

dearnley-meier reporting service, inc.

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

209 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO

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

December 16, 1970

EXAMINER HEARING

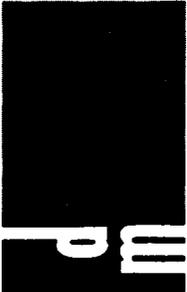
IN THE MATTER OF:)

Application of Tenneco Oil Company)
for the creation of a new pool,)
assignment of discovery allowable,)
and promulgation of special pool)
rules, McKinley County, New Mexico.)

Case No. 4457

BEFORE: Elvis Utz, Examiner

TRANSCRIPT OF HEARING



NEW MEXICO OIL CONSERVATION COMMISSION

REGULAR HEARING

SANTA FE, NEW MEXICO

Hearing Date DECEMBER 16, 1970TIME: 9A.M.

NAME	REPRESENTING	LOCATION
Walter Tammung	Famam Oil	Hobbs
Ed M. Owen	Famam Oil	Hobbs
Austin Famamiss	Famamiss Oil	Hobbs
Phil Tammison	Atlantic Richfield	Midland
Harold Miller	El Paso Natl. Gas	El Paso
L. R. Ryan	Pan American	Tulsa
P. T. M. Grath	U. S. G. S.	Farmington
Nina P. Tolsonie	PLW Bryan & Co.	Santa Fe
J. E. Dameswood	Pan American	Denver
G. C. Kennedy	Ind.	Farmington
H. O. Gustafson	Union Oil	Durango
E. J. Conway Jr.	OTB Co	Dallas
Raymond Glover	ARCO	Midland
M. D. Taylor	Union Oil Corporation	Midland
W. J. Loyd	Navajo Ref.	Artesia
J. H. Jewette	Mobil Oil Corp	Midland

NEW MEXICO OIL CONSERVATION COMMISSION

REGULAR HEARING

SANTA FE, NEW MEXICO

Hearing Date

DECEMBER 16, 1970

TIME: 9 A.M.

NAME	REPRESENTING	LOCATION
Tom Robertson	Admiral Cude	Midland
Ed Dugan	Tamarcis	✓
Fred Hansen	Navajo	Antesca
Chas & Max	Plataca	Farmington
Gov. T. Buell	PAN Am	Fr. WORTH
Tracy B Midden	Shell	Houston
JC York	Shell	Midland
W.A. Miller	"	"
J.J. Savary	Texaco	"
R.K. Tomberlin	Union Oil Co. of Calif	Midland
Klaus J. Meunier	Montgomery Ward	Irish Jc
Don Dugan	Silbert Maxwell	Farmington
M.T. Smith	Navajo Refy	Midland
Dick Booker	Cities Service Oil	
W.A. Jeter	Signal Oil & Gas	Houston
Geo. Eng	Permian	Midland

dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

MR. UTZ: Case 4457.

MR. HATCH: Case 4457. Readvertised from the November 18, 1970, Examiner Hearing. Application of Tenneco Oil Company for the creation of a new pool, assignment of discovery allowable, and promulgation of special pool rules, McKinley County, New Mexico.

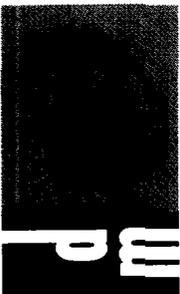
If the Examiner please, this case was heard and testimony was given on November 18, but as there had been a mistake in the advertising of this case in the Santa Fe newspaper, why the applicant was told that the case would have to be readvertised and no order would issue until after it was--came up again for hearing on this date.

MR. UTZ: That was the only reason for calling this case today was an error by a newspaper?

MR. HATCH: Yes, sir.

MR. MORRIS: Mr. Examiner, at this time I would like to enter my appearance in the case. I am Richard Morris of Montgomery, Federici, Andrews, Hannahs and Morris, Santa Fe, appearing on behalf of Gilbert S. Maxwell and Beard Oil Company.

We would like to present evidence in the case at this time or whenever it is appropriate for us to do so.



MR. UTZ: Gilbert S. Maxwell and who?

MR. MORRIS: Beard Oil Company.

MR. UTZ: B-e-a-r-d?

MR. MORRIS: Correct.

MR. UTZ: Are there other appearances?

MR. BATEMAN: Mr. Examiner, I am Ken Bateman of the firm of White, Gilbert, Koch and Kelly, Santa Fe, appearing for the applicant.

MR. UTZ: Tenneco?

MR. BATEMAN: That's correct.

MR. UTZ: Do you have a witness available?

MR. BATEMAN: Yes. I have Mr. Rial who previously testified in the case.

MR. UTZ: Okay. Are there other appearances? Morris should go first, then, shouldn't he?

MR. HATCH: I would suggest that there be a stipulation as to what is to be disputed here and which is to be submitted on the record from last time and the disputed part would ask the applicant to put that part of the case on again.

MR. MORRIS: Mr. Examiner, the procedure suggested by Mr. Hatch would certainly be satisfactory with us. The only portion of the case that is contested by my clients is

the proposed well location requirements of the rules and regulations.

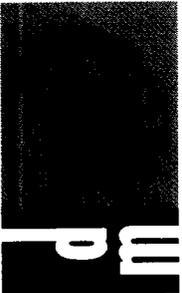
We oppose the fixed well location requirements and ask and will ask the Commission to adopt a flexible well location requirement provision for whatever rules are adopted in this area.

We have no -- also, I might say that we will ask the Commission to grant an exemption to all wells for which applications to drill already have been filed and other than those two matters, we are in agreement with the applicant in this case; that is, we agree with the applicant on the 80-acre spacing and on the allowable that would normally be assigned to wells with 80-acre spacing.

MR. UTZ: Mr. Morris, I think maybe you ought to state which wells have been filed for locations.

MR. MORRIS: These are matters that we would like to bring out in our testimony. However, I would say, just off hand here, that Mr. Maxwell is the operator of the southwest quarter of Section 18 of 17 North, 8 West and has staked two locations, one in the northwest quarter and one in the northeast quarter of that quarter section.

Beard Oil Company has -- is the operator of the southwest quarter of Section 8 and the northwest quarter of



dearnley-meier reporting service, inc.

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

1120 SIMAS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

Section 17 of the same township and has staked a location in the southwest quarter of the southwest quarter of Section 8. All three of those locations have not only been staked but applications for permit to drill have been filed with the USGS.

All of this acreage is Indian land and the application for permit to drill with appropriate acreage dedication plats have been filed and the permits, we understand, have been approved by the USGS and we will ask that no matter what kind of an order is entered by the Commission, that those three wells be exempted from the well location requirements and the acreage dedication requirements of the proposed pool rules with the option to the operators to dedicate 80 acres to those wells if they so desire.

MR. NUTTER: Were those permits filed prior to the November 18 hearing?

MR. MORRIS: I am not informed, Mr. Nutter. I would have to determine. Mr. McGrath of the USGS informs me that they were not.

However, I might say that I am informed that two of these wells, the two Maxwell wells, have been spudded and that the Beard well was either spudded yesterday or is being spudded today pursuant to the authority granted by the USGS.



dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

MR. HATCH: Can you tell the Examiner whether or not Mr. Maxwell or Mr. Beard contacted the Aztec office of the Commission concerning those locations?

MR. MORRIS: I don't know.

MR. HATCH: Could you get that information to the Examiner --

MR. MORRIS: I assume we can find that out.

MR. HATCH: -- and what they were notified of?

MR. MORRIS: Yes.

MR. BATEMAN: Mr. Examiner, I have no objection to the stipulation which has been entered. However, I feel that the applicant Tenneco has already entered on the record its testimony in support of the fixed locations and I feel that in terms of proper procedure at this point then the objection should be entered on the record first.

MR. MORRIS: Mr. Examiner, I think we have to object to that. We have had only about thirty minutes to review the transcript of testimony of the previous hearing because it was not available in the Commission office until about thirty minutes ago and therefore, this being in effect a hearing on this application, I believe the applicant still has the burden of going forward with his testimony and it would be prejudicial to my clients to have to proceed at this

dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

point without having some direct testimony presented with respect to the controverted portion of this application.

We would suggest that the procedure suggested by Mr. Hatch be followed and that Tenneco put on evidence in justification or in support of their fixed location requirements that they are suggesting in their proposed rules.

MR. BATEMAN: Mr. Examiner, I would point out that the error in the advertisement was a technical error. There was certainly public notice of the previous hearing. The testimony is of public record at this point.

It is certainly no fault of the applicant that the opponents have had so little time to review the testimony. I feel it would be duplicatus to re-enter upon the record testimony that has already been given.

I feel that we should hear the objection, have the opportunity to rebut the objection.

MR. UTZ: Mr. Bateman, you are aware of what the objections are at this time, are you not --

MR. BATEMAN: Yes, sir.

MR. UTZ: -- through the stipulation? I agree with everything you have said, but the fact of the matter is, the newspaper did make an error and for that reason, we are here today with the entire case reopened, so I will rule that you

dearnley-meier reporting services, inc

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

put on your testimony as far as the stipulation is concerned and your witness will be subject to cross examination based on his testimony today.

MR. BATEMAN: Thank you.

MR. UTZ: We will continue this case until later and proceed with the others.

(Whereupon, the case was continued to 3:45 P.M.)

MR. UTZ: Case 4457.

MR. HATCH: Case 4457. I think this was called this morning and reset until later.

MR. UTZ: I don't believe the witness was sworn.

MR. HATCH: I think the appearances have already been made though and have one witness.

MR. BATEMAN: One witness, yes. That is correct.

(Whereupon, the witness was sworn.)

A.DEAN RIAL,

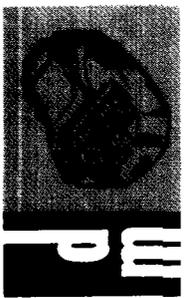
a witness, having been first duly sworn, according to law, upon his oath testified as follows:

DIRECT EXAMINATION

BY MR. BATEMAN:

Q Mr. Rial, would you state your occupation, where you are employed?

A I am District Geological Engineer with Tenneco Oil Company in Denver, Colorado.



dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

Q You have previously testified in this case, have you not?

A Yes, I have.

Q You have testified as to your qualifications?

A Yes, I have.

MR. BATEMAN: Before we proceed, Mr. Examiner, concerning the stipulations entered into this morning, I would like to clarify, if I may, one point. Tenneco has no objection to entering further testimony in the record regarding the question of fixed well locations. And we are going to do that at this time. I want to make it clear that we are certainly not consenting to an exception for well locations which have been approved as of this date or prior to the date the Commission made the order.

MR. UTZ: That was in the stipulation?

MR. BATEMAN: Yes.

Q (By Mr. Bateman) Mr. Rial, would you refer to Exhibit 1, if you have it handy, which has been previously entered into evidence here, which is a data map of the area in question. In referring to that exhibit, would you indicate what the recent well completions are since the date of the previous hearing; what the recent well completions are and what the status is of those wells.

A All right. Since our last appearance, Tenneco has drilled five additional wells in the proposed pool, and I would just like to identify those wells for the record.

The Yazzie No.1 and the Yazzie Lease, if you'd like to make a note of it, Y-a-z-z-i-e, is the northeast quarter of Section 18, 17 North and 8 West.

MR. UTZ: Let me get oriented on this map. 18 northeast? Okay.

A Well No. 1 is located 550 feet from the north line and 2050 feet from the west line. Or, essentially, in the center of the northwest of the northeast of Section 18.

The Yazzi No. 2 was drilled 1700 feet from the north line and 900 feet from the east line of Section 18. Santa Fe Pacific Railroad No. 7, the Yazzie No. 2, is essentially located in the southeast of the northeast of Section 18. Santa Fe Pacific No. 7 is located 1980 feet from the west line and 660 feet from the south line of Section 13, 17 North and 9 West.

MR. UTZ: Would you give me that location?

THE WITNESS: Okay. This is essentially located, approximately located in the south-southeast of the southwest of Section 13.

MR. UTZ: That was the No. 1?

THE WITNESS: That was the No. 7.

A All right. The Santa Fe Pacific Railroad is No. 8 and this is located approximately in the northwest-northwest of Section 24 of 17 North and 9 West, and its exact location --

MR. UTZ: What was the Well number?

THE WITNESS: Oh, that was No. 8.

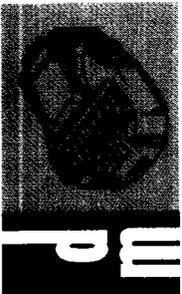
MR. UTZ: 8?

THE WITNESS: Right.

A Its exact location is 640 feet from the west line and 740 feet from the north line of Section 24. We have drilled the Santa Fe Pacific Railroad No. 9. Its approximate location is in the southeast of the northwest of Section 13 of 17 North and 9 West. Its exact location is 2180 feet from the west line and 2180 feet from the north line of Section 13.

Of the wells that have been drilled, the Yazzie No. 1 is a producing well out of the Dakota D zone that is in the northwest of the northeast of Section 18.

The Yazzie No. 2 is a producing well out of the Dakota D zone. The Santa Fe Pacific Railroad No. 7, which is in the southeast of the southwest of Section 13, is a producing well out of the Dakota D zone. Wells, the Santa Fe No. 8 and the Santa Fe Pacific No. 9 are presently testing. Completion operations are in progress at this time. Status of two other wells, the Santa Fe Pacific Railroad No. 6, which is located in the southeast of the northeast of Section 13, has been completed in the Dakota D zone as a gas well. The U.S.A. Lone Pine, which is



in the northwest of the northwest of Section 19, has not been completed at this time. That is the present status of all our wells in the area, the wells Tenneco has recently drilled since our last testimony and the status of the wells subsequent.

Q (By Mr. Bateman) Mr. Rial, have recent wells been drilled in accordance with the proposed rules?

A Yes, they have.

Q Well, in determining well locations, are the reservoir mechanics and performance of the reservoir important considerations?

A Yes, they are, and I think that it might be well to review some of the testimony that was given concerning the reservoir, itself. Just briefly, that it is a saturated reservoir, and this means that the pressure is now below the bubble point. This is, of course, is exhibited by the presence of a gas cap, which was definitely confirmed by the completion of our Santa Fe Pacific Railroad No. 6.

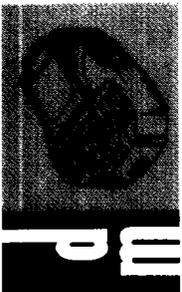
Reservoir mechanics are primarily that of a solution gas drive with possible, minor gas cap expansion.

Performance of the reservoir will be a containing -- and we characterize by a containing decrease in the reservoir pressure and it will also be accompanied by an increase in the gas-oil ratio of the producing wells.

dearnley-meier court reporting service, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATE WITNESSES, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO



Now, the gas-oil ratio will increase exponentially at a rate in that it -- in other words, it will not be a straight line. It will increase considerably with continued pressure drawdown.

Q In view of what you have testified regarding reservoir mechanics, why are fixed well locations desirable?

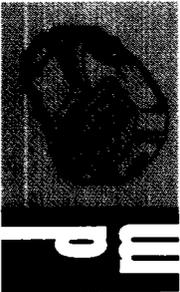
A Well, Tenneco feels that the fixed well location, as specified in the northwest and southeast of each quarter section, will do actually four things. It will provide for the continuity of development, and the exact boundaries of the field have not been defined at this time.

It will provide for equal withdrawals, accompanying with continuity in the pressure drawdown across the reservoir.

Now, testimony has been put on concerning the pressure communication within the reservoir. And since it appears that from the data presented that we are in excellent pressure communication within the reservoir, it is important, we feel, that these withdrawals be on a fixed pattern to provide or to prevent excessive low pressure areas from developing within the reservoir, and which means developing areas of high gas-oil ratio. Of course, this has other effects that it will also increase our total reservoir voidage. Three, we need to

dearnley-meier reporting services, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

Q Will you optimize our secondary recovery of pressure maintenance program. We feel that with the fixed locations that pressure maintenance or secondary recovery will be optimized.

Q Well, what would be the effect of nonstandard location?

A Well, actually we are looking at the effect on two phases of the nonstandard locations. Considering that one; there are pressure -- our gas-oil ratio will increase with pressure drawdown within the reservoir, we feel that ultimate recovery, primary recovery, for instance, will be curtailed by the fact of developing a low pressure area within the reservoir and all wells in the near vicinity go into a high gas-oil ratio, and they will also be curtailed by production. Since we are below the bubble point, this also creates by the problems of creating an abnormally high gas saturation within the immediate vicinity, or of the nonstandard location that well actually increases the gas saturation which will, in effect, be detrimental to either water flooding or gas injection.

We feel that the actual secondary recovery program, which we feel that should be a major consideration within the development of the field, itself, would not be optimized by anything other than fixed location,

fixed well space and equal withdrawals.

Q Specifically, as it may relate to 80-acre allowable, what effect does a nonstandard location have?

A Well, it will -- 80-acre withdrawal will accelerate a pressure drawdown within the vicinity of the wells, if it is adjacent to two standard locations. And as was mentioned previously, it will have the effect of possibly reducing primary recovery and also affecting secondary recovery.

Q Well, what is Tenneco's position regarding the question of nonstandard well locations?

A We strongly recommend that the fixed locations as specified in our application and as now developed by Tenneco Oil Company be approved. We further recommend that the acreage allotted for allowable purposes to any nonstandard or off-pattern locations, be restricted to 40-acres.

Q Well, what is Tenneco's position regarding the requested exception for well locations already approved?

A Our position is that we'd recommend that no exception be granted under the Order in the Field Rules.

Q Your proposal, then, would eliminate the possibility of flexible acreage dedications for nonstandard locations?

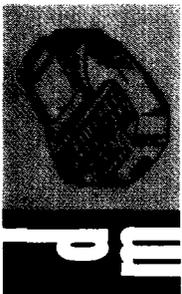
A Yes, it would.

MR. BATEMAN: I have nothing further.

dearnley-meier

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO



MR. UTZ: Are there questions of the witness?

MR. MORRIS: Yes, sir, I have a few.

CROSS-EXAMINATION

BY MR. MORRIS:

Q Mr. Rial, you mentioned that this pool would be a likely candidate for secondary recovery operations of some sort. How far have you developed your present plans for that?

A We have gone as far as running material balanced calculations based on PVT data, special core analysis, in order to try to project the performance with and without injection. We have under consideration now -- We're trying now to decide what is the optimum method, whether it is gas injection, waterflood or pressure maintenance of this type.

Q Have you given any consideration to the type of pattern or the type of drive that you would have in a secondary recovery operation in this area?

A No, we haven't. We haven't developed it to that extent, primarily, because that we are still in the development stages of this field.

Q Have you taken any cores in any of your wells?

A Yes, we have.

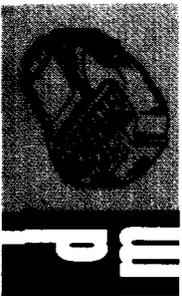
Q Do you find the producing formation to be fractured?

A No, we do not.

dearnley-meier

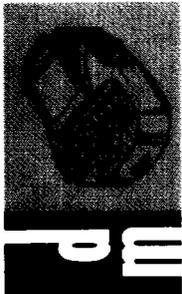
SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO



dearnley-meier reporting services, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

Q You have not found fractures to exist in any of your core data?

A I can't say that we have not found the presence of fractures. This is one thing that we are concerned about, and the best of my knowledge, at this point, without having access to the core analyses themselves, I cannot really say. It was not an apparent conclusion based on our evaluation of the cores.

Q Would the existence of fractures dictate to some extent the type of pattern that you might have in this field on secondary recovery?

A I think that would be more or less speculation, in that we do not feel that the fracturing has any relationship at all to the producing zone.

Q If you considered secondary recovery in here, would one possibility be a line drive type of flood, rather than a five-spot or nine-spot type?

A Actually, you are getting just a little bit out of my field. In our company, this secondary recovery operation is a specialty.

Q Okay. You can't say, then, can you Mr. Rial, that unorthodox locations would impede the pattern for secondary recovery purposes?

A I think from a general standpoint that there is a

dearnley-meier

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

relationship between the spacing and the wells and, say, the recovery prior to breakthrough of any -- whether it is gas injection or water injection. It is definitely a factor.

Q If a line drive type of flood should be adopted in this pool, unorthodox locations would be relatively meaningless and would present no obstacle as far as your secondary recovery project? Is that correct?

A No, they would present an obstacle in the fact that during primary phase of this, they will create an excessive pressure drawdown in the vicinity of the reservoir. This will create high gas saturation which is not conducive to water flooding. It wouldn't -- and the high gas saturation would also be detrimental to any gas injection and result in the, say, premature breakthrough into this area.

Q Mr. Rial, I think you said that the boundaries of this pool are not yet defined?

A This is true.

Q I notice on your exhibit that you have a statement that says, "Oil down to plus 4205." Is that a definite cut-off point in your estimation?

MR. BATEMAN: That would be Exhibit No. 3, I believe --

MR. MORRIS: Exhibit No. 3, excuse me.

MR. BATEMAN: -- which is the structure map.

MR. MORRIS: Excuse me, number 3.

A Would you repeat the question again, please?

Q (By Mr. Morris) Yes, you stated on your direct examination that you did not believe that the boundaries of this pool were defined at the present time. And I am wondering how that statement conforms with the information shown on this exhibit that says -- it shows what appears to be a cut-off line on your oil productivity.

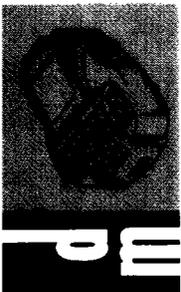
A This line is a reference line. It is based on the best information that was available to us at that time. It represents, say, the maximum limits of the Field.

Q You think the 4205 cut-off line, wherever it lies, does represent the limits of production in this reservoir; is that right?

A No, not necessarily. Not based on the information available to us at this time.

Q What information do you have that caused this information to be put on Exhibit 3 that says "oil down to plus 4205."

A This was based on information out of our Gigosa No. 1 which is located in the northwest of the southeast of Section 18. This was based on log calculations. We have perforated there; the bottom of the perforations in that well is a plus 4213, I believe. And we have based on our estimate selected plus 4205 as being more or less the down dip limits of this.



dearnley-meier auditing service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

Q Was that conclusion confirmed by any information that you developed in the well that is located in the northwest northwest of Section 19?

A Northwest of northwest of Section 19, U.S.A. Lone Pine No. 1. This well is structurally high and should be capable of producing. I do not know. I have no information right now to say why it does not, is not productive. We have suspended operations, swabbing operations on the well. We feel that it is structurally favorable. We feel that the same conditions are favorable. We strongly suspect that we have mechanical problems in the well.

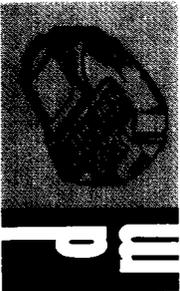
Q So you have no information from that well to either confirm or reject the 4205 as a cut-off point?

A That's right.

Q Now, how definite is your opinion concerning the location of this 4205 contour as it swings out into the Beard acreage in Sections 8 and 17? Do you have control for that configuration over there?

A Actually no. The only control that we have is projected depth based on a well drilled in the southeast of the northeast of Section 18.

Q So would it be entirely possible that the 4205 contour would, say, swing further up into Section 8 than you have it shown?



dearnley-meier court reporting services

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

A Right. It is possible. I think that this reference was based on the best knowledge that we had, and subsequently we have drilled wells. There is nothing magic that says that this is the absolute limits of the field. We feel that it could very easily be much bigger, but we felt that we had to show some reference as to what we felt at the time based on this exhibit, was a reasonably productive area.

Q You are not really prepared at this time to state as your opinion, that the Beard acreage contains no more productive acreage than is shown within that 4205 contour, are you?

A No, it is --

Q It could well contain more productive acreage?

A Right. That is right.

Q Now, assume with me, Mr. Rial, that a corner Beard acreage in Section 8 -- and Beard operates the Southwest quarter of that Section 8. Assume with me that a corner of that Section 8 is productive and would be productive at a location which has been staked in Section 8 at 660 from the south line and 330 from the west line.

Now, if Beard would not be permitted to drill a well at that location and if Beard were required to drill a well at a standard location in accordance with our Rules, how would Beard be permitted to protect its correlative rights?

How would he be given an opportunity to produce the oil and gas under his property?

A Well, I think that in looking at this Beard position here, that the standard location is also in the northwest northwest of Section 17, which is a direct south offset. And based on our information this could be structurally a much more favorable location.

Q Well, you are suggesting that a location in 17 would be better than a location in Section 8?

A Yes.

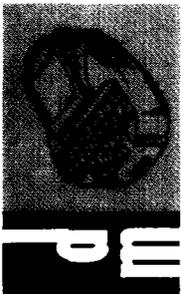
Q All right. But Beard happens to own the southwest quarter of Section 8, and let's say that even under the meager amount of acreage that would be shown to be productive under your line of 4205 here, how would Beard be permitted to recover the oil that is under its property if it had to drill a well in accordance with our proposed Field Rules?

A Well, I see no reason why that particularly -- if we say that there is nothing fixed or magic about our oil down through the line, that the location either in the northwest of 8 or the southeast of 8, is not also an acceptable location. I don't think that we have testified that structure is the controlling factor in accumulation here.

dearnley-meier
attorneys at law
1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

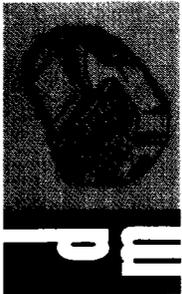
SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO



dearnley-meier consulting services, inc

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

Q All right. Suppose you pushed your productivity line out to the line that you have shown on here as your 4175 foot contour. Would there be a standard location that could be drilled under your proposed Field Rules that would be productive according to that?

A Well, now, we are making the assumption here now we could just easily move it out another line or something like this. What we are saying here is if there is some doubt that this is the limits, then the 40 acre tract there would not by all reason be draining more than the 40 acres.

Q All right. Let me make the question a little more clear. Let's say that your information showed that the only productive acreage in the southwest quarter of Section 8 was the southwest quarter of the southwest quarter. Now, according to your proposed field rules, a well could not be located in that 40 acre unit. How would Beard Oil Company protect its correlative rights and produce the oil underlying that 40 acre tract?

A Well, I think the problem involved -- there is no question, I think, that the well would be drilled, in that if we knew beyond a shadow of a doubt that this reservoir did not extend over into, say, the Section 8. I don't think that we can suppose at this time what the limits of this lease is. And I think it is our position, and

dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

we have followed this position here that the standard location should be drilled. Then this eliminates all iniquities as far as to definition of the reservoir and as to what would be an equitable withdrawal or allowable for a particular producing well.

Q Don't you always have this problem with fixed location requirements as you approach the edge of the reservoir or the granite? Don't you always have to have exceptions to the pool rules as you approach the edge of the Pool in order to protect correlative rights?

A Yes. I think that somewhere in here that exceptions must be considered in order to protect correlative rights. I think that it should be based on fact, not assumptions or interpretations. As we testified earlier, if a well is drilled on a non -- we are supposing that if a well is drilled on a nonstandard location, that its allowable be restricted to the 40 acres allocated.

Q All right. Now by the exhibit that you are presenting at this time in this case, you are showing to the Commission that the probable cut-off line although it may not be exactly where you have shown it, you are showing that the Beard acreage lies close to the edge of this pool; isn't that correct?

A There is no intent on our part to define a productive

dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

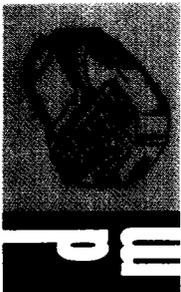
area at this time. I don't think it is possible. And the only way it is possible is through subsequent drilling. I don't think we can assume that.

Q You agreed with me a minute ago that as you did approach the edge of the pool, wherever it is, that exceptions have to be granted in order to protect correlative rights, or should be granted to protect correlative rights. Cannot this problem be solved and avoided completely by going to a flexible well location requirement in the proposed pool rules in the first place?

A I don't think so, because what we do, the iniquities that -- and the resulting loss and ultimate recoveries from this particular pool here are so sensitive to pressure drawdown and gas-oil ratio and reservoir withdrawals, that if we were to allow a flexible well spacing, then we would, in a sense, destroy -- it would not be in the best interest of conservation.

Q Are you familiar with rules that have been adopted by the Oil Commission on this 80 acre spaced oil pools in the San Juan Basin?

A No, I am not. I do know that the rigid fixed location is not the standard procedure. However, I feel that this field is a unique entity in its own and that we should tailor our development program to meet the reservoir



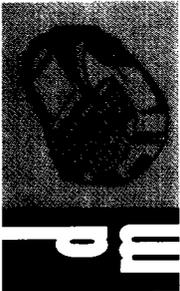
conditions as we now see them. Once we have drilled those wells and proceeded, then it is too late.

Q What you are really saying, Mr. Rial, as I understand you, is that since Tenneco has chosen to drill its wells on the pattern, that the Commission is now boxed in to have to grant such location requirements in order to protect your correlative rights. Isn't that what you are saying?

A No, I don't think so. We based our development on what we considered would be in the best interest of conservation and ultimate recovery from this reservoir, both on a primary and a secondary consideration.

Q Is it not true, Mr. Rial, that the fairway of this pool already has been developed and that the additional drilling that will occur in this area, will be step-out wells toward the edge of the pool, which will require many exceptions and applications for exceptions to the proposed pool rules?

A I don't really think right now, that we have necessarily completely defined the fairway. I think that, yes, as we move out into these areas, then there would be -- there could be possible considerations for exception. However, if the fixed well spacings are drilled first, then there is no problem with the exceptions.



Q Would you agree that exception should be freely and liberally granted by the Commission as you move toward the boundaries of this pool?

A No, I do not. I think the cause should be shown and evidence to support the exception.

MR. MORRIS: I have nothing further, Mr. Examiner.

MR. UTZ: Are there other questions of the witness?

CROSS-EXAMINATION

BY MR. UTZ:

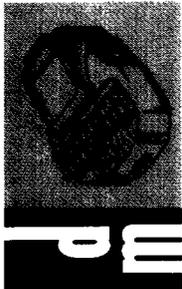
Q Mr. Rial, when you began your testimony, you gave, I believe, three reasons why you wanted -- and I believe these were engineering reasons, were they not --

A Yes, they are.

Q -- why you should have fixed spacing in this reservoir, and I missed the first one.

A Okay. To provide continuity for development and definition of the reservoir, we feel that it is important that we consider pressure maintenance or secondary recovery early in the life of this field, because of the potential gas and reservoir voidage problem. We need to define the reservoir as accurately as we possibly can in order to optimize a recovery mechanism which is best suited.

Q And your second one was the creation of low pressure areas and resulting high GOR?



dearnley-meier consulting services, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

- A Yes, this has the effect of both the primary and secondary.
- Q And then your third one was -- I think you have just stated it.
- A Right.
- Q The optimum of the secondary recovery area.
- A Right.
- Q Due to the better drainage pattern and the better injection pattern?
- A That is true. Regardless of the type, whether it is gas injection, water or --
- Q Now, Mr. Morris questioned you to considerable length about this dashed line, "oil down to plus 4405." Now, as I recall in the hearing last month, your testimony was to the effect that it was your opinion that there was oil down to this point, and it very well might be beyond this point; is that correct?
- A This is correct. This is our intent in showing this as the -- I guess to establish where we think it is now, not to say where it absolutely is or potentially will be.
- Q In your opinion, is the location in the northwest of the northwest of 19, which I believe is your Lone Pine No. 1 -- Is that really a dry hole or do you think it might make oil out of it yet?

dearnley-meier testimony audio, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

A My personal opinion is that we have mechanical problems with this well. It does not fit reasonably or logically any of the other data that we have. Now, I must be frank and honest with you, and we haven't figured out why. And we plan subsequent operations, remedial work, in order to test this well.

Q And do I understand you correctly in that you have completed an oil well in the D zone and the southeast of the northeast quarter of Section 18?

A Southeast? Yes, sir. That is the Yazzie No. 2 which was completed for flowing 114 barrels and eight barrels of water with a gas-oil ratio of 1230 GOR.

Q Okay. And have you completed the No. 1 Yazzie which is in the northwest of the northeast quarter of Section 18?

A Yes, we have.

Q And what kind of a well was that?

A That flowed on an initial potential of 111 and ten barrels of oil and a gas-oil ratio of 1400 to one. Ten barrels of water. Oh, excuse me. 111 barrels of oil and ten barrels of water.

Q Now, this next question has nothing to do with the spacing problem, but it is a verifying question regarding your testimony last month. As you recall, Antwiel was in and was questioning the discovery well, being your Don Ne Pah

dearnley-meier reporting services, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

No. 1. It was your contention that this was the discovery well for this pool?

A Yes, it was.

Q Now, there were two other wells mentioned, which, I believe, were north of your fault on your Exhibit No. 3 by the 16 and 17. Now, do you recall which of these wells were drilled first?

A No, sir, I do not. I assume that they were drilled in about the same lapse of time, within probably, broadly, six months of each other.

Q Well, do you recall which well, 16 or 17, that Antwiel contended was the discovery well?

A It was No. 16. No. 17 was drilled as a -- completed as a gas well.

Q And as I recall, the No. 16 was not drilled through the D zone?

A It was drilled through the D zone and completed in what we are -- correlation interval the B zone.

Q It was not productive in the B zone, was it?

A In my opinion, it was not productive in the B zone.

Q It is now completed in the B zone?

A Right, it was not tested though, in the D zone.

MR. NUTTER: Does it have perforations or open holes

in the D?

THE WITNESS: No.

MR. UTZ: Are there other questions of the witness?

You may be excused. Other testimony in this case?

MR. MORRIS: Yes, sir.

(Whereupon, the witness was sworn)

THOMAS A. DUGAN,

a witness, after having been first duly sworn according to law, upon his oath, testified as follows:

DIRECT EXAMINATION

BY MR. MORRIS:

Q Mr. Dugan, please state your name and where you reside?

A Thomas A. Dugan, 907 Hallix Circle, Farmington, New Mexico.

Q What is your connection with Gilbert S. Maxwell and Beard Oil Company in this case?

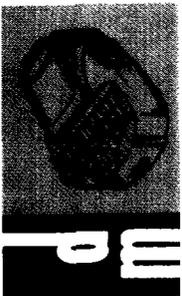
A I am employed as a consulting petroleum engineer.

Q Do you do work for Mr. Maxwell and Beard Oil Company in addition to the consulting work that you have been engaged for in connection with this case?

A Not with Maxwell; some with Beard.

Q I see.

MR. MORRIS: Are the witnesses' qualifications as a consulting engineer acceptable?



MR. UTZ: Well, he is qualified as a consulting engineer. He is qualified in this case if he has made a study of this area. Have you done so?

THE WITNESS: Yes.

Q (By Mr. Morris) Mr. Dugan, would you first please state for the record what acreage is operated by Gilbert S. Maxwell?

A The southwest quarter of Section 18, 17 North, 8 West.

Q And what acreage is operated by the Beard Oil Company?

A Southwest quarter of Section 8 and the northwest quarter of Section 17, 17 North, 8 West.

Q Has Mr. Maxwell staked locations on the acreage that he owns for drilling to the Dakota formation in this area?

A Yes, sir.

Q And where are those locations?

A He staked the Maxwell Baji No. 1, 1980 from the south, 660 from the west, in Section 18, 17, 8. And the Baji -- Maxwell Baji No. 2, 1980 from the south and 1980 from the west, Section 18, 17 North, 8 West.

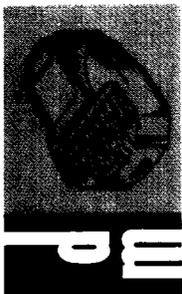
Q Did you handle the filing of the application for permission to drill on these two wells?

A Yes, sir.

Q And what type of land is this?

A It is -- the terrain?

Q No, I mean is it -- the nature of the ownership?



dearnley-meier

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

A Oh, it is Navajo allotted.

Q All right. According to your understanding of filing procedure, where is the application for permit to drill required to be filed on the acreage?

A With the U.S.G.S.

Q And is that where you filed it?

A Yes, sir.

Q And did the U.S.G.S. take any action with respect to the filing of these applications for permit to drill?

A Yes, sir.

Q What action did they take?

A They have approved them.

Q They have approved them?

A Yes, sir.

Q Were any conditions attached to those approvals?

A Not to my knowledge.

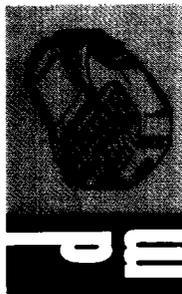
Q What is the present status of those locations?

A The Baji No. 1 is drilling this morning at 1648. The Baji No. 2 was spudded yesterday with a small rig and drilled to approximately a hundred feet; eight and five-eighths casing was run but not cemented.

Q How long does it take to complete wells in this area?

A Three or four days.

Q The total depth from surface is approximately what?



dearnley-meier consulting services, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

- A On these wells it would be approximately 2840.
- Q Approximately how much does it cost to prepare your location, drill and complete the well?
- A Thirty to \$35,000.
- Q Are you informed as to whether Beard Oil Company has filed a location on its acreage?
- A Yes, they have filed a notice of intention to drill.
- Q At what location?
- A They filed a location called the Joe Toledo No. 1, 660 from the south line, 330 feet from the west line, Section 8, Township 17 north, range 8 west.
- Q And is the nature of this land also allotted Indian land?
- A Navajo allotted, yes.
- Q And was that filing of application for permit to drill made with the U.S.G.S.?
- A Yes, sir.
- Q And did the U.S.G.S. take action upon that application?
- A Yes, sir.
- Q To what effect?
- A It was approved.
- Q All right. What work has been done so far with respect to that location?
- A Constructing location. It is still in the process of constructing location.

Q Are you familiar with the background of the case insofar as the Maxwell acreage is concerned with respect to why Mr. Maxwell wished to locate the two wells at the locations that have been staked and where drilling has begun?

A He and his geological staff decided that they were the most favorable locations in the 160 acres.

Q Did that decision have anything to do with the experience that Tenneco is now having with the Lone Pine Well No. 1, in the northwest northwest of Section 19?

A Yes, I am sure it did.

Q Was it Mr. Maxwell's desire to stay as far away from that well and from the 4205 cut-off point shown on Tenneco's Exhibit No. 3, to stay as far away as possible from that well and that cut-off point?

A Yes, sir.

Q Now, did Tenneco experience production of water in its well located in the southeast quarter of Section 18?

A I believe the previous gentleman just testified to that, yes.

Q All right. And did this fact have a bearing upon Mr. Maxwell's decision to stay as far to the north on his acreage as possible?

A Yes, sir.

dearnley-meier
accounting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

Q Are you prepared to state what the position of Beard Oil Company and Mr. Maxwell is in this case with respect to Tenneco's application for fixed well locations?

A Both companies oppose the fixed well locations.

Q All right. On what basis?

A That the flexible pattern or flexible well location would be more desirable in the development of extremeties of the field or the perimeter of the field and also in the precedence set in the San Juan Basin in other oil pools with 80-acre spacing.

Q Have you made a study of the Pool Rules in the other oil pools in the San Juan Basin that are spaced on 80-acres?

A Yes, I have.

Q And what did that study show?

A Of the eleven pools that have the 80 acre spacing, there is one pool with a fixed pattern and ten with flexible patterns. Six of the ten requires that the well be drilled within a 150 feet of the center of either quarter, quarter and four within 330 feet from the quarter quarter boundary.

Q As a matter of precedent, do you feel that this Commission should take into consideration the pool rules that have been adopted in the other 80 acre oil areas of the San Juan Basin?

A The one pool that is fixed pattern was one of the first oil pools discovered in the San Juan Basin south Blanco Tosoto, and since that time, the developing -- the companies who have developed the other pools have felt that the flexible pattern was more desirable.

Q Mr. Dugan, have you had an opportunity to read the transcript of the testimony given in the hearing of this case on November 18, 1970?

A Yes, I read it this morning.

Q And have you also made a study of this area with respect to the geology and the producing characteristics of the wells in this area?

A What is available. It is very difficult to secure information on the Tenneco properties. They have been very secretive about their operation down there, as far as learning any of the details.

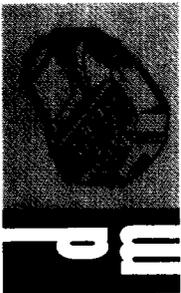
Q Have you examined the information available from the Oil Conservation Commission files?

A Some of it. Not all of it.

Q All right.

A Very little of it.

Q Based upon your knowledge of this area, do you have an opinion concerning the effect of a fixed well location requirement upon the correlative rights of Beard Oil



Company and Mr. Gilbert S. Maxwell?

A Well, yes. I feel if we have a fixed well location pattern, that it is very possible that both Beard and Maxwell's correlative rights will not be protected. And then I am sure that in the future there will be applications before the Committee, before the Oil Commission for exceptions to the fixed pattern.

Q Do you have any comment that you would make upon whether a flexible well location requirement in the pool rules would have any effect upon secondary recovery operations in this area?

A Well, just -- I haven't studied -- the information hasn't been available to study, this pool's secondary recovery prospects, but five-spot patterns -- as a general rule, five-spot patterns in the San Juan Basin has been unsuccessful because of fracturing trends in the reservoirs, and it has been more successful to have a staggered line drive flood with your injection wells parallel to the fracturing and faulting and flooding perpendicular to these plains.

It would appear from all the maps available, that there is considerable faulting in this area so there should be fracturing in the reservoir due to the faulting.

Q Are you aware of whether Mr. Maxwell had contractual duties

with respect to drilling wells upon the acreage that he has acquired from Mr. Antwiel?

A I have been informed that he does.

Q All right.

MR. MORRIS: I might just interject at this point, Mr. Examiner, that I am authorized to state that Mr. Maxwell has contractual duties to drill two wells on this acreage prior to January 1 of 1971.

Q (By Mr. Morris) Now, Mr. Dugan, in the event the Commission should see fit to adopt fixed well location requirements in this pool, what recommendations would you have concerning exceptions to those rules for the Beard Oil Company Well in Section 8 and the two Maxwell Wells in Section 18?

A Well, the Beard Well location has been staked and construction of the location is in progress. They have spent in the neighborhood of \$1,000 to date. They desire to drill the location -- the well at this location, and if the fixed pattern is adopted, I am sure that Beard will be asking for an exception to the rule.

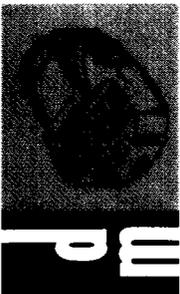
Q Would it be your recommendation that the exception to the rule be incorporated in the Order adopting the special rules?

A Well, of course, we are hopeful that we will not have a fixed pattern in the pool, but if the fixed pattern is the

dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO



dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

rule, we would ask for an exception at this time.

Q Would the same be true with respect to the Maxwell acreage?

A The No. 1 Maxwell Well, is on pattern -- on the proposed Tenneco pattern. The No. 2 Well would be an exception to the proposed Tenneco pattern. And as Mr. Maxwell is very desirous of drilling the well in what he believes the most favorable location in the 80 acres comprising the east half of the southwest quarter of Section 18.

Therefore, he is very desirous of drilling a well where it is staked and where it has commenced drilling, so if the fixed pattern was approved, he would be asking for an exception, also.

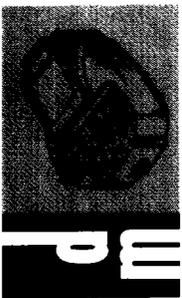
Q I think you have made it clear, but let's make it clearer in closing that the first and foremost position of Mr. Maxwell and the Beard Oil Company is that a flexible well location requirement be adopted in the special rules and regulations.

A We believe it will be beneficial to everyone concerned in the development of the pool, particularly in the development of the outer boundaries of the pool.

MR. MORRIS: I have nothing further of the witness.

MR. UTZ: Are there questions of the witness:

MR. HATCH: These numbers are -- I am confused on



the numbers of these wells in the southwest, and if you'll get those straight, and which one is actually drilling --

MR. UTZ: Would you clarify that?

THE WITNESS: Yes. The No. 1 Maxwell Baji is presently drilling. It is the west well, which is 1980 from the south and 660' from the west, would be the proposed Tenneco spacing or location pattern.

MR. UTZ: That's the one that's 1648?

THE WITNESS: This morning, yes.

MR. UTZ: This morning?

THE WITNESS: Yes.

MR. UTZ: And the other location has been spudded, you think?

THE WITNESS: Yes, sir. It definitely has been spudded with a small rig and the hole drilled to approximately one hundred feet. Eight and five-eighths casing run in the hole, but not cemented.

MR. PORTER: I have one question, Mr. Examiner.

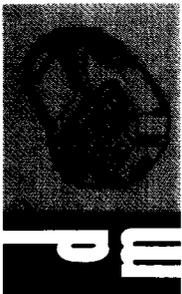
MR. UTZ: Mr. Porter?

MR. PORTER: Mr. Dugan, I believe it was stipulated this morning that your client wouldn't oppose 80-acre spacing?

THE WITNESS: Yes, sir.

MR. PORTER: What was that based on?

THE WITNESS: Their studies of the pool and the



reservoir characteristics.

MR. PORTER: Their studies?

THE WITNESS: What studies -- what information they had available, yes, sir.

MR. PORTER: Well, due stipulation was made, I believe, prior to the time you read the transcript.

THE WITNESS: Well, prior to the time I read the transcript, yes, sir. But I didn't make that decision, sir.

MR. NUTTER: Some of these other parties were present at the hearing last month, I believe.

THE WITNESS: Yes.

MR. MORRIS: Let me make the observation in further response to your question that I was brought in and engaged to work in this case only yesterday, at which time I talked with another attorney for Mr. Maxwell, and I also talked to the president of Beard Oil Company. I was informed and instructed that the 80-acre spacing should be supported, but that the fixed well location requirement should be vigorously opposed.

MR. PORTER: I'll accept that, I guess, Mr. Morris.

MR. MORRIS: Thank you, sir.

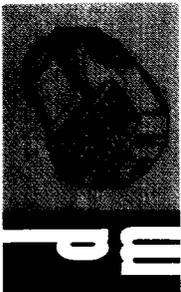
MR. HATCH: I have another question, Mr. Dugan, you did the filing for the Beard Well and the Maxwell Wells?

THE WITNESS: For the Maxwell Wells, but not the Beard Well.

dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO



MR. HATCH: You did not? When did you make those filings?

THE WITNESS: I filed -- I prepared them both Monday and filed the No. 1 Monday.

MR. UTZ: What day would that be?

THE WITNESS: That's December the 14th, 1970. I filed the No. 2 with the U.S.G.S. Tuesday, December the 15th 1970.

MR. HATCH: Were you aware the time that you made those filings that a case had been set for fixed spacing in this pool?

THE WITNESS: Yes, sir.

MR. HATCH: And that there had actually been a hearing conducted?

THE WITNESS: Yes, sir.

MR. HATCH: That's all the questions I have.

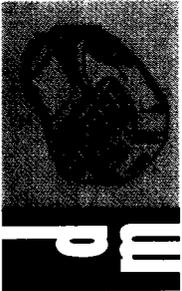
MR. UTZ: Do you know who was responsible for filing the Beard location?

THE WITNESS: I'm not positive, no, sir.

MR. McGRATH: Ivan Allred works as an engineer for Beard.

MR. UTZ: Other questions?

MR. BATEMAN: Yes. Mr. Dugan, I have a few.



CROSS-EXAMINATIONBY MR. BATEMAN:

Q Specifically regarding the Maxwell Well No. 2, you say it was spudded in yesterday; is that correct?

A Yes, sir.

Q Do you have any idea what time that was done?

A Sometime in the afternoon, after lunch.

Q The application for that well was made on the 15th; is that correct?

A Yes, sir.

Q All right. When did you get approval of the application?

A Sometime round 10:00 o'clock that morning.

Q Were you the one that was given the approval?

A Yes, sir.

Q In what form was the approval given?

A Verbally.

Q Is that normal procedure?

A That is -- Yes, it is fairly normal.

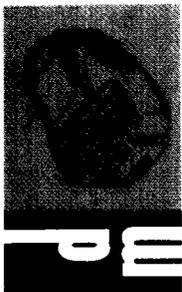
Q Well, did you make a written application?

A Yes, sir.

Q Do you expect to get any written approval at any time?

A Yes, sir.

Q Now, you say it was spudded in with a small rig and casing set at 150 feet. Was that --



dearnley-meier logging service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

- A Around a hundred feet, approximately. I haven't an exact report.
- Q So do you expect to move the rig from your No. 1 Well to No. 2?
- A Well, Mr. Maxwell is required by contract, as I understand it, and desires to drill both wells this year. There is not a lot of time left. The plan, a couple of days ago, was to move over on the Beard Well, drill it and move back to this well. The plan came into change quite often.
- Q Now, I understand the contract did not specify the location of the wells; is that correct?
- A What?
- Q The contract does not specify the location of the wells to be drilled?
- A What contract?
- Q The contract Mr. Maxwell has.
- A I don't know. I haven't seen the contract.
- Q Did you participate in the decision on behalf of Maxwell as to --
- A As to where to drill?
- Q -- where the well was to be drilled?
- A No, sir.
- Q All right. I think you made the remark that in regards to Well No. 2, an attempt was made to get a location as

far away as possible from Tenneco's Well down through Pavalia (phonetically), and as far away as possible down to the oil line shown on the unit in front of your Exhibit No. 3; is that correct?

A Yes.

Q Now, do you take the oil down to a line on Exhibit No. 3 to be an established fact?

A No.

Q You had that information available to you, did you not?

A Yes.

Q Okay. You do not think that that line effectively determines the limits of the pool at this time?

A No.

Q Well, how will the limits of pool be determined ultimately?

A By additional drilling.

Q All right. I think in your closing remarks you said that flexible well locations will assist in determining the pool limits; is that correct?

A Yes, sir.

Q How did you conclude that?

A The pool limits are approximated as they have been with Tenneco's Lone Pine No. 1 and their Gigosa No. 1, then

dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

is when the flexible pattern is most desirable because then is when you will be deciding upon which 40 to drill. And which 40 you want to drill and when you come up to, say, drilling the east half of the southeast quarter of Section 18 and you had flexible spacing, flexible pattern, where would Tenneco drill their well?

Q Well, I am not in a position to answer that question.

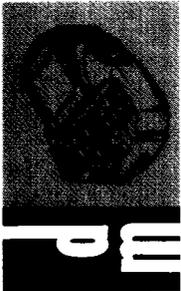
A Well, that is the point I am trying to make, is that if they have the -- if the flexible pattern is adopted, there would be no doubt where they would drill their well.

Q Well, we are speaking of definition of pools in determination of the limits of the pool. Don't you think that a fixed pattern drilling will determine the limits of the pool faster?

A No, sir, I do not because a lot of these fixed pattern wells won't be drilled.

Q I see. Well, let me ask you another question, then. Regarding your remark that correlative rights will be protected by flexible locations on the edge, I fail to follow your reasoning on that point, if 80 acres are going to be dedicated to each well drilled on a flexible pattern.

A Well, that would be undoubtedly true that with the flexible pattern that the most desirable location would be drilled and it is very possible that a 40 that would be



dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

really outside of the pool limits dedicated to a producing well. This is also true with fixed pattern, as it is fairly well evident from Tenneco's Exhibit 3 here on their Gigosa No. 1, where they are showing the majority of 140 dedicated. That well is what they believe applicable to the pool, so either method is going to allow some possibly non productive acreage to be dedicated to a well.

Q Well, I admit there are no absolutes in this regard, but if there is a 40-acre limitation, allowable limitation on a nonstandard location, why aren't correlative rights protected on the edge of the pool?

A Now, I didn't quite understand the question.

Q Well, I know that you can't be absolutely certain what total acreage is productive?

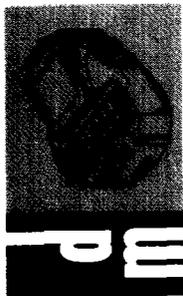
A Yes.

Q But if there is a 40-acre allowable limitation on a non standard well drilled, for example, along the edge of the pool --

A Yes.

Q -- are not the correlative rights of everybody protected?

A If every well along the edge of the pool was examined and as in the case of the Gigosa No. 1, if it appears that part of that proration unit is out of the productive field,



would you agree that it should have a 40-acre allowable?

Q Mr. Dugan, I don't think that is quite the answer to my question.

Does the Gigosa No. 1 have an oil-water contact?

A I don't know. I haven't seen the log. I believe that it was testified that it did. I do not -- maybe I misunderstood.

Q Well --

A It apparently produces some water, from what information I can secure.

Q Well, your second point was that there had been a precedent set in other oil pools in the San Juan Basin?

A Yes, sir.

Q What are the similarities in the other pools and this one?

A The majority of these pools are solution gas drive reservoirs. The majority of the pools that -- the examples that I studied are the Gallup Pools, however. The bulk of the Dakota oil pools in the San Juan Basin are either on 40-acre spacing or two and a half acre spacing. The basin Dakota gas pool, which is a very large pool, is on 320 acres, but it is on a flexible pattern. It is not on a fixed pattern and that has proved very desirable in the development of the basin Dakota

gas pool.

Q Are any of those pools on secondary recovery now?

A Well, at least one of the Dakota oil pools have been on secondary recovery. Several of these Gallup pools with 80-acre spacing are on secondary recovery.

Q Well, speaking specifically of the proposed Lone Pine pool, do you find anything unusual about it as compared to other pools in the area, oil pools?

A Well, now I would say it has probably more prolific and better voidage characteristics than most of the other pools that I am familiar with.

Q Do you know whether or not in the ten pools in which there is flexible spacing, there is a request made by the applicant for fixed spacing?

A No, I don't know what requests were made.

Q Have you made any attempt or have you ever requested additional information from Tenneco regarding the Lone Pine Pool?

A I haven't personally, no, sir.

Q I believe your testimony was to the effect also, that Beard, for example, will be jeopardized to the sum of \$1,000 if he is not allowed to drill on his present location?

A Yes, at this point, yes, sir.

Q Okay.

A I mean, that is one jeopardy; I am sure there will be others.

Q Do you know whether or not Mr. Allred had knowledge of this hearing at the time you made the application?

A I asked that question and the answer was no.

Q But you did have knowledge of it, as regards to Maxwell's acreage; is that correct?

A Yes, sir.

Q And how would he be jeopardized in regard to Well No. 2 --

A You mean --

Q -- economically?

A You mean at this point momentarily? A thousand and fifteen hundred and something. In that neighborhood.

Q Mr. Dugan, you made some remark about in regards to secondary recovery in this area that there was some evidence of faulting and fracture; is that correct?

A Well, from all the maps I have seen, there is evidence of faulting, including this map in front of me. And generally, where there is faulting, there is some associated fracture of the reservoir

Q This is a general principal, is that correct?

A General experience, yes.

Q But you have no evidence of --

A No, I don't.

Q -- fracture --

A No, sir.

Q -- in this particular --

A No, not in the Lone Pine pool.

Q What other maps have you considered besides this one --

A Oh, there is --

Q -- on that?

A There is several maps available that I have, including some prepared by people who are working in the Gallup side or who have worked it in the past.

Q What kind of maps would those be?

A Well, their geological maps that I had access to.

Q And they indicate faults to be on them?

A Yes, faults.

Q Have you seen core analyses or anything like that?

A No, I have seen no -- I think they are all in the Lone Pine Pool. Every well has been a tight hole.

Q Okay. From the information you have, you believe that the maximum well acreage is on the edge of the pool?

A It might not be on the edge, but it is close, yes.

Q And how do you know that?

A Mainly by what information I can gather about the Tenneco Lone Pine Well.

Q But that is somewhat limited information, isn't it?

A It certainly is. It certainly is.

Q So it may not be on the edge of the pool or even close to it?

A No, it might not. I am sure that Tenneco will be doing some further work on their Lone Pine lease to find out.

Q Okay.

MR. BATEMAN: I have nothing further.

MR. UTZ: Mr. Dugan, a Gigosa No. 1 Well in the northwest of the southeast has been brought up a few times. What kind of a well is this; do you know?

THE WITNESS: Well, the information I have is that it was IP'd for 197 oil and three water.

MR. UTZ: 197 oil?

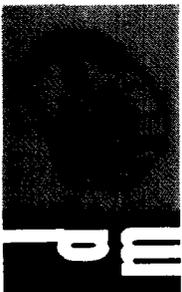
THE WITNESS: Yes. And three water.

MR. UTZ: Would you confirm this, Mr. Rial?

MR. RIAL: I have no specific knowledge. This sounds about right as far as its initial potential. This does not necessarily indicate the capability of a well to produce.

MR. UTZ: Is this a good well at this time?

MR. RIAL: Yes, definitely. It is -- I think previous tests indicated that there is -- we do not have producing wells in the field that will not be capable of making the 200 barrels



a day allowable.

MR. UTZ: Are there other questions of the witness?

CROSS-EXAMINATION

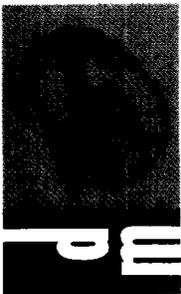
BY MR. NUTTER:

Q Mr. Dugan, you suggested that in the event the Commission should adopt the rigid spacing that it should grant these two wells exception to the rules as non standard locations. In the interest of protecting the correlative rights of all concerned, Tenneco, Beard, and Maxwell, wouldn't it be preferable to take each of those wells at a separate hearing and consider the merits of the off-pattern drilling in the event a fixed pattern should be approved, and also at that time consider the feasibility of imposing some sort of a penalty or not imposing a penalty on the well, as the case may be, rather than just granting an exception blindly here without really studying correlative rights as effected by those particular wells?

A That is a pretty long question.

Q Wouldn't it be preferable?

a MR. MORRIS: Mr. Examiner, maybe Mr. Nutter would consent to let me help take Mr. Dugan off the spot on that. I think there is a unique problem here that, fortunately hasn't come up, too many times before, but is brought up



dearnley-meier

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

rather dramatically in this case, and it has involved some jurisdictional aspects, and it involves some aspects of coordination of effort, maybe, between the Oil Commission and the U.S.G.S. But under the circumstances that we do have present here, where the location -- the application for approval are required to be filed and approved by the U.S.G.S. and no approval is required of the Oil Conservation Commission, itself, I think we have a situation here where these wells are already approved.

And I don't like to put it that way on such a technical basis, but I think that is the situation we have here. And I think the Commission should go ahead and give an exception for these three wells and seek, perhaps, to avoid this kind of problem coming up in the future, but I do not see any way out in this particular case.

And so, in a sense, I am responding to Mr. Nutter's question. I do not think that it would be a preferable procedure to have another hearing on these where these wells already have been approved.

MR. NUTTER: They haven't got an allowable yet, have they, Mr. Morris? That is what I was talking about is the discussion after the allowable.

MR. MORRIS: Well, at this time, as I understand it, the wells have been filed with 40 acres dedication plat. And

dearnley-meier accounting services, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

that would be the allowable that they would have until such time as an additional acreage dedication plat were filed and approved. Now, I do not want to get into the question of who would approve that.

MR. NUTTER: Okay. Mr. Morris, now, Mr. Rial discussed the 40-acre allowable being assigned to this well, and I haven't heard Mr. Dugan nor you respond to that proposal. What about 40-acre allowable for the well?

MR. MORRIS: Well, of course, it is my -- it would be -- Tom, do you want to respond to that?

THE WITNESS: Yes, I thought I covered that awhile ago, when he asked me about drilling these edge wells and dedicating what would appear to be a 40 outside of the pool limits. If at some time in the future, the pool limits are that well defined, if both, what Tenneco proposes as regular pattern wells and what we would desire as a flexible pattern well, where both studied and those who had appeared to have acreage outside the pool limits were limited to what acreage was in the pool, why, I think that might be a fair approach.

MR. NUTTER: But what about these wells right here, now, the ones we are talking about. How about 40-acre allowable for the two wells that are being drilled off-pattern?

THE WITNESS: It is our belief that the Maxwell lease is all productive, that Mr. Maxwell is drilling his most

desirable location in the 80 acres dedicated or that would possibly be dedicated to the well if the 80-acre spacing is approved. The Beard Well is a little more questionable, and further drilling is going to have to be done to determine what of its possible 80-acre spacing is productive, so I don't think at this time that either company would agree to a 40-acre allowable until -- without further study.

MR. NUTTER: You see this is the very point that I was trying to make a minute ago, Mr. Dugan, that these wells should be the subject of a separate hearing, at which time their individual characteristics and characteristics of the reservoir in that area should be studied. And the effects of drilling off-pattern should be taken into consideration to determine whether a penalty or whether a penalty should not be imposed.

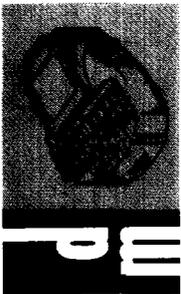
THE WITNESS: Well, it is as I have brought out, there is lots of pools in the Basin that has a flexible pattern, and there is -- none of the wells that I know of have been penalized.

MR. NUTTER: You mentioned South Blanco Tosoto, that it has been drilled on pattern, and that is possibly one of the best per-acre recoveries of any of the pools up there.

THE WITNESS: Yes. It has a fixed -- it is further along in development, too.

dearnley-meier

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

MR. NUTTER: I believe that's all the questions.

THE WITNESS: In fact, it is done, I think.

MR. NUTTER: That's all my testifying.

CROSS-EXAMINATION

BY MR. UTZ:

Q Mr. Dugan, I believe you stated in your opinion in the southwest quarter of Section 18 was entirely productive.

A That is the belief of the Maxwell group, yes, sir.

Q That being so, then why do you object to drawing a well in the proposed location? In other words, in the southeast of the southwest?

A We think that is a good location but we think the other one is better.

Q In other words, you just think it is maybe a better location and a better well?

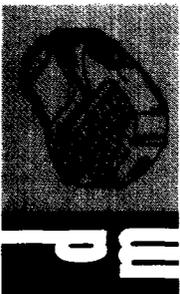
A It is a most desirable location in the proposed 80-acre proration unit.

Q So, to boil it down, as far as the nonstandard location is concerned, then, you are just gambling with maybe a better well?

A What we believe will be a better well.

MR. McGRATH: I would like to make a statement.

P. T. McGrath of U.S.G.S. You keep talking about off-pattern and nonstandard location. We do not have one up there



yet, because these locations wells are under Statewide Order, 40-acres, and so far, you do not have -- I approved those wells. I could not keep from approving them when they were filed legitimately and legally. There is no Order and I have nothing to show me that these are not standard locations and there is --

MR. UTZ: Mr. McGrath, that may be true, and you might have been aware that this application has been in the mill since November 18. I wasn't speaking after Order as far as off-pattern locations are concerned, but in my opinion, this is an off-pattern location as well as the pool has been developed at this time.

Now, the pool --

MR. McGRATH: But there is --

MR. UTZ: -- now the pool has been developed with this type of pattern and that is the pattern that the pool has been developed on, and anything adverse to that at this time, I consider off-pattern, whether there is no Order or not.

MR. NUTTER: Well, it is off-pattern to the pool rules. There is no question about that.

THE WITNESS: This is off-pattern --

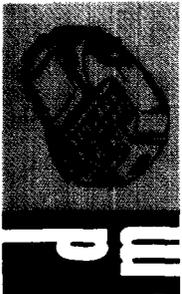
MR. NUTTER: To proposed pool rules.

THE WITNESS: It is off-pattern to Tenneco's proposed pool rules. But I do not believe that Tenneco consulted Beard

dearnley-meier reporting services, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO



when they decided what the pattern was going to be and, of course, if Maxwell didn't have an interest in it when they made the decision, so if -- when the decision is made, it is nice to take everyone into consideration.

MR. UTZ: Well, it is off-pattern as to the way the pool has been developed.

THE WITNESS: But there is one company that has developed the pool today.

MR. RIAL: I would like to make a statement on this that we did have communication with Beard prior to the first hearing and they -- we explained to them the location, the fixed location, 80-acre, and their comment to me was the fact that they had no objections at that time.

MR. McGRATH: They did know of this hearing, but they were honest. They thought they were outside the proposed space area, but they were within a mile of it. They did not know this was a rule. They thought they were all right because they were outside of it.

MR. UTZ: They were not aware of the one mile proposal?

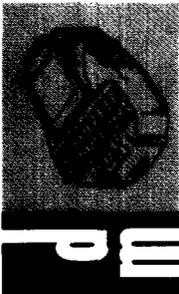
MR. McGRATH: No. And I wasn't until I talked to them.

MR. UTZ: Are there other questions of the witness? The witness may be excused. Do we have further statements in

dearnley-meier
 legal services, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
 1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO



this case?

MR. MORRIS: May I make a very brief statement after --

MR. KENNEDY: Mr. Examiner, I am C. C. Kennedy, operator in Farmington, New Mexico, and as an interest holder in the southwest quarter of Section 8 -- 17 -- 8, can I make a statement?

MR. UTZ: I know of no reason why you can't.

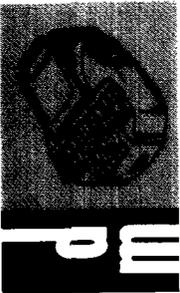
MR. KENNEDY: I would like to support approval of that particular location, because as I see it, based on the structure map presented here, it is the only way I can get a well drilled on my quarter section down there.

MR. UTZ: Your quarter section is what part of it?

MR. KENNEDY: Interest under the Beard acreage.

MR. UTZ: I see.

MR. MORRIS: Mr. Examiner, I would like to make a brief statement. This question of fixed versus flexible pattern is nothing new to the Commission and I certainly can understand some of the reasons for-- from the engineering standpoint of wanting to have fixed locations in the pool. However, from the standpoint of protection of correlative rights of the pool, I think the many, many applications that are brought before this Commission from time to time show that it is a very difficult problem for operators and it is a difficult problem for this Commission to administer where you have a fixed well location



requirement and you start moving toward the edge of the pool, because an operator on the edge is faced with the question of whether to take what he may consider an extraordinary risk and drill a well at standard location or come in and have to seek an exception and perhaps suffer a penalty to drill a well at an off-pattern location and recover the oil that is under his property, that he feels that he cannot recover from a standard location.

Obviously, there are no easy answers to this, but I think there is an easy answer in this particular case, because the fairway of this pool has been developed. It is not a question of waste being caused here by drilling a bunch of wells off-pattern throughout the fairway of this pool. It has already been substantially developed and further development here is going to be done probably not by Tenneco, but by others who are willing to invest their money on some of the less desirable tracts of land surrounding this pool.

And out of consideration for them and their correlative rights, I would strongly urge this Commission to adopt flexible well spacing in this pool.

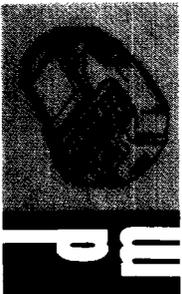
And I submit that waste will not be caused because of the extent to which the development has already progressed in this area.

With respect to the exceptions for these well location

dearnley-meier

LEGAL SERVICES

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

dearnley-meier

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

requirements, are these well locations in this event the Commission should disagree with me, and again, I certainly hope you do not disagree with me and my clients on this. But, if you disagree and have fixed well location requirements, I do not want to belabor this point, but I do think that the wells -- the applications having already been approved by the U.S.G.S. and that body being recognized as having jurisdiction to approve locations in accordance with the rules as they stand now, not rules as they are applied for, that these locations are legal locations and not only should, but I submit must be recognized by the Commission and in Order.

Now, a question of what acreage dedication is going to be allocated to those wells is a bit more difficult, because the wells -- the acreage dedication plats as submitted, I understand were submitted on the basis of the existing Statewide Rules, which are 40-acre rules. And I would join with Mr. Dugan in saying that my clients would expect to have the same treatment that has been afforded to other parties in connection with where spacing is increased as a result of application and that is being given the right to come in and have the 80 acres dedicated to their wells upon just routinely -- by filing an amended C 128, or whatever it is called now. C 12 or acreage dedication plan.

I think that's all I have. Thank you.

MR. UTZ: You are not proposing here, however, that any operators be given credit for allowable under dry acreage?

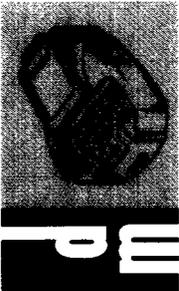
MR. MORRIS: Well, that raises a whole new subject of discussion, Mr. Examiner, which I think has already been exposed in this hearing, which is that you do have dedication of some dry acreage no matter what kind of a well location requirement you have. And so long as operators have located their wells in accordance with pool rules, I don't think it has ever been a practice of this Commission to question whether there is some dry acreage dedicated to a well.

Where an operator comes in after pool rules have been set up and wants an exception, then he is automatically raising the question of whether he has dedicated dry acreage to that well.

But I think excepting that circumstance, you do not -- this Commission has never and should not now entertain the question of productive acreage.

MR. UTZ: Other statements?

MR. BATEMAN: Yes, Mr. Examiner. I will be even more brief. I think the Commission should look at this pool as an individual entity. I think that it has been amply illustrated in terms of the engineering information that we have and geology information that we have that fixed locations are an aspect of prudent development of this area, and are also an



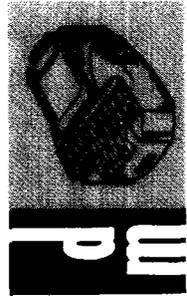
aspect of conservation, both for the primary and secondary recovery.

I think the protection of correlative rights, which has been talked about so frequently this day, as always, has been spoken to by Tenneco's witness regarding the assignment of a 40-acre allowable to an off-pattern well.

But even so, I think that there is no question about the fact that nonstandard location and nonstandard wells will definitely effect the optimum recovery in the well in the pool and should be kept in line in making a decision on this case.

I have nothing further.

MR. UTZ: Are there other statements? Case will be taken under advisement.



dearnley-meier consulting services inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO

I N D E X

WITNESS	PAGE
A. DEAN RIAL	
Direct Examination by Mr. Bateman	8
Cross Examination by Mr. Morris	16
Cross Examination by Mr. Utz	27
THOMAS A. DUGAN	
Direct Examination by Mr. Morris	31
Cross Examination by Mr. Bateman	44
Cross Examination by Mr. Nutter	54
Cross Examination by Mr. Utz	58

dearnley-meier

reporting services, inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO
1203 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO