th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the produced gas.

RULE 19. Each purchaser or taker of gas shall submit a report to the Commission so as to reach the Commission on or before the 15th day of the month next succeeding the month in which the gas was purchased or taken. Such report shall be filed on Form C-111 with the wells being listed in the same order as they are listed on the oil proration schedule.

RULE 20. Failure to comply with any provision of these rules shall result in the immediate cancellation of allowable assigned to the affected well. No further allowable shall be assigned until all rules and regulations have been complied with. The Secretary-Director shall notify the operator of the well and purchaser in writing of the date of allowable cancellation and the reason therefor.

RULE 21. All transporters or users of gas shall file gas well-connection notices with the Commission as soon as possible after the date of connection.

RULE 22. Allowables to wells whose classification has changed from oil to gas or from gas to oil as the result of a gas-liquid ratio test shall commence on the first day of the month following the month in which such test was reported, provided that a plat (Form C-102) showing the acreage dedicated to the well and the location of all wells on the dedicated acreage has been filed.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the Double L-Queen Pool or in the Queen formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location shall notify the appropriate district office of the Commission in writing of the name and location of the well on or before August 1, 1971.

(2) That all operators shall, prior to August 1, 1971, file with the Commission Form C-102 for each well showing the acreage dedicated to the well.

DONE at Santa Fe, New Mexico, on the day and year herein-above designated.

Applicant's Ex# A

CASE NO. 4352

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

WEDNESDAY, MAY 27, 1970

NEW MEXICO OIL CONSERVATION COMMISSION
EXAMINER HEARING
WEDNESDAY, MAY 27, 1970

CASE 4352

APPLICATION OF JACK L. McCLELLAN FOR THE CREATION OF A NEW QUEEN GAS POOL, CHAVES COUNTY,
NEW MEXICO

Acreage in requested new pool is designated as follows:

Township 15 South, Range 29 East
Section 11: SE/4
Section 12: SW/4
Section 13: NW/4
Section 14: E/2
Section 23: NE/4 and SW/4

Jack L. McClellan requests the creation of a New Queen Gas Pool based on evidence that the producing pay in the Jack L. McClellan, Patrick Federal Well No. 1, is not connected to or in communication with the producing Queen oil reservoirs in either the Double L Pool or the Sulimar Queen Pool.

After reviewing the available data, it is an opinion the Queen gas and oil reservoirs in this area are a series of echelon type shoreline sand deposits separated by areas of no porosity. Each separate reservoir has its distinct individual characteristics. The Double L and Sulimar Queen Oil Pools exhibit gas-oil and oil-water contacts. The top of the Queen in the Continental Oil Company, Means Well No. 1, Section 28, Township 14 South, Range 30 East, is approximately 100 feet below the oil-water contact in the Double L Field and is gas productive. The Jack L. McClellan, Patrick Federal Well No. 1, located West and approximately equidistant from both the Double L and Sulimar Fields, is structurally high to these pools and produces dry gas. There has been no change in the reservoir pressure in the Patrick Well since completion in September, 1967. In our opinion, a pinch out occurs up dip along the West boundary of the Double L Field. Cross sections prepared in the area and supported by available core analysis indicate two producing members of the Queen formation and in all probability small gas caps existed initially in both members. The limited core data available suggests a loss of porosity up dip from the main axis of the reservoir where the measured porosities are 30% of bulk volume, and permeabilities are reported in excess of two darcies. The reservoir crude oil was saturated at initial conditions, and the bubble point, using empirical data, was projected to be 640 psig.

The reservoir pressure performance in both the Sulimar and Double L Pools is shown on Exhibit 5. Pressures in the Sulimar Pool are declining rapidly. The initial pressures in the Double L Field reported in 1969, approximately one and one half years after completion of the Patrick Federal Well, were considerably higher than the original calculated bottom hole pressure on the Patrick Well. In many cases the current observed reservoir pressures in wells in the Double L Pool are now 180 to 250 pounds less than the current reservoir pressure in the Patrick Federal Well No. 1.

To substantiate that separation actually exists between the Jack L. McClellan, Patrick Federal Well No. 1, and the Double L Queen Pool, the applicant requested of Mr. Bill Gressett of the New Mexico Oil Conservation Commission, Artesia, and received approval to conduct reservoir pressure drawdown, reservoir pressure buildup and interference tests. The tests were commenced on May 4, 1970, and consisted of a pressure buildup in the Dalport Oil Corporation Sunset Federal Well No. 1, and an interference test with the Jack L. McClellan, Patrick Federal Well No. 1. A pressure drawdown test was conducted on the Patrick Well in conjunction with an interference test on the Sunset Federal Well No. 1. The results of these tests are included in the Exhibits. The results indicate that the Dalport Oil Corporation, Sunset Federal Well No. 1, continued to build with no effect on the Patrick Well and, conversely, when the Patrick Well was produced on a five day drawdown test, the Sunset Well continued to build and indicated no effects of interference or communication.

Additional items of interest and of significance is the comparison of the gas analysis of the produced gas from the various wells. It is interesting to note that in the case of both the Jack L. McClellan, Patrick Federal Well No. 1 and the Continental Oil Company, Means Well No. 1, both of which, in the applicants opinion, are dry gas wells, the BTU content is significantly lower than the BTU values of the associated gas produced from wells in the oil reservoirs. A major gas transmission pipeline company is contemplating laying a line to this area to purchase the high nitrogen content gas. The economics of the pipeline dictate that sufficient volumes of gas be available for delivery and the applicant desires the establishment of a New Queen Gas Pool to make available the additional volumes of gas to make the entry of the line to this area an economic possibility. Other activity relevant to this application, is the success that operators have had in squeezing off the upper member of the Queen pay in the Rob Well. The gas-oil ratios have been reduced measurably.

In summary, it is the applicant's opinion, based on supporting evidence, that the Queen Pay in the Patrick Federal Well No. 1, is not in communication with either the Sulimar or Double L Pools and that with the establishment of a New Gas Pool and gas well allowables, production from the Patrick Federal Well No. 1 would not dissipate reservoir energy from the existing producing oil pools. It is the opinion that both the Double L and Sulimar Queen Pools are exhibiting depletion type producing characteristics, and the reservoir pressures can only be maintained by the injection of extraneous fluids. The applicant respectfully requests that a New Gas Pool designation be established with each gas well located on a standard unit containing 160 acres, more or less, consisting of a governmental quarter section.

EXHIBITS

EXHIBIT 1	Structure Map
EXHIBIT 2	Isopachous Map
EXHIBIT 3	Crossection of Double L, Queen and Undesignated Queen Gas Pools
EXHIBIT 4	Crossection Double L Pool
EXHIBIT 5	Production and Pressures - Sulimar and Double L Pools
EXHIBIT 6	Reservoir Pressure Drawdown Patrick Well
EXHIBIT 7	Reservoir Pressure Buildup Sunset Federal Well
EXHIBIT 8	Reservoir Interference Tests Graphic
EXHIBIT 9	Reservoir Interference Tests Tabular
EXHIBIT 10	Gas Analyses
EXHIBIT 11	Permeability Porosity - Double L Pool
EXHIBIT 12	Lease Plat - Double L and Sulimar Pools
EXHIBIT 13	Estimated Fluid Analysis - Double L and Sulimar Pools

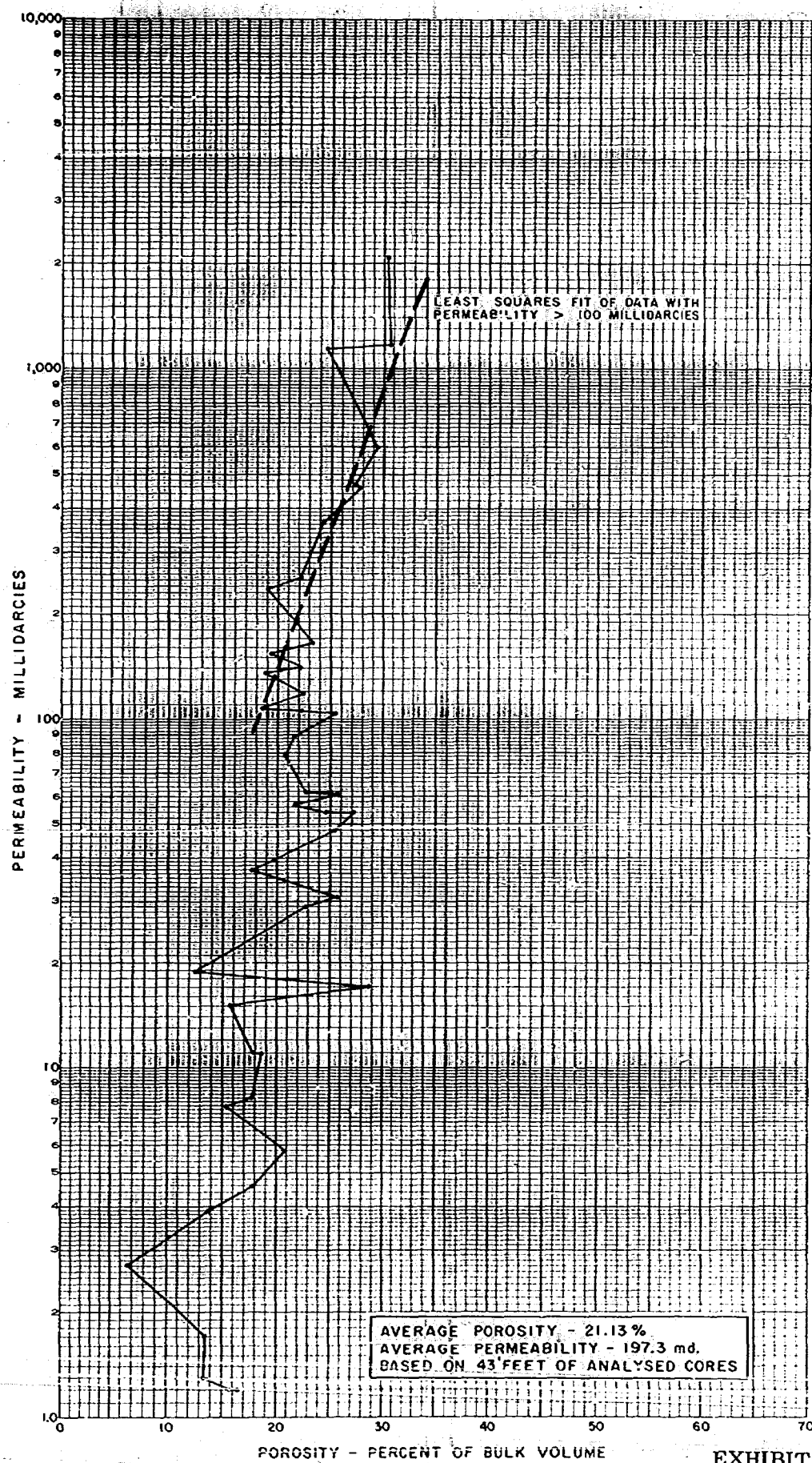


EXHIBIT 11

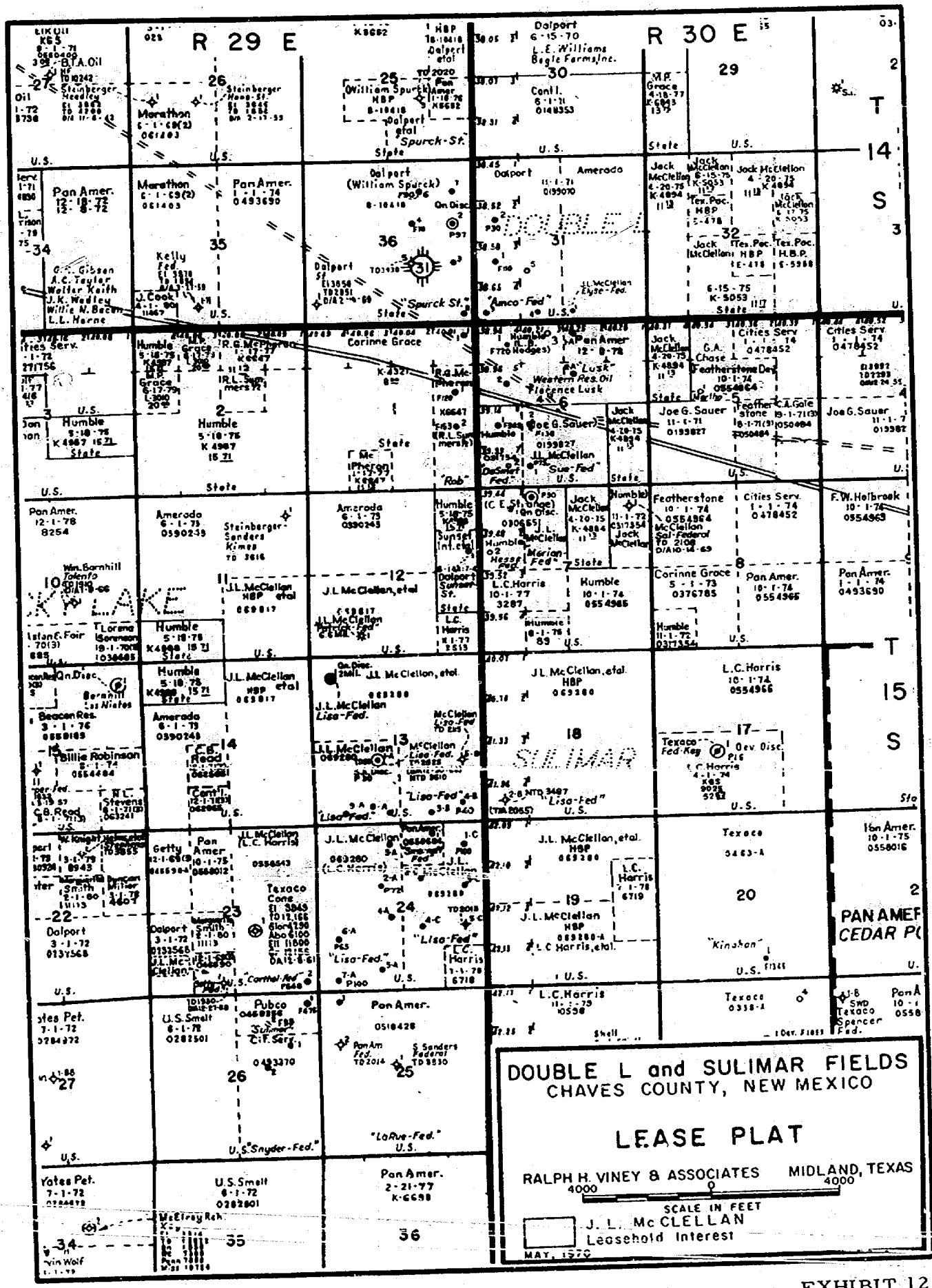


EXHIBIT 12

**ESTIMATED FLUID ANALYSIS
DOUBLE L AND SULIMAR POOLS
CHAVES COUNTY, NEW MEXICO**

Ralph H. Viney & Associates
Engineering Consultants

Without the benefit of laboratory analysis of the reservoir fluids in both fields, the characteristics were estimated using reported gas-oil ratios and crude oil gravities.

The results reported by Humble Oil and Refining Company on their DeSmet Well No. 1 and Lusk Well No. 1 were considered separator measurements. A correction factor of 15% was used to allow for gas volumes lost in storage tanks.

Gas-Oil Ratios

DeSmet No. 1	163 cubic feet/barrel
Lusk No. 1	156 cubic feet/barrel
Average	159.5 cubic feet/barrel

Estimated Solution Gas-Oil Ratio (159.5 x 1.15)	182.4 cubic feet/barrel
--	-------------------------

Specific Gravity of Produced Gas	1.13 (Air = 1.0) 1.93 - 1.4
----------------------------------	--------------------------------

Reservoir Temperature (Sunset Federal No. 1)	87° F.
---	--------

Stock Tank Oil Gravity at 60° F.	35.5° API
----------------------------------	-----------

Estimated Bubble Point	640 psig (1)
------------------------	--------------

Estimated Formation Volume Factor	1.10 barrels/barrel (1)
-----------------------------------	-------------------------

Estimated Reservoir Oil Viscosity (Beals Correlations)	3.30 centipoises (2)
---	----------------------

(1) California Research Corporation Properties of Natural Hydrocarbon Mixture of Gas and Liquid Nomographs.

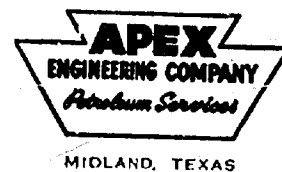
(2) Beal, Chew and Connally Oil Viscosity Charts.

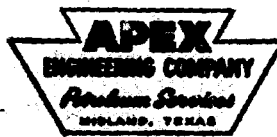
EXHIBIT 13

INTERFERENCE TEST AND RESERVOIR
LIMIT TEST: MAY 4 - 14, 1970.
JACK L. MCCLELLAN - PATRICK #1
DALPORT OIL CORP. - SUNSET #1

FOR JACK L. MCCLELLAN

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. C
CASE NO. 4352





BOX 4125

79701

PHO. MU 2-2762

MAY 22, 1970

MR. JACK L. McCLELLAN
P. O. Box 848
ROSWell, NEW MEXICO 88201

RE: INTERFERENCE TEST AND RESERVOIR
LIMIT TEST - MAY 4-14, 1970.
JACK L. McCLELLAN - PATRICK #1
DALPORT OIL CORP. - SUNSET #1

DEAR SIR:

IN ACCORDANCE WITH INSTRUCTIONS FROM MR. RALPH VINEY AND WITH THE APPROVAL OF YOUR OFFICE CAPTIONED TESTS WERE PERFORMED AND RESULTS INCLUDED HEREIN. THE DATA IS ALL REPORTED IN TABULAR FORM AS MR. VINEY WANTED TO PLOT THE CURVES IN HIS OWN WAY FOR PRESENTATION AT THE HEARING.

THE ABOVE TESTS WERE CONDUCTED USING PROPER TECHNICAL AND PRACTICAL PROCEDURES. THE BOTTOM HOLE PRESSURE INSTRUMENTS WERE AMERADA TYPE RPG-3 GAUGES. THESE WERE IN GOOD CALIBRATION AT START OF TESTS AND WERE STILL IN GOOD CALIBRATION AT TERMINATION OF THE JCS.

THE STATIC BOTTOM HOLE PRESSURE TESTS, UNDER V., VI., & VII. WERE ALL TAKEN WITH THE SAME INSTRUMENT (#109) IN ORDER TO INDICATE, AS CORRECTLY AS POSSIBLE, THE TRUE RELATIVE WELL PRESSURES. ALSO, THE STATIC BOTTOM HOLE PRESSURE OF THE PATRICK #1, WITH THIS INSTRUMENT, CHECKS THE B.H.P. OF 656 PSI MEASURED WITH INSTRUMENT (#102) AT THE END OF THE 48 HR. BUILD-UP AT EXACTLY 656 PSI. THIS SHOULD ALSO VERIFY GOOD CALIBRATION.

AT NO TIME DID ANY EVIDENCE OF COMMUNICATION APPEAR IN THE TESTS. THIS CAN READILY BE OBSERVED BY EXAMINING THE DATA PRESENTED. TO SOME, THE MAXIMUM SHUT-IN BOTTOM HOLE PRESSURES WOULD BE AN INDICATION OF COMMUNICATION. THE PATRICK #1 HAD A PRESSURE OF 669 PSI AT THE START OF THE TESTS, WHEREAS THE SUNSET #1 HAD A FINAL SHUT IN PRESSURE OF 659 PSI. ORDINARILY, IN ANY GIVEN AREA, BOTTOM HOLE PRESSURE IS USUALLY A FUNCTION OF DEPTH. THIS WOULD GIVE EACH WELL THE SAME VIRGIN PRESSURES AT A COMMON DATUM POINT. THE PATRICK #1 HAS BEEN A SHUT-IN GAS WELL, WHEREAS THE SUNSET #1 HAS BEEN ON PRODUCTION FOR A SHORT WHILE AND COULD EASILY LOSE 10 PSI IN BOTTOM HOLE PRESSURE. IN OTHER WORDS, THIS SMALL PRESSURE DIFFERENTIAL WOULD NOT INDICATE CONTINUITY OF THE RESERVOIR.

I TRUST THAT THESE TESTS WERE CONDUCTED AND THE DATA PRESENTED TO YOUR SATISFACTION. I DO APPRECIATE THE OPPORTUNITY OF BEING ABLE TO DO THIS FOR YOU.

YOURS VERY TRULY

Harry E. Legendre
HARRY E. LEGENDRE

HEL/v

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JACK L. MCCLELLAN - PATRICK #1
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LIMIT TEST
- III. JACK L. MCCLELLAN - PATRICK #1
48 HR. BUILD-UP TEST AFTER FLOW TEST
- IV. DALPORT OIL CORPORATION - SUNSET #1
INDIVIDUAL WELL DATA DURING INTERFERENCE TEST AND RESERVOIR
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- V. JACK L. MCCLELLAN - PATRICK #1
STATIC BOTTOM HOLE PRESSURE TEST
- VI. DALPORT OIL CORPORATION - SUNSET #1
STATIC BOTTOM HOLE PRESSURE TEST
- VII. JACK L. MCCLELLAN - LISA "A" - 2
STATIC BOTTOM HOLE PRESSURE TEST



BOX 4125

PHO. MU 2-2762

79701

INTERFERENCE TEST AND RESERVOIR
LIMIT TEST - CHAVES CO., N.M.JACK L. MCCLELLAN - PATRICK #1 - WILDCAT
DALPORT OIL CORP. - SUNSET #1 - DOUBLE L FIELD

BHP @ +1940 - PSIG

DATE & TIME	PATRICK #1	SUNSET #1	REMARKS
5-4-70 12:40 PM			BOMB ON BOTTOM IN SUNSET #1, WITH WELL FLOWING ON A 19/64" ADJ. CHOKE AT RATE OF 121 BBLs./DAY
1:35 PM	669		BOMB ON BOTTOM IN PATRICK #1, WITH WELL SHUT IN (SEVERAL MONTHS)
2:30 PM	669	618	FLOWING BHP IN SUNSET #1, CLOSE WELL IN FOR BUILD-UP (SEE INDIVIDUAL WELL DATA FOR DETAILS)
5-7-70 12:15 PM	669	650	PULL BOMB - SUNSET #1
1:05 PM	669	650	BOMB BACK ON BOTTOM - SUNSET #1
1:35 PM	669	650	PULL BOMB - PATRICK #1
2:00 PM	669	650	BOMB BACK ON BOTTOM - PATRICK #1
2:30 PM	669	650	OPEN PATRICK #1 TO FLOW THROUGH 2" CRITICAL FLOW PROVER WITH 5/8" ORIFICE PLATE. (SEE INDIVIDUAL WELL DATA FOR DETAILS)
3:00 PM	497	650	PATRICK #1 FLOWING CLOSE TO 4 MMCF PER DAY RATE
5-9-70 1:05 PM			PULL BOMB - SUNSET #1 (48 HR. RUN)
1:30 PM		654	BOMB BACK ON BOTTOM - SUNSET #1 (WITH 24 HR. CHART)
2:30 PM	481	654	PATRICK #1 FLOWING AT RATE OF 3626.8 MCF/DAY.
5-10-70 1:20 PM		656	PULL BOMB - SUNSET #1
2:20 PM			BOMB BACK ON BOTTOM - SUNSET #1
3:00 PM		656	PULL BOMB - PATRICK #1
3:35 PM	467	656	BOMB BACK ON BOTTOM - PATRICK #1, WELL FLOWING AT RATE OF 3611.7 MCF/DAY
5-12-70 3:30 PM		659	PULL BOMB FOR END OF TEST - SUNSET #1
5:15 PM	458		PULL BOMB - PATRICK #1
5:40 PM	458		BOMB BACK ON BOTTOM - PATRICK #1
6:10 PM	458		CLOSE PATRICK #1 IN FOR 48 HR. BUILD-UP TEST, FLOW RATE AT SHUT-IN WAS 3595 MCF/DAY. (SEE INDIVIDUAL WELL DATA FOR DETAILS)
5-14-70 6:10 PM	656		PULL BOMB - PATRICK #1 - END OF TEST



BOX 4125

79701

PHO. MU 2-2762

11.

JACK L. McCLELLAN
PATRICK #1 - WILDCAT
SW/4 Sec. 12 - T15S - R29E
CHAVES COUNTY, NEW MEXICO

QUEEN SAND - PERFORATED INTERVAL 1964 - 1985
PRODUCTION - DRY GAS

INDIVIDUAL WELL DATA DURING INTERFERENCE TEST AND RESERVOIR LIMIT TEST
MAY 4, 1970 - MAY 14, 1970

DATE & TIME	ELAPSED TIME - HOURS (SHUT IN)	BHP @ +1940 PSIG	REMARKS
5-4-70 1:35 PM	0:00	669	BOMB ON BOTTOM - DWT: T. PR. 628 PSI; C. PR. 628#
	71:50	669	(WELL SHUT IN FOR SEVERAL MONTHS)
	72:25	669	PULL BOMB TO CHANGE CHART
			BOMB BACK ON BOTTOM
5-7-70 2:30 PM	72:55	669	OPEN WELL, FLOWING THROUGH 2" CRITICAL FLOW PROVER WITH 5/8" ORIFICE PLATE, THROUGH CASING.
5-7-70 2:30 PM	(FLOWING)		
	0:00	669	OPEN WELL ON 2" X 5/8" CRITICAL FLOW PROVER
	0:30	497	WELL FLOWING
	1:00	495	DITTO
	2:00	492	"
	4:00	490	"
	8:00	489	"
	12:00	486	"
	16:00	486	"
	24:00	481	"
	36:00	473	"
	48:00	471	"
	60:00	470	"
	71:15	467	RATE 3611 MCF/DAY - PULL BOMB, DID NOT SHUT WELL IN.
	73:00	467	BOMB BACK ON BOTTOM WITH NEW CHART, WELL FLOWING
	85:00	466	WELL FLOWING
	97:00	465	DITTO
	109:00	459	"
	121:00	458	"
	122:45	458	RATE 3595 MCF/DAY - PULL BOMB WITHOUT CLOSING WELL IN.
5-12-70 6:10 PM	123:15	458	BOMB BACK ON BOTTOM WITH NEW CHART.
	123:45	458	CLOSE WELL IN FOR BUILD-UP TEST. (SEE FOLLOWING PAGE FOR BUILD-UP DATA.)



BOX 4125

79701

PHO. MU 2-2762

JACK L. McCLELLAN
PATRICK #1 - WILDCAT
SW/4 SEC. 12 - T15S - R29E
CHAVES COUNTY, NEW MEXICO

48 HR. BUILD-UP TEST AFTER FLOW TEST

DATE & TIME	ELAPSED TIME - HOURS	BHP @ +1940 PSIG	REMARKS
6-14-70 6:10 PM	(SHUT IN) 0:00	458	WELL FLOWING AT RATE OF 3595 MCF/DAY; CLOSE WELL IN FOR BUILD-UP TEST
	1:00	628	WELL CLOSED IN
	2:00	633	DITTO
	3:00	635	"
	4:00	638	"
	6:00	641	"
	8:00	644	"
	10:00	647	"
	12:00	649	"
	14:00	650	"
	16:00	652	"
	18:00	653	"
	20:00	655	"
	24:00	656	"
	27:30	657	"
	29:15	657	"
	30:00	652	"
	32:00	653	"
	36:00	653	"
	38:00	654	"
	40:00	655	"
	44:00	655	"
	48:00	656	" - END OF TEST - PULL BOMB.



BOX 4125

PHO. MU 2-2762

79701

DALFORT OIL CORPORATION
 SUNSET #1
 DOUBLE L FIELD
 SE/NE SEC. 12 - T15S - R29E
 CHAVES COUNTY, NEW MEXICO

QUEEN SAND - PERFORATED INTERVAL 1978-83; 1990-92¹/₂
 PRODUCTION - OIL

INDIVIDUAL WELL DATA DURING INTERFERENCE TEST AND RESERVOIR LIMIT TEST
 MAY 4, 1970 - MAY 14, 1970

DATE & TIME	ELAPSED TIME - HOURS	BHP @ +1940 PSIG	REMARKS
5-4-70 2:30 PM	0:00	618	FLOWING BHP, WELL FLOWING AT RATE OF 121 BOPD ON 19/64" ADJ. CHOKE, CLOSE WELL IN FOR BUILD-UP.
	0:30	620	WELL SHUT IN
	1:00	622	DITTO
	2:00	623	"
	4:00	624	"
	8:00	631	"
	12:00	632	"
	16:00	636	"
	20:00	637	"
	28:00	639	"
	36:00	643	"
	44:00	645	"
	52:00	646	"
	60:00	648	"
5-7-70 12:15 PM	69:45	650	" - PULL BOMB TO CHANGE CHART
5-7-70 1:05 PM	70:35	650	BACK ON BOTTOM WITH NEW CHART.
	93:00	651	WELL SHUT IN
	117:00	654	DITTO
	129:00	656	"
5-10-70 1:30 PM	141:30	656	PULLED BOMB - BACK ON BOTTOM WITH NEW CHART.
	153:30	656	WELL SHUT IN.
	165:30	656	DITTO
	177:30	659	"
5-12-70 3:30 PM	189:30	659	" - END OF TEST - PULL BOMB.



304 S. PECOS

PHO. MU 2-2762

BOX 4125

BOTTOM HOLE PRESSURE RECORD

OPERATOR JACK L. MCCLELLAN FIELD WILDCAT
DATE 5-14-70 WELL PATRICK #1

WELL DATA

Status SHUT IN 48½ HRS.

Tbg. Press. 608# DWT Csg. Press. 608# DWT

Depth Feet	Pressure PSI	Gradient PSI/Ft.
SURFACE	608	
1000	629	.021
1968 (3) DATUM	656	.028

Temp. @ 1968 Ft. = 87 Degrees F.
Top of: Fluid NONE REC. Water NONE RECORDED
Last B.H. Test NO PREVIOUS BHP
BHP Change
Chart No. 15631 Inst. No. 109
Run By HEL

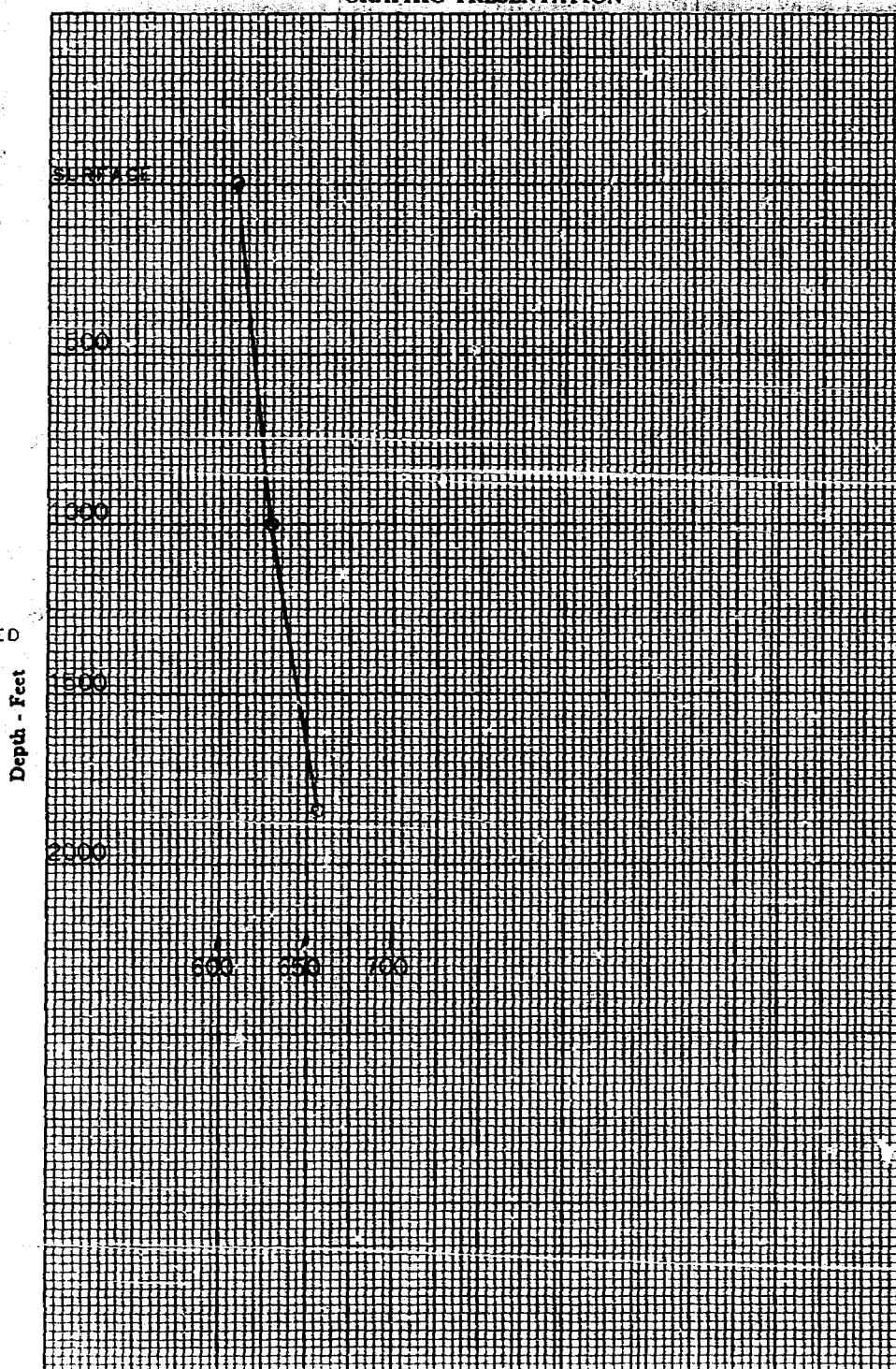
WELL INFORMATION

Elevation	DF	3908	GR
Datum	+1940	Csg. Perf.	1964-1985
Formation	QUEEN SAND		
Packer @	S.N. @		
Bottom of Tubing	2" @ 1855' (O.E.)		
Maximum Safe Test Depth	1968'		

FOOT NOTES

1. Extrapolated Pressure
2. Hit Obstruction
3. Self Compensating Element (No. Temp. Correction)
4. Corr. for Temperature
5. Corr. for U-Tube Effect

GRAPHIC PRESENTATION



BHP - PSIG



304 S. PECOS

PHO. MU 2-2762

BOX 4125

BOTTOM HOLE PRESSURE RECORD

OPERATOR DALPORT OIL CORPORATION

FIELD DOUBLE L

DATE 5-10-70

WELL SUNSET #1

WELL DATA

Status SHUT IN 142 HRS.

Tbg. Press. 95# Csg. Press.

Depth Feet	Pressure PSI	Gradient PSI/Ft.
SURFACE	95	
300	96	.003
600	175	.026
1000	316	.353
1500	493	.354
1952 (3)	656	.361
DATUM		

Temp. @ 1952 Ft. = 87 Degrees F.

Top of Fluid 377 Water *NONE RECORDED

Last B.H. Test NO PREV. BHP

BHP Change

Chart No. 15628 Inst. No. 109

Run By HEL

*WATER IN BOMB TRAP

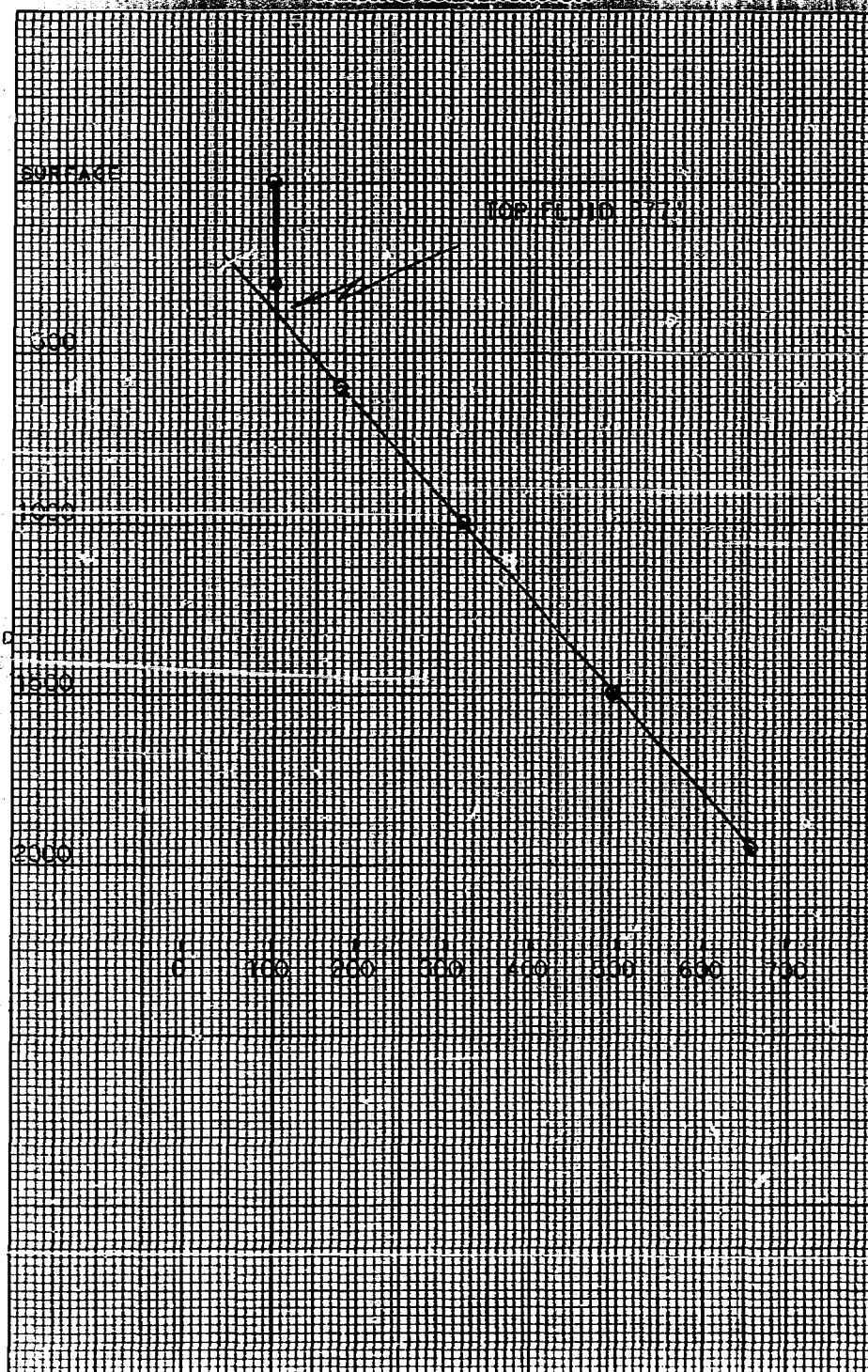
WELL INFORMATION

Elevation	DF	3892	GR
Datum	+1940	Csg. Perf.	1978-1983; 1990-1992 ¹
Formation	QUEEN SAND		
Packer @	S.N. @		
Bottom of Tubing	2" EUE @ 1952 (O.F.)		
Maximum Safe Test Depth	1952'		

FOOT NOTES

1. Extrapolated Pressure
2. Hit Obstruction
3. Self Compensating Element (No. Temp. Correction)
4. Corr. for Temperature
5. Corr. for U-Tube Effect

GRAPHIC PRESENTATION



BHP - PSIG



304 S. PECOS

PHO. MU 2-2762

BOX 4125

BOTTOM HOLE PRESSURE RECORD

OPERATOR JACK L. McCLELLAN

FIELD SULIMAR

DATE 5-14-70

WELL LISA "A" - 2

WELL DATA

Status SHUT IN 80 HRS.

Tbg. Press. 247# Csg. Press.

Depth Feet	Pressure PSI	Gradient PSI/Ft.
SURFACE	247	
500	250	.006
1000	255	.010
1500	260	.010
1976 (2 & 3)	267	.015
1993 (1) DATUM	270	(.360) EST

Temp. @ Ft. = Degrees F.
 Top of: Fluid *1969 Water NONE RECORDED
 Last B.H. Test NO PREV. BHP
 BHP Change
 Chart No. 15629 Inst. No. 109
 Run By HEL

*CALCULATED - OIL IN BOMB TRAP.

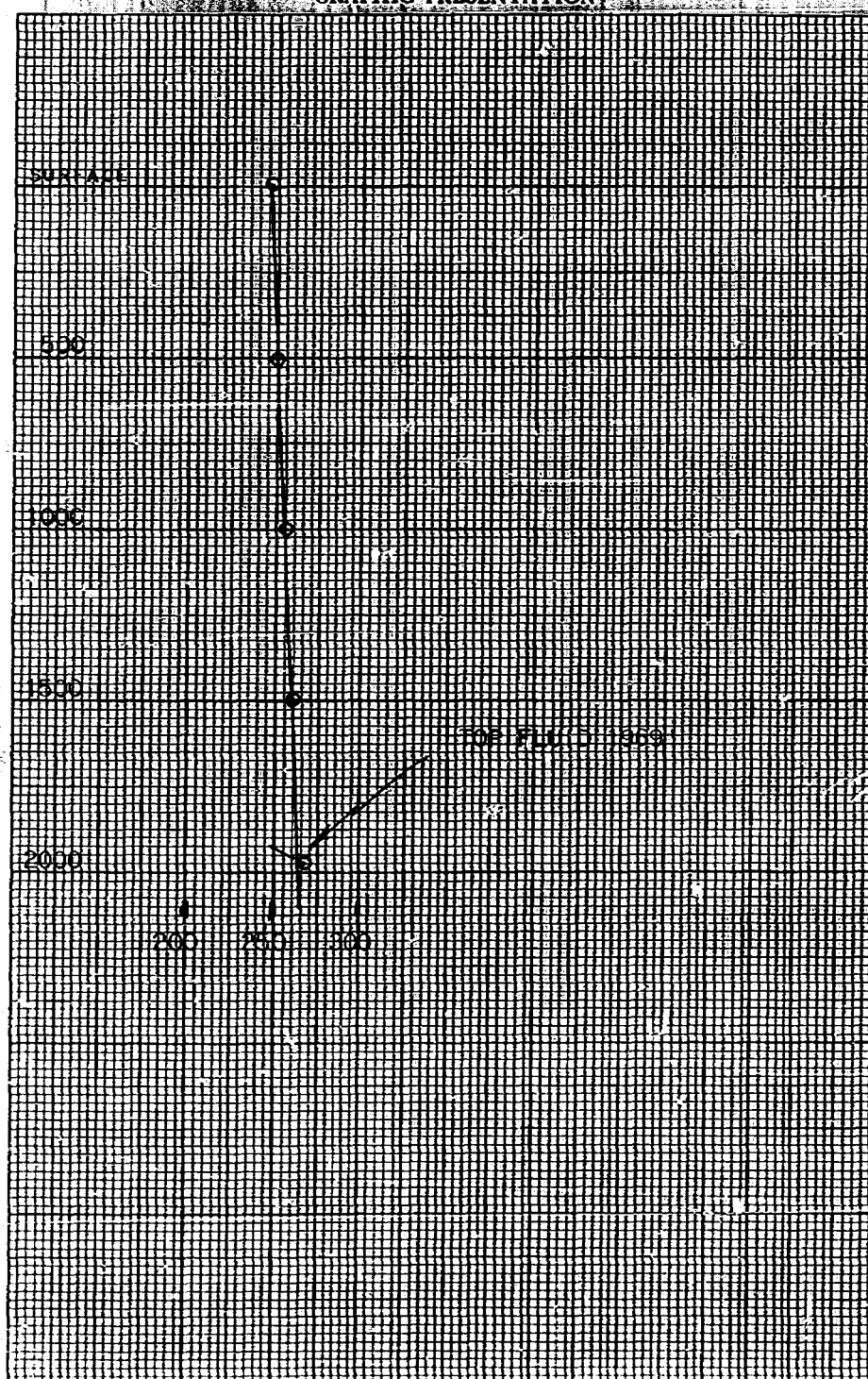
WELL INFORMATION

Elevation	DF	3933	GR
Datum	+1940	Csg. Perf.	1972 - 1979
Formation	QUEEN SAND		
Packer @	S.N. @		
Bottom of Tubing	2" EUE @ 1961'		
Maximum Safe Test Depth	1976		

FOOT NOTES

1. Extrapolated Pressure
2. Hit Obstruction
3. Self Compensating Element (No. Temp. Correction)
4. Corr. for Temperature
5. Corr. for U-Tube Effect

GRAPHIC PRESENTATION



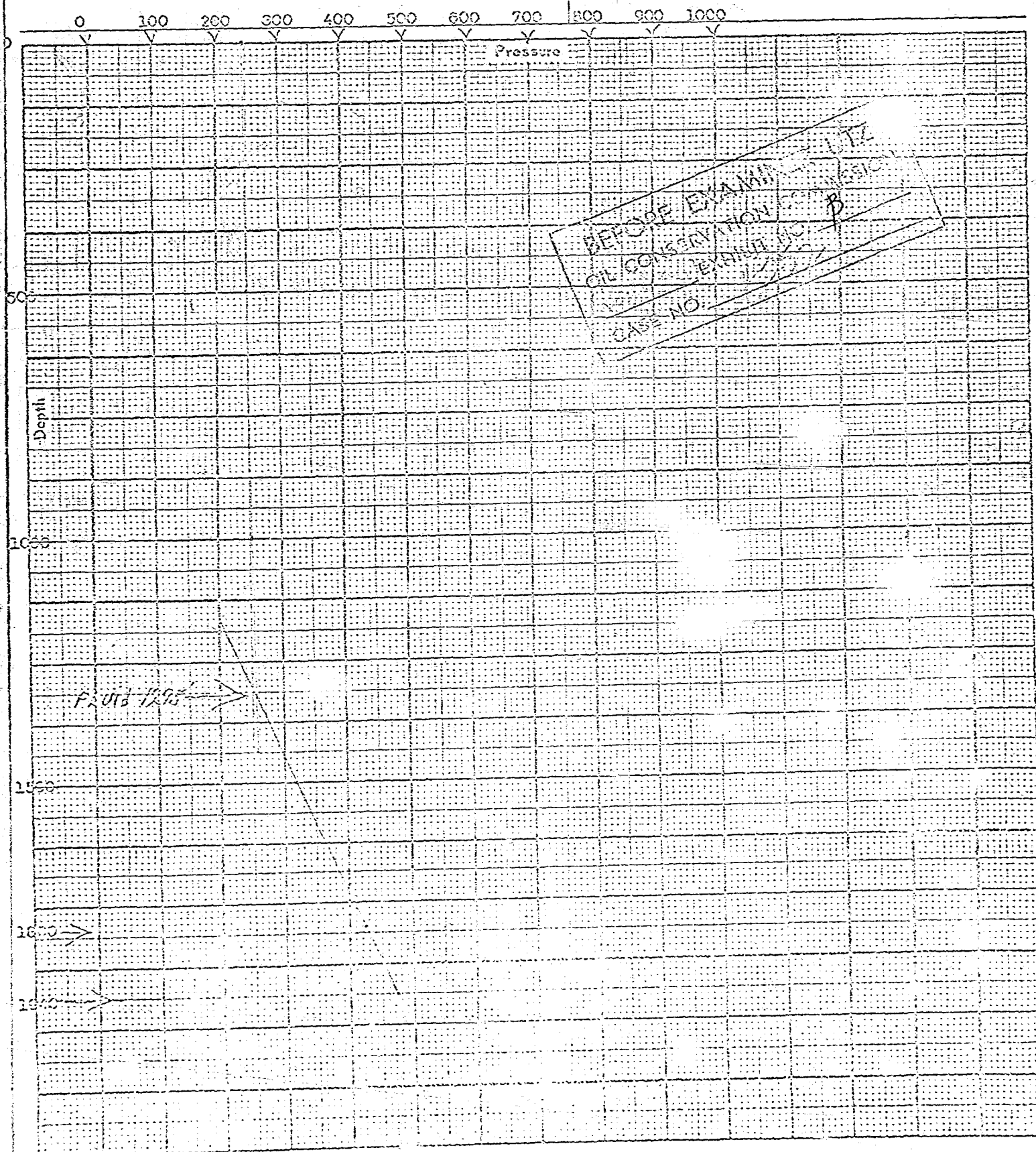
BHP - PSIG

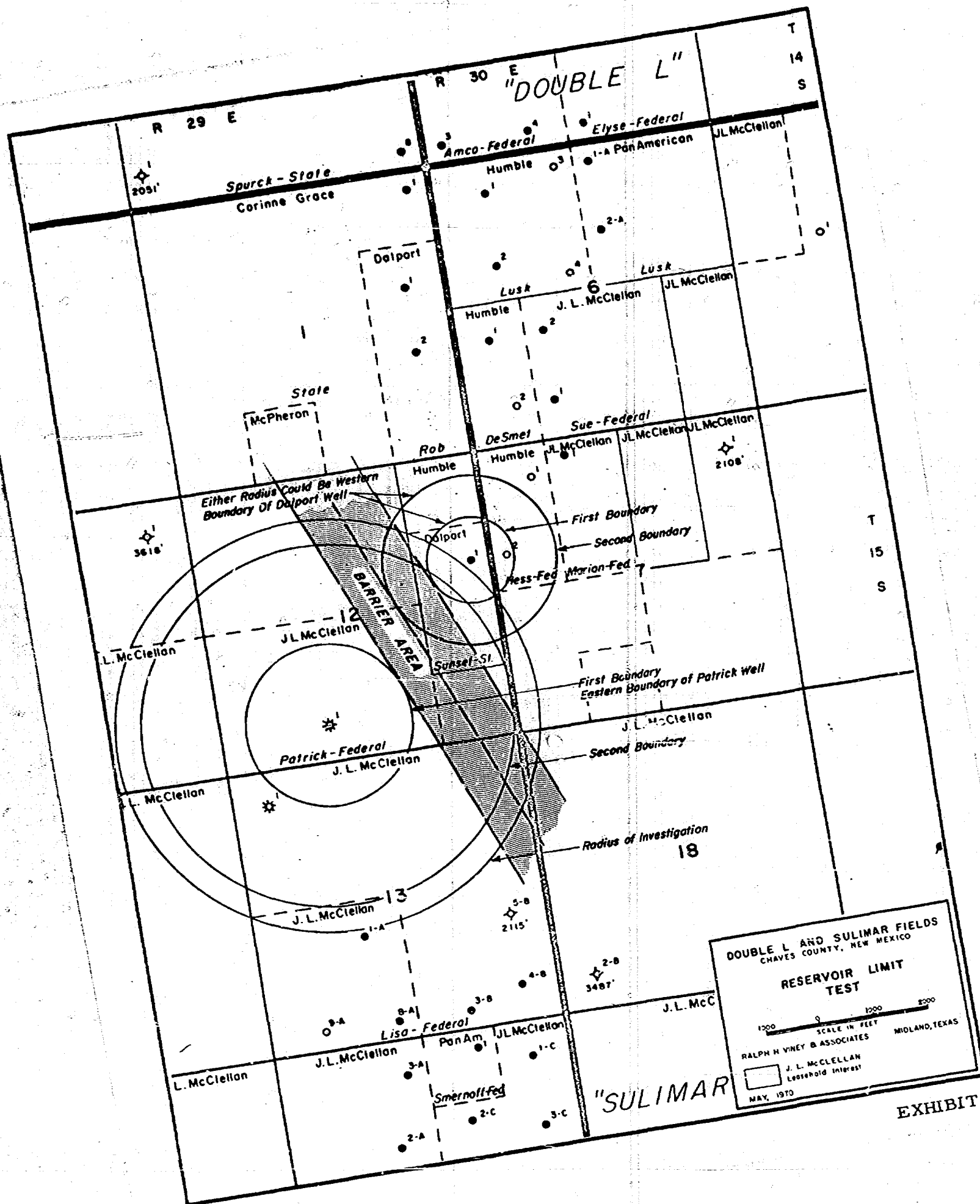
BOTTOM HOLE PRESSURE SURVEY REPORT

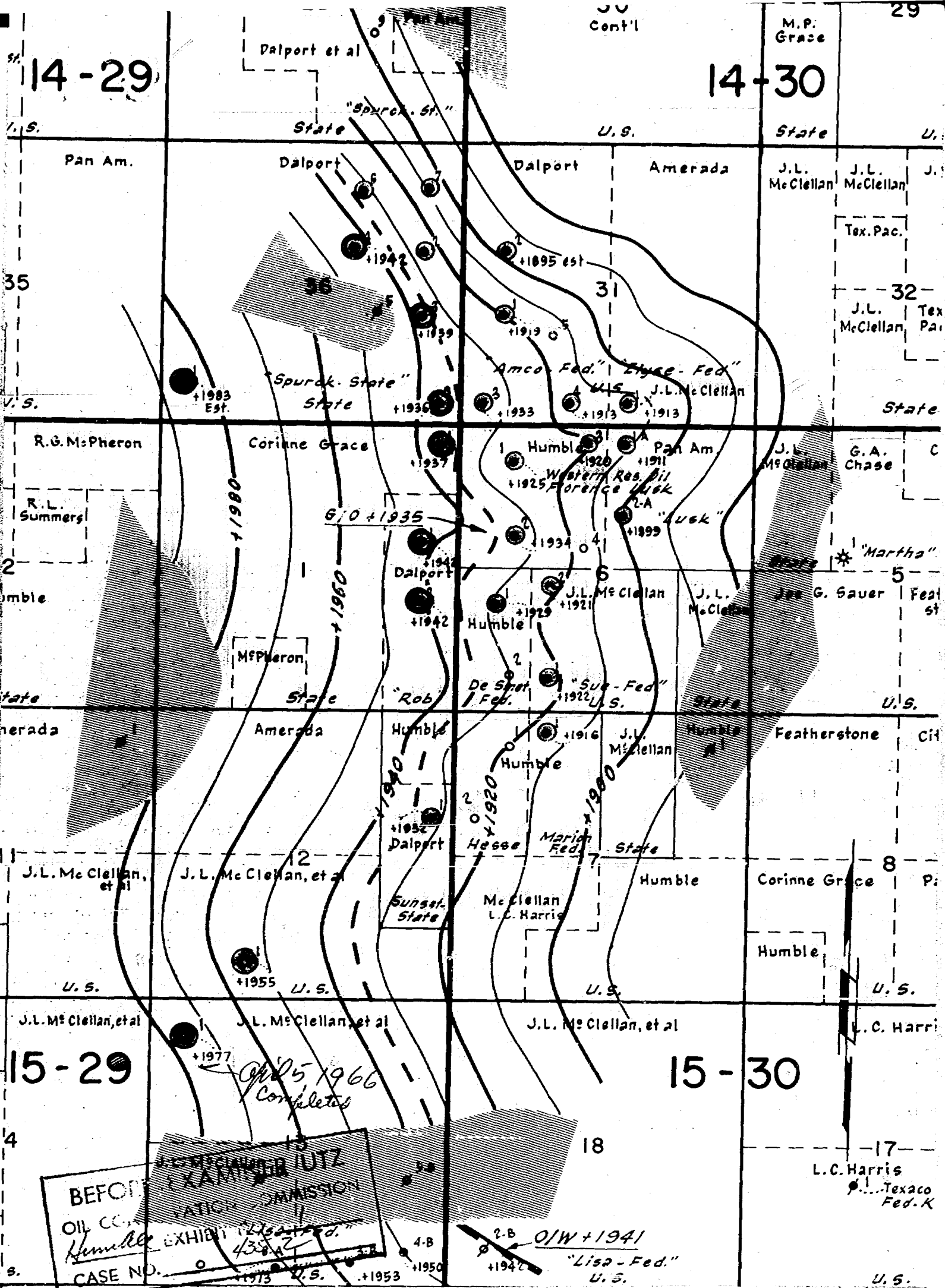
OPERATOR JACK L. MCCORMAN
 LEASE LISA "A"
 WELL NO. 9
 FIELD _____
 DATE 5/25/70 TIME _____
 STATUS Shut-in TEST DEPTH 1940 ft.
 TIME S.I. 72 hrs. LAST TEST DATE _____
 CAS. PRES. _____ BHP LAST TEST _____
 TUB. PRES. _____ BHP CHANGE _____
 ELEV. _____ FLUID TOP 1295 ft.
 DATUM _____ WATER TOP None
 TEMP _____ RUN BY E.D. Bennett
 CLOCK NO. _____ GAUGE NO. 413
 ELEMENT NO. 413

DEPTH	PRESSURE	GRADIENT Lbs./100 lbs.
0 ft.	245 lbs.	
500 "	248 "	00.6
1000 "	252 "	00.8
1500 "	319 "	13.4
1800 "	426 "	35.7
1940 "	476 "	35.7

Humble & B







Volumetric gas equivalent of a top allowable oil well
producing at dissolved gas-oil ratio (335 SCF/bbl.)

$$V = (Q) \left(\frac{T_{sc}}{T_{res}} \right) \left(\frac{P_{res}}{P_{sc}} \right) \left(\frac{1}{Z} \right) (B_o) (5.61)$$

Where

$$Q = 75 \text{ B/D}$$

$$T_{sc} = 60^\circ\text{F}$$

$$T_{res} = 80^\circ\text{F (est)}$$

$$P_{res} = 745 \text{ psia (at +1940 feet subsea)}$$

$$P_{sc} = 15.02 \text{ psia}$$

$$Z = 0.949$$

$$B_o = 1.07 \text{ (est)}$$

$$V = (75) \left(\frac{520}{540} \right) \left(\frac{745}{15.02} \right) \left(\frac{1}{0.949} \right) (1.07) (5.61)$$

$$V = 23 \text{ Mcf/D}$$

BEFORE EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
EXHIBIT NO.	4
CASE NO.	4952

Value of an acre-foot of oil and
an acre-foot of gas in the Double "L" Pool

Oil:

$$\text{Oil value per acre-foot} = (7758)(\text{porosity})(1-S_w)\left(\frac{1}{B_{oi}}\right)(\text{Recovery efficiency})(\text{oil value})$$

porosity = 24%
 S_w = 30% est
 B_{oi} = 1.07 est
 Recovery efficiency = 30% (est. primary + secondary)
 Oil value = \$3.10/STB

$$\text{Oil value per acre-foot} = (7758)(0.24)(1-0.30)\left(\frac{1}{1.07}\right)(0.30)(3.10)$$

$$= \$1100 \text{ per acre-foot}$$

Gas:

$$\text{Gas value per acre-foot} = (43,560)(\text{porosity})(1-S_w)\left(\frac{T_{sc}}{T_{res}}\right)\left(\frac{P_{res}}{P_{sc}}\right)\left(\frac{1}{Z}\right)(\text{Recovery efficiency})(\text{gas value})$$

porosity = 24%
 S_w = 30% est
 T_{sc} = 60°F
 T_{res} = 80°F
 P_{res} = 745 psia
 P_{sc} = 15.02 psia
 Z = 0.949
 Recovery efficiency = 85%
 Gas value = 0.07 \$/Mcf (60% Nitrogen)

$$\text{Gas value per acre-foot} = (43,560)(0.24)(1-0.30)\left(\frac{520}{540}\right)\left(\frac{745}{15.02}\right)\left(\frac{1}{0.949}\right)(0.85)\left(\frac{0.07}{1000}\right)$$

$$= \$22 \text{ per acre-foot}$$

$$\frac{\text{Value of one acre-foot of oil}}{\text{Value of one acre-foot of gas}} = \frac{1100}{22} = 50$$

BEFORE EXAMINER UTZ
 OIL CONSERVATION COMMISSION
 EXHIBIT NO. _____
 CASE NO. 4/352

Recommended Special Pool Rules
Double "L" Pool
Humble Oil & Refining Company

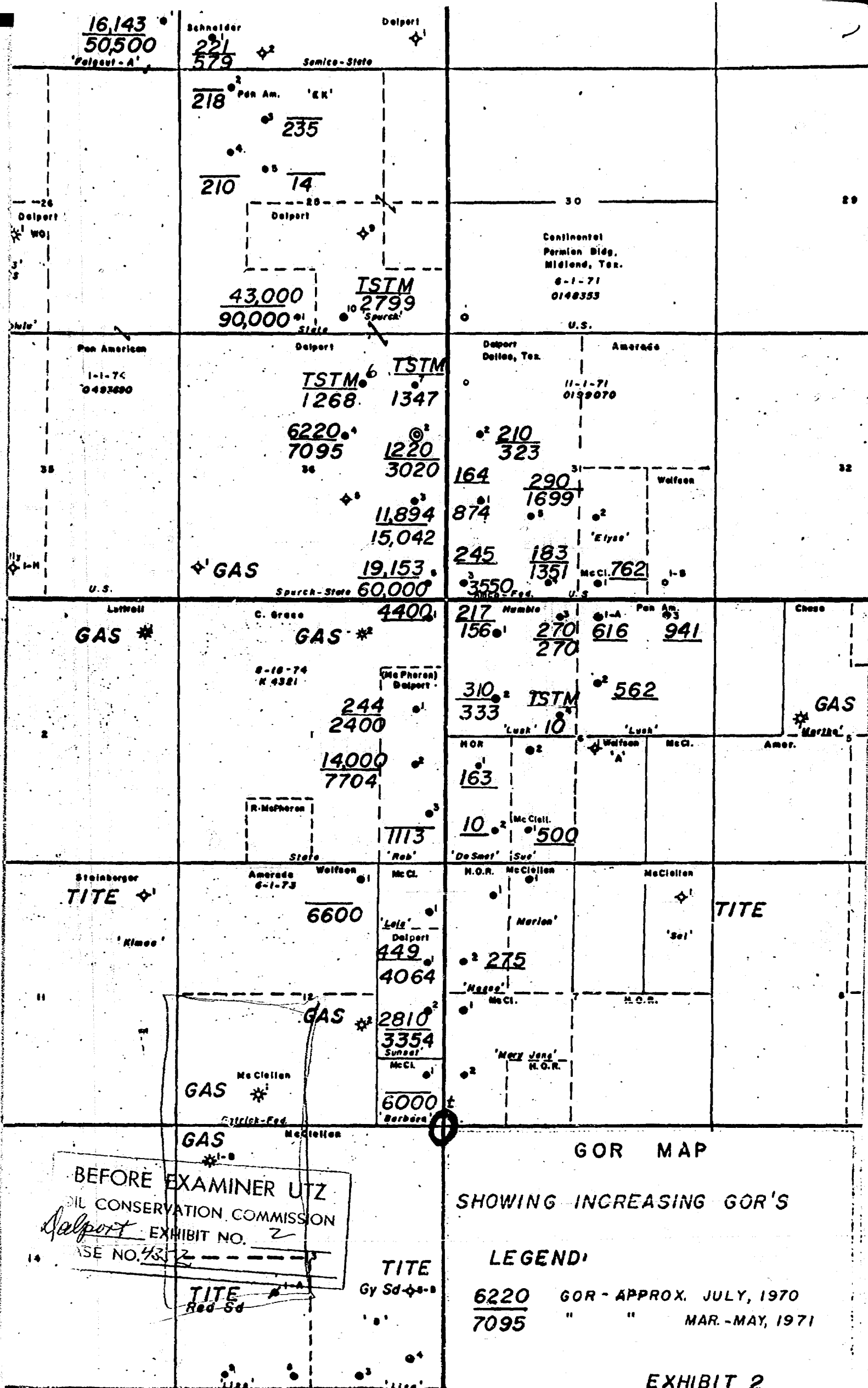
Recommended Provisions:

1. 40-Acre spacing for oil wells, with wells to be located not closer than 330 feet to the boundary of a governmental quarter-quarter section or lot, nor closer than 660 feet to the nearest well producing from the same pool.
2. 160-Acre spacing for gas wells, with wells to be located not closer than 660 feet to the boundary of a governmental quarter-quarter section or lot, nor closer than 1320 feet to the nearest well producing from the same pool.
3. A gas well to be defined as a well producing with a gas-oil ratio in excess of 100,000 cu. ft./bbl.
4. The penalty gas-oil ratio for oil wells to be 2000 cu.ft./bbl.
5. Allowable gas well production to be based on oil zone withdrawals using a formula similar to that adopted for the Bluit-San Andres Associated Pool. Recommended values of the oil-formation volume factor, dissolved gas-oil ratio and gas deviation factor for use in the withdrawal formula are tabulated below as a function of reservoir pressure. A semi-annual bottomhole pressure requirement is recommended for all oil and gas wells (by pressure bomb or sonic fluid level). A 24-hour shut-in period and pressure datum of +1930 feet subsea are also recommended.
6. These rules be made temporary for a period of 1 year.

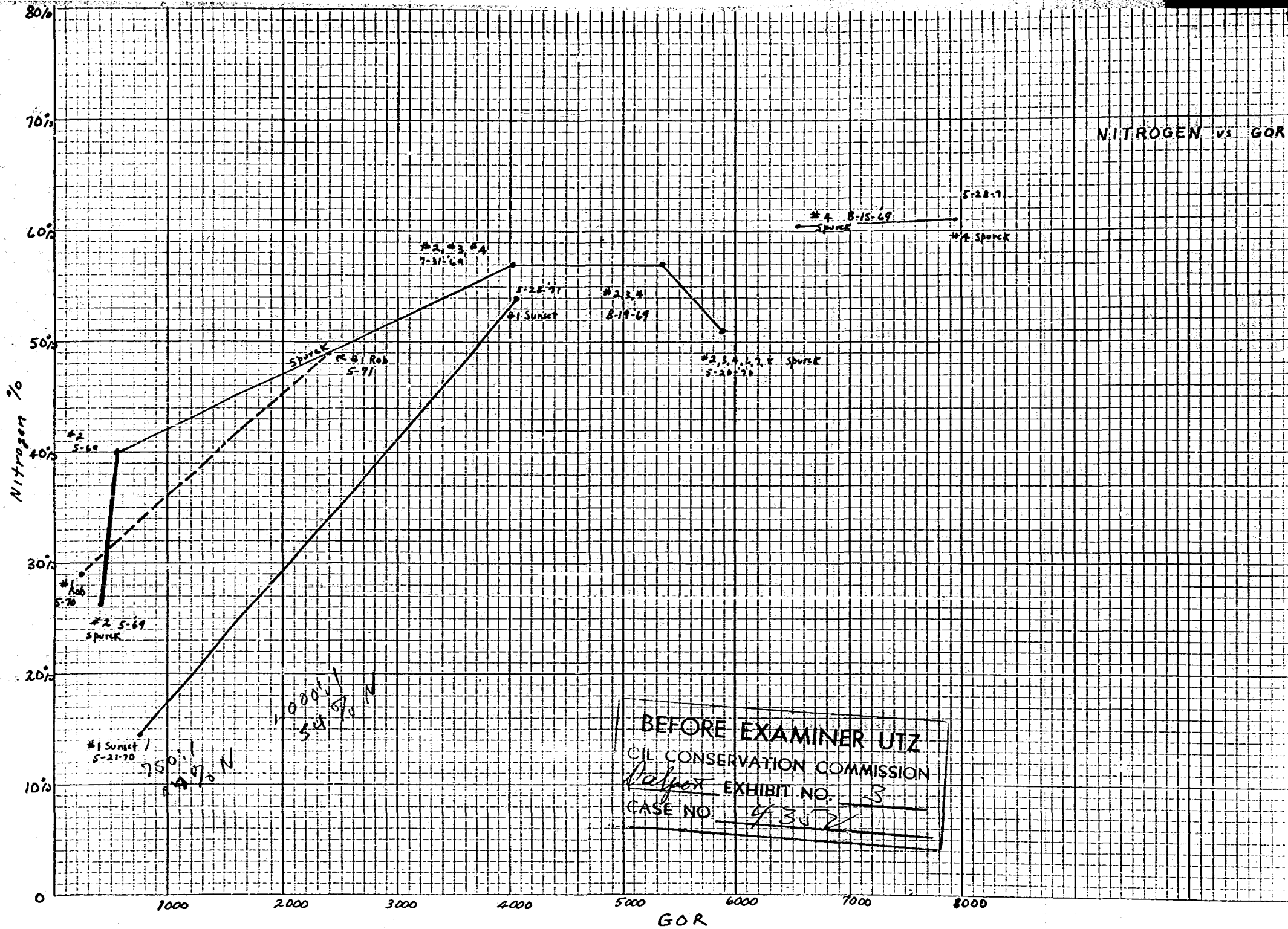
Estimated Double "L" Fluid Properties

Pressure	B _o	R _s	Z
700	1.066	335	0.950
600	1.061	328	0.956
500	1.056	313	0.963
400	1.051	298	0.970
300	1.045	282	0.977
200	1.038	267	0.984
100	1.031	257	0.991

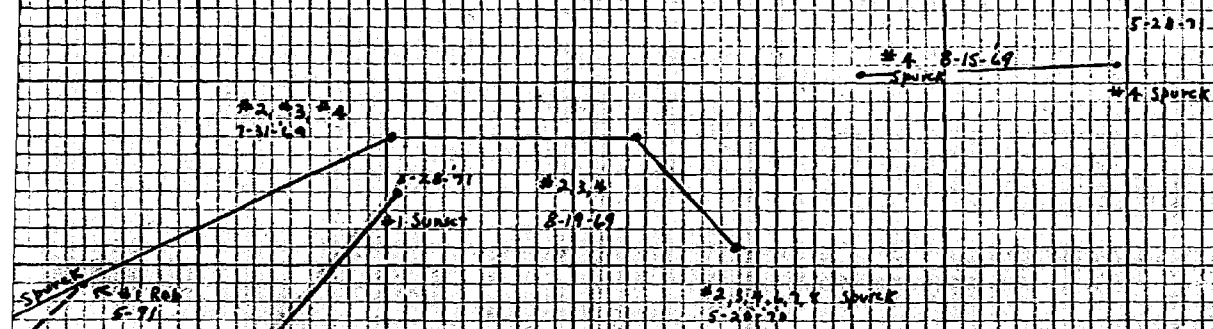
BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 6
CASE NO. 4552



KE 10 X 10 TO THE INCH 359-5LG KEUFFEL & ESSER CO. MADE IN U.S.A.



NITROGEN vs GOR



1000
500
250
125
62.5
31.25
15.625
7.8125
3.90625
1.953125
0.9765625
0.48828125
0.244140625
0.1220703125
0.06103515625
0.030517578125
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JASON W. KELLAHIN
ROBERT E. FOX

KELLAHIN AND FOX
ATTORNEYS AT LAW
54 1/2 EAST SAN FRANCISCO STREET
POST OFFICE BOX 1769
SANTA FE, NEW MEXICO 87501

April 6, 1970

'70 APR 7 PM 1 08

TELEPHONE 982-4315
AREA CODE 505

Case 4352

Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico

Re: Jack L. McClellan

Gentlemen:

Please set a hearing date for the enclosed application of Jack L. McClellan for creation of a new pool for gas production, Chaves County, New Mexico, or in the alternative, for the establishment of pool rules for the Sulimar and the Double L Queen Pools, Chaves and Lea Counties, New Mexico, and advise us of the date of hearing.

Yours very truly,

Jason W. Kellahin

Jason W. Kellahin

jwk;jh

cc: Mr. Jack L. McClellan

Enclosures: Original and two of application.

DOCKET MAILED

Date 5-14-70
(for May 27th hearing)

DOCKET MAILED

DOCKET MAILED

Date 4-30-70

Date 4-17-70

*George 10 Test revised
Testimony - Double L-Case*

HISTORY:

Case #4352 was an application of Jack L. McClellan for creation of a new gas pool in T-15-S, R-29-E, Chaves County or, the establishment of special pool rules for two existing pools in Chaves County, providing for the classification of oil and gas wells and the establishment of spacing units and an allocation formula for both oil & gas wells.

3. The area, then in question, is shown on Commission Exhibit 1.

Testimony and evidence presented at a hearing before Commission Examiner Elvis A. Utz, May 27, 1970, indicated that a permeability or porosity barrier existed along the near west margin of the Double L Pool and between the Double L & Sulimar Pools.

As a result of the hearing, the Suble-Queen Gas Pool was created in the SW/4, Section 12 & NW/4 Section 13, T-15-S, R-29-E,

4. Subsequent to orig. hearing, wells completed in and near supposed barrier ^{between the Double L & Suble Pools} cast doubt as to its existence.

5. Because of these completions a re study was made. Results indicated this case should be reopened, new evidence heard, original conclusions re-evaluated.

*More incorp of entire record
from prev. hearing - and that entire
rec. be considered by*

Intent of this hearing.

To establish if the classical reservoir pattern, gas cap updip, oil in middle, water down dip in strat trap reservoir exists in double L area.

And if so, to suggest establishment of an associated gas/oil pool and special pool rules classifying oil & gas wells, setting up spacing and well location requirements and an allocation formula.

Testimony & discussion of exhibits.

MAP AREA AROUND SULIMAR, DOUBLE L & SUBLE QUEEN GAS POOL

- (1) Pools outlined in color
- (2) Wells identified as to ownership, lease name, #
- (3) Wells outside 3 pools have prod. fm. or show identified
- (4) P&A wells show TD
- ((5) Any last minute changes)

EXHIBIT 1

1. Same base map, Structure contour top Q, not Q pay to as it varies as much as 10 feet.
(Note Anhy & Dolo zone at top pay)
2. Shows line of X Sections A-A' & B-B'
3. Shows GOR by color code
4. Separation Double L, Sulimar, Dry holes N&W Sulimar, water S & E, Prod. horizon 40-50 ft higher in Sulimar
5. Point out significant wells *8 miles S of pool*
 JLM Lisa B #1 CAOF 4,285 MCFD
 JLM Patrick #1, CAOF 6,613 MCFD
 JLM Patrick #2, CAOF 6 to 9 MMCFD
 Luttrell Oil Co. St. #1 CAOF, 714 MCFD
 Corrinne Grace St. #2 est. 1 MMCFD + Gas shows in 26, 35 & 36-14-29
Note wells completed in or near barrier area
 High GOR wells on up dip side of pool.
 GOR information ^{indicating cap} showing ~~cup~~ migrating east.
6. Note chase well comp. 10-13' below Double L Pay.
7. Note other shows NE & W showing similar situation, oil down dip, gas up

EXHIBIT 2

8. Dry holes on near east side of Double L were in general absolutely dry indicating to me that the oil zone generally extends almost to the reservoir limits except possibly on the south or north ends.

~~9. Note well comp. barrier area after orig. hearing.~~

EXHIBIT 2. (continued)

E. 1. 1 3 & 4
A-A' & B-B'

1. Shows fm top & pay top, tite stringer
2. Show continuity of fm. N to S & E to W, *is str. but position.*
3. Show perms or dsts.
4. ~~Logs indicate tite stringers (but do not do to good a job of it).~~
5. ~~Show structural position of wells.~~
6. Gas-oil-water contacts?
7. Point out did not show porosity barrier between sunset & Patrick as shown in original hearing.

EXHIBITS 3 and 4

Show meaning & how prepared.

1. Under water sand dunes or banks & troughs.
2. Reservoir limits appear to ^{*roughly follow the*} be ~~near~~ 2' contour line.
3. Original sand bank, as contoured, covered area now including both oil & gas zones

EXHIBIT 5

In my opinion the Double L, Suble & Sulimar-Queen reservoirs represent back reef, lagoonal type shallow water sand banks. Red sands and other continental or near shore sediments were moved into this area by wind and water action. Tidal currents, currents of fresher water moving toward the sea to the south or, other water currents, washed the sediments, building under water sand banks similar to wind blown dunes. The currents worked & reworked the sands, cleaning them, carrying off the finer material. This fine material and relatively un reworked red sands were deposited at the margins of the banks. The pore spaces between these relatively unwashed edge sediments were likely smaller originally and therefore, the affect of later or concurrent deposition of salt, anhydrite and dolomite was to make the bank margins essentially impermeable.

Periods of decreased current activity and/or increased evaporation resulted in the deposition of less porous & permeable zones or beds in the main body of the Queen pay sand. Such a tite streak may be seen on Exhibits No. 3 & 4.

Varying permeabilities & porosities, above and below the tite zone(s), can result in off set wells producing non proportionate volumes of fluids from the two zones, increasing the difficulty of making valid reservoir studies.

It should also be noted that possible poor cement jobs and heavy frac jobs, may have broken down the tite zone, facilitating the movement of fluids between the more porous zones.

Potential for Sale of Gas Well Gas

1. Indications of interest by Natural Gas Pipeline Co. at original hearing.
2. Received a call from El Paso Natural requesting gas well data this area.
3. Indications, unofficial, from Phillips that they might be interested in taking gas well gas within a year.
A figure of 240 MCFD/per well mentioned.

Conclusions

1. Sulimar-Queen Pool is separate reservoir with no apparent extensive gas cap. Needs no special pool rules at this time.
2. Suble-Queen Gas Pool represents a portion of gas cap, up dip and in connection with the Double L-Queen Pool.
3. Double L reservoir is a complex depositional feature which likely exhibits non uniform migration of fluids to & between wells. In my opinion there is no impermeable barrier on the near west side of the Double L field separating the oil from the gas.

4. The Suble-Queen Gas Pool should be abolished, the Double L-Queen Pool declared an associated reservoir & expanded to take in the following described acreage

T-15-S, R-29-E:

Section 1: W/2 & W/2 E/2
Section 2: NE/4
Section 12: W/2, SW/4 NE/4, W/2 SE/4
Section 13: NW/4

or

Section 1: NW/4 & W/2 NE/4
Section 2: NE/4
Section 12: SW/4 & W/2 SE/4
Section 13: NW/4

5. That in order to provide each operator in the Double L-Queen associated pool an opportunity to produce his just & equitable share of oil and/or gas under his property, special pool rules should be established.

READ RULES?

DRAFT

GMH/esr
June 15, 1970

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

RECORDS CENTER

CASE No. 4352

Order No. R-3981
NOMENCLATURE

APPLICATION OF JACK L. McCLELLAN
FOR THE CREATION OF A NEW GAS POOL
OR, IN THE ALTERNATIVE, THE ESTAB-
LISHMENT OF POOL RULES FOR TWO
EXISTING POOLS, CHAVES AND LEA
COUNTIES, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 13, 1970,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this day of June, 1970, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

(1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.

(2) That the applicant, Jack L. McClellan, is the owner
and operator of certain wells in and near the Double L-Queen and
Sulimar-Queen Pools, Chaves and Lea Counties, New Mexico.

(3) That the applicant seeks the creation of a new gas pool
for Queen production in Chaves County, New Mexico, comprising the
following-described acreage:

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM

Section 11: SE/4

Section 12: SW/4

Section 13: NW/4

Section 14: E/2

Section 23: NE/4 and SW/4

the evidence presently available indicates that

-2-

CASE No. 4352

(4) That in the event the Commission finds a new gas pool has not been discovered, applicant seeks, as an alternative, the promulgation of special rules for said Sulimar-Queen and Double L-Queen Pools as separate or as consolidated pools, including provisions for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and an allocation formula for withdrawals by oil and gas wells.

(5) That the Jack L. McClellan Patrick ^{Lisa} ~~Federal~~ Well No. 1, located 660 feet from the ^{North} ~~South~~ line and 1660 feet from the West line of Section ¹³ ~~12~~, Township 15 South, Range 29 East, NMPM, Chaves County, New Mexico, having its top perforations at ¹⁹⁵⁹ ~~1964~~ feet, has discovered a separate common source of supply which should be designated the Suble-Queen Gas Pool; that the vertical limits of said pool should be the Queen formation ~~as found in the interval from~~
 ~~_____ feet to _____ feet on the log of the aforesaid Patrick~~
 ~~Federal Well No. 1~~; and that the horizontal limits of said pool should be the SW/4 of Section 12 and the NW/4 of Section 13, Township 15 South, Range 29 East, NMPM, Chaves County, New Mexico.

the horizontal limits

(6) That if the casinghead gas from said Sulimar - Queen and Double L-Queen ~~the~~ Pools is not being regulated at the end of 90 days from the date of this order, the Commission should on its own motion set a hearing to permit all operators in said pools to appear and show cause why the venting or flaring of said casinghead gas should not be prohibited. (under)

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

(12)
JAN
DRAFT

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF CASE 4352 BEING REOPENED
BY THE OIL CONSERVATION COMMISSION UPON
ITS OWN MOTION TO GIVE ALL INTERESTED
PERSONS AN OPPORTUNITY TO APPEAR AND
PRESENT EVIDENCE TO WHETHER THE Doubled-Queen

AND Suble-Queen
POOLS, CHAVES COUNTY, NEW MEXICO, ARE IN FACT
SEPARATE RESERVOIRS OR ONE COMMON RESERVOIR.

CASE NO. 4352
Order No. R-3981-A

*Nomenclature
Records Center*
ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on June 30, 1971,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this August day of 1971, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

(1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.

(2) That Order No. R-3802, dated August 1, 1969,
created the Doubled-Queen Pool, Chaves County, New
Mexico, and promulgated ~~Special Rules and Regulations therefor.~~

(3) That Order No. R-3981, dated June 18, 1970,
issued in case No. 4352, this
created the Suble-Queen Pool, Chaves County, New Mexico,
and promulgated ~~temporary Special Rules and Regulations therefor.~~

(4) That Case No. ~~4352~~ 4352 was reopened by the Oil Conservation Commission on its own motion to give all interested persons an opportunity to appear and present evidence as to whether or not the Double L-Queen Pool and Suble-Queen Gas Pool, Chaves County, New Mexico, are in fact separate reservoirs or one common reservoir and, further, in the event it was found that the two pools comprised one common reservoir, the Commission to ~~consider~~ consider the adopting of special rules and regulations to provide for the classification of oil and gas wells, specifying well location requirements for oil and gas wells, and an allocation formula for withdrawal from the gas wells and oil wells.

Pool.

(6) That while the said Double L-Queen ~~Gas~~ Pool is presently classified as ~~a gas~~ ^{an oil} pool, the evidence adduced indicates it is, in fact, an associated oil and gas reservoir.

(7) That the Double L-Queen ^{(Oil) Pool and the} ~~Suble-Queen Gas~~ ~~Oil~~ Pool and the Special Rules and Regulations governing said pools should be abolished.

(8) That a new pool in Chaves County, New Mexico, classified as an associated pool for the production of oil and gas from the Queen formation and designated the Double L-Queen Associated Pool should be created and Special Rules and Regulations should be promulgated therefor.

(9) ~~that~~ That the reservoir characteristics of the subject pool indicate that the gas area can be efficiently and economically drained and developed on 160-acre spacing, and that the oil area can be efficiently and economically drained and developed on 40-acre spacing.

(10) ~~that~~ That the reservoir characteristics of the subject pool presently available justify the definition of a gas well as a well producing with a gas-liquid ratio of 30,000 or more cubic feet of gas per barrel of liquid hydrocarbons.

(11) ~~that~~ That the reservoir characteristics of the subject pool presently available justify the establishment of a gas-liquid ratio limitation of ~~4000~~³⁰⁰⁰ cubic feet of gas per barrel of liquid hydrocarbons.

(12) ~~that~~ That ~~temporary~~ special rules and regulations providing for 160-acre gas well spacing and 40-acre oil well spacing should be promulgated for the subject pool in order to prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, prevent reduced recovery which might result from the drilling of too few wells, and otherwise prevent waste and protect correlative rights.

(13) ~~that~~ That the ~~temporary~~ special rules and regulations should provide for the classification of a gas well as a well producing with a gas-liquid ratio of 30,000 or more cubic feet of gas per barrel of liquid hydrocarbons and should provide for a gas-liquid ratio of 2000 cubic feet of gas per barrel of liquid hydrocarbons ~~until such time as the pool has gas gathering and transportation facilities, and thereafter a limiting gas-oil ratio of 4000 to 1,~~ in order to afford to the owner of each property in the pool the opportunity to produce his just and equitable share of the oil or gas, or both, and for this purpose to use his just and equitable share of the reservoir energy.

(14) ~~that~~ That the temporary special rules and regulations should establish proration rules for gas wells in order to prevent waste and protect correlative rights.

Township 14 South, Range 29 East, N.M.P.M.

Section 23: SE $\frac{1}{4}$ SE $\frac{1}{4}$ ✓

Section 24: SW $\frac{1}{4}$ SW $\frac{1}{4}$ ✓

Section 25: NW $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, and SW $\frac{1}{4}$ SE $\frac{1}{4}$ ✓

Section 36: NE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$, and SE $\frac{1}{4}$ SE $\frac{1}{4}$ ✓

Township 14 South, Range 30 East, N.M.P.M.

Section 31: S $\frac{1}{2}$ NW $\frac{1}{4}$ and S $\frac{1}{2}$ ✓

Township 15 South, Range 29 East, N.M.P.M.

Section 1: E $\frac{1}{2}$ E $\frac{1}{2}$ ✓

Section 12: E $\frac{1}{2}$ and SW $\frac{1}{4}$ ✓

Section 13: NW $\frac{1}{4}$ ✓

Township 15 South, Range 30 East, N.M.P.M.

Section 6: N $\frac{1}{2}$ and SW $\frac{1}{4}$ ✓

Section 7: W $\frac{1}{2}$ ✓

~~PROPOSED~~ RULES - DOUBLE L-QUEEN
ASSOCIATED POOL

September 1, 1971

(3) That, effective ~~the date of this order~~ *associated* Special Rules and Regulations for the Double L-Queen Pool, Chaves County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE *associated*
DOUBLE L-QUEEN POOL

RULE 1. Each well completed or recompleted in the Double L-Queen Pool or in the Queen formation within one mile thereof, and not nearer to or within the limits of another designated Queen pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. (a) Each gas well shall be located on a standard unit containing 160 acres, more or less, substantially in the form of a square, which is a quarter section being a legal subdivision of the United States Public Land Surveys.

~~Rule 2.~~ (b) Each oil well shall be located on a standard unit containing 40 acres, more or less, consisting of a governmental quarter-quarter section.

RULE 3. The Secretary-Director of the Commission may grant an exception to the requirements of Rule 2 (a) without notice and hearing when an application has been filed for a non-standard unit and the unorthodox size or shape of the unit is necessitated by a variation in the legal subdivision of the United States Public Land Surveys, or the following facts exist and the following provisions are complied with:

- (a) The non-standard unit consists of quarter-quarter sections or lots that are contiguous by a common bordering side.
- (b) The non-standard unit lies wholly within a governmental quarter section and contains less acreage than a standard unit.

BEFORE EXAMINER UTZ	
IL CONSERVATION COMMISSION	
ACC	EXHIBIT NO. 6
CASE NO.	52

- (c) The applicant presents written consent in the form of waivers from all offset operators and from all operators owning interests in the quarter section in which the non-standard unit is situated and which acreage is not included in said non-standard unit.
- (d) In lieu of paragraph (c) of this rule, the applicant may furnish proof of the fact that all of the aforesaid operators were notified by registered or certified mail of his intent to form such non-standard unit. The Secretary-Director may approve the application if no such operator has entered an objection to the formation of such non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. Each well, oil or gas, shall be located no nearer than 330 feet to any quarter-quarter section line, except that any well drilled in a known gas productive area shall be located within 150 feet of the center of a quarter-quarter section.

RULE 5. A well shall be ^{30,000}classified as a gas well if it has a gas-liquid ratio of ~~100,000~~ or more cubic feet of gas per barrel of liquid hydrocarbons. A well shall be classified as an oil well if it has a gas-liquid ratio of less than ~~100,000~~ ^{30,000} cubic feet of gas per barrel of liquid hydrocarbons. The simultaneous dedication of any acreage to an oil well and a gas well is prohibited.

RULE 6. That the limiting gas-oil ratio shall be 2000 cubic feet of gas for each barrel of oil produced.

RULE 7. An oil well which has ~~40~~ ^{only that} acres dedicated to it shall be permitted to produce ~~an~~ amount of gas determined by multiplying the top unit oil allowable for the pool by the limiting gas-liquid ratio for the pool. In the event there is more than one oil well on a 40-acre oil proration unit, the operator may produce the allowable assigned to the 40-acre unit from the wells on the unit in any proportion.

A gas well shall be permitted to produce that amount of gas obtained by multiplying the top unit oil allowable for the pool by the limiting gas-liquid ratio for the pool and by a fraction, the numerator of which is the number of acres dedicated to the particular gas well and the denominator of which is 40. In the event there is more than one gas well on a 160-acre gas proration unit, the operator may produce the amount of gas assigned to the unit from the wells on the unit in any proportion.

RULE 8. The operator of each newly completed well shall cause a gas-liquid ratio test to be taken on the well upon recovery of all load oil from the well, provided however, that in no event shall the test be commenced later than 30 days from the date of first production unless the well is connected to a gas-gathering facility and is producing under a temporary gas allowable assigned in accordance with Rule 11. Any well which is shut in shall be exempted from the gas-liquid ratio test requirement so long as it remains shut in. The initial gas-liquid ratio test shall be taken in the manner prescribed by Rule 9. If the gas-liquid ratio is ~~100,000~~ ^{200,000} cubic feet of gas per barrel of liquid hydrocarbons, or more, the operator shall not produce the well until beneficial use can be made of the gas.

RULE 9. Gas-liquid ratio tests shall be taken on all wells during the months of March, ~~July & November~~ ^{September} of each year. The initial gas-liquid ratio test shall suffice as the first semi-annual test. Tests shall be 24-hour tests, being the final 24 hours of a 72-hour period during which the well shall be produced at a constant normal rate of production. Results of such tests shall be filed on Commission Form C-116 on or before the 10th day of the following month. At least 72 hours prior to commencement of any such gas-liquid ratio tests, each operator shall file with the appropriate district office of the Commission a test schedule for its wells specifying the time each of its wells is to be tested. Copies of the test schedule shall also be furnished to all offset operators. Commission District supervisors may grant exceptions to the above test requirements where it is demonstrated that wells produce no liquids.

Special tests shall also be taken at the request of the Secretary-Director and may also be taken at the option of the operator. Such special tests shall be taken in accordance with the procedures outlined hereinabove, including notification to the Commission and offset operators.

RULE 10. An initial shut-in pressure test shall be taken on each gas well and shall be reported to the Commission on Form C-125.

RULE 11. Any well completed after the effective date of these rules shall receive an allowable only upon receipt by the appropriate Commission district office of Commission Forms C-104 and C-116, properly executed. The District Supervisor of the Commission's district office is hereby authorized to assign a temporary gas allowable to wells connected to a gas transportation facility during the recovery of load oil, which allowable shall not exceed the number of cubic feet of gas obtained by multiplying the daily top unit allowable for the pool by the limiting gas-liquid ratio for the pool.

RULE 12. Balancing dates shall be 7 o'clock a.m. January the first and 7 o'clock a.m. July the first, and the periods of time bounded by these dates shall be gas proration periods.

RULE 13. Any gas well which has an underproduced status as of the end of a gas proration period shall be allowed to carry such underproduction forward into the next gas proration period and may produce such underproduction in addition to the allowable assigned during such succeeding period. Any allowable carried forward into a gas proration period and remaining unproduced at the end of such gas proration period shall be cancelled.

RULE 14. Production during any one month of a gas proration period in excess of the allowable assigned to a well for such month shall be applied against the underproduction carried into such period in determining the amount of allowable, if any, to be cancelled.

RULE 15. Any well which has an overproduced status as of the end of a gas proration period shall carry such overproduction forward into the next gas proration period, provided that such

overproduction shall be compensated for during such succeeding period. Any well which has not compensated for the overproduction carried into a gas proration period by the end of such proration period shall be shut in until such overproduction is compensated for. If, at any time, a well is overproduced an amount equalling three times its current monthly allowable, it shall be shut in during that month and each succeeding month until the well is overproduced less than three times its current monthly allowable.

RULE 16. The allowable assigned to a well during any one month of a gas proration period in excess of the production for the same month shall be applied against the overproduction carried into such period in determining the amount of overproduction, if any, which has not been compensated for.

RULE 17. The Commission may allow overproduction to be compensated for at a lesser rate than would be the case if the well were completely shut in upon a showing after notice and hearing that complete shut in of the well would result in material damage to the well or reservoir.

RULE 18. The monthly gas production from each gas well shall be metered separately and the gas production therefrom shall be reported to the Commission on Form C-115 so as to reach the Commission on or before the 24th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the produced gas.

RULE 19. Each purchaser or taker of gas shall submit a report to the Commission so as to reach the Commission on or before the 15th day of the month next succeeding the month in which the gas was purchased or taken. Such report shall be filed on Form C-111 with the wells being listed in the same order as they are listed on the oil proration schedule.

RULE 20. Failure to comply with any provision of these rules shall result in the immediate cancellation of allowable assigned to the affected well. No further allowable shall be assigned until all rules and regulations have been complied with. The Secretary-Director shall notify the operator of the well and purchaser in writing of the date of allowable cancellation and the reason therefor.

RULE 21. All transporters or users of gas shall file gas well-connection notices with the Commission as soon as possible after the date of connection.

RULE 22. Allowables to wells whose classification has changed from oil to gas or from gas to oil as the result of a gas-liquid ratio test shall commence on the first day of the month following the month in which such test was reported, provided that a plat (Form C-102) showing the acreage dedicated to the well and the location of all wells on the dedicated acreage has been filed.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the Double L-Queen ^{Associates} Pool or in the Queen formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location shall notify the appropriate district office of the Commission in writing of the name and location of the well on or before ~~August 1, 1971.~~
September 1,

(2) That all operators shall, prior to ~~August 1, 1971,~~ *September 1,* file with the Commission Form C-102 for each well showing the acreage dedicated to the well.

DONE at Santa Fe, New Mexico, on the day and year herein² above designated.

BEFORE THE
OIL CONSERVATION COMMISSION OF NEW MEXICO

76 APR 7 PM 1 03

IN THE MATTER OF THE APPLICATION OF
JACK L. McCLELLAN FOR CREATION OF A
NEW POOL FOR GAS PRODUCTION, CHAVES
COUNTY, NEW MEXICO, OR IN THE
ALTERNATIVE, FOR THE ESTABLISHMENT
OF POOL RULES FOR THE SULIMAR AND
THE DOUBLE "L" QUEEN POOLS, CHAVES
AND LEA COUNTIES, NEW MEXICO.

4352

A P P L I C A T I O N

Comes now Jack L. McClellan, and applies to the Oil Conservation Commission of New Mexico for the creation of a new gas pool for the production of gas from the Queen formation, composed of the SE/4 of Section 11, the SW/4 of Section 12, NW/4 of Section 13, E/2 of Section 14, NE/4 and SW/4 of Section 23, all in Township 15 South, Range 29 East, N.M.P.M., Chaves County, New Mexico.

In the alternative, Applicant applies for the establishment of pool rules for the Sulimar-Queen Pool, Chaves County, New Mexico and the Double L-Queen Pool, Chaves and Lea Counties, New Mexico, with provision for spacing of wells, classification of wells as gas wells or as oil wells.

In support of this application, applicant would show the Commission he is an operator of wells in the two pools in the area, and adjacent thereto; that the above-described area constitutes a separate common source of supply for the production of gas; or in the alternative, that special pool rules should be adopted for the production of gas wells, if said wells are found to be within the vertical and horizontal limits of the Sulimar-Queen, or the Double L-Queen pools, or both.

Approval of this application is in the interests of preventing waste, and is essential for the protection of the correlative rights of the operators and other interest owners in the area.

DOCKET MAILED

Date 5-18-28

Wherefore applicant prays that this application be set for hearing before the Commission, or the Commission's duly appointed examiner, and that after notice and hearing as required by law, the Commission enter its order the relief prayed for.

Respectfully submitted,

JACK L. MCCLELLAN

BY

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