

Case. Number.

4457

Application,

Transcripts.

Sm all Exhibts.

ETC.

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

February 17, 1971

REGULAR 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: Mr. A. L. Porter
Governor Bruce King

TRANSCRIPT OF HEARING

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1 MR. PORTER: I have an announcement concerning
 2 Cases 4442 and 4457. I had told Governor King some time ago,
 3 as you know, right now he's right in the middle of the
 4 Legislative session over there, and we prevailed on him to
 5 come over and be with us throughout the allowable hearing.

6 I had promised that I could have a quorum without
 7 him to hear the other cases; Mr. Armijo had agreed to sit with
 8 me, and on Monday this week, I was advised that Mr. Armijo was
 9 sick. Again, yesterday. But at that time, he thought he
 10 could be here this morning. But they called in this morning
 11 and said that he would not be able to be here.

12 Now, we're going to have to recess the hearing at
 13 this time because Governor King will have to go back to his
 14 office on account of prior commitments that were made; on the
 15 basis of the information that I had previously given him, he
 16 cannot sit with us during the remainder of the day.

17 After the Legislative session, he'll be with us,
 18 at as many of these hearings as he possibly can.

19 So I'm going to have to recess the hearing at this
 20 time and try to get in touch with Mr. Armijo either by
 21 telephone at home or someone in his office and see whether
 22 he will be available sometime later today or whether we will
 23 have to agree on a date to which we can continue these two
 24 cases.

25 I realize that they are De Novos, that they have

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1 been appealed from the Examiner's recommendations and the
2 Commission's decision on the basis of the Examiner
3 recommendations and that you are, in both cases, anxiously
4 awaiting a decision. But sometimes, circumstances are beyond
5 our control.

6 So at this time, we'll recess the hearing for a
7 few minutes and we'll reconvene, and I'll let you know whether
8 we can proceed with these two cases or what date we can
9 expect to continue them to. So the hearing is recessed.

10 (Whereupon, the hearing stood in
11 a brief recess.)

12 MR. PORTER: The hearing will come to order, please.

13 Again, I want to express my regrets if anybody
14 involved in Case 4442 and Case 4457 has been inconvenienced
15 to any degree, but because of circumstances that were
16 previously explained in the record, there was nothing we
17 could do about it, and we didn't know about it in time to
18 notify you in advance to keep you from having to make the
19 trip, although I don't know why anybody would object to coming
20 to Santa Fe. But I have contacted, during the recess period,
21 Commissioner Armijo and he will not be able to come to attend
22 the hearing today. He said that it would be fine with him
23 if we set the hearing for next Tuesday morning at nine o'clock,
24 and certainly, we hope that he will be in condition to meet
25 with us at that time.

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1 We're going to continue Cases 4442 and 4457 to
2 nine a.m., Tuesday morning. What day of the month will that
3 be?
4 MR. NUTTER: 23rd.
5 MR. HATCH: 23.
6 MR. PORTER: Tuesday morning, February 23rd. So
7 this hearing is adjourned.
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STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) SS

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

Charlotte J. Macias
Court Reporter

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4457
Order No. R-4084-A
NOMENCLATURE

APPLICATION OF TENNECO OIL COMPANY
FOR THE CREATION OF A NEW POOL,
ASSIGNMENT OF A DISCOVERY ALLOWABLE,
AND PROMULGATION OF SPECIAL POOL
RULES, MCKINLEY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing de novo at 9 a.m. on February 17, 1971, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," and was continued to 9 a.m. on February 23, 1971.

NOW, on this 2nd day of March, 1971, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That after an examiner hearing, Commission Order No. R-4084, dated December 22, 1970, was entered creating the Lone Pine-Dakota "D" Oil Pool in McKinley County, New Mexico, assigning an oil discovery allowable to the discovery well, and denying the applicant's request for the promulgation of special pool rules governing said pool.

(3) That the applicant, Tenneco Oil Company, requested and was granted a hearing de novo before the Oil Conservation Commission.

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CASE No. 4457

Order No. R-4084-A

(4) That the applicant, Tenneco Oil Company, seeks the creation of a new pool for the production of oil from the "D" zone of the Dakota formation, and the assignment of an oil discovery allowable to the discovery well.

(5) That the applicant further seeks the promulgation of special rules and regulations governing said pool, including a provision for 80-acre spacing units, with wells to be drilled in either quarter-quarter section.

(6) That the evidence presently available indicates that the Tenneco Oil Company Don Ne Pah Well No. 1, located in Unit D of Section 18, Township 17 North, Range 8 West, NMPM, McKinley County, New Mexico, having its top perforations at 2827 feet, has discovered a separate common source of supply which should be designated the Lone Pine-Dakota "D" Oil Pool; that the vertical limits of said pool should be the "D" zone of the Dakota formation as found in the interval from 2792 feet to 2834 feet on the log of the aforesaid Don Ne Pah Well No. 1, and that the horizontal limits of said pool should comprise the following-described lands:

McKINLEY COUNTY, NEW MEXICO
TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM
Section 18: N/2, SW/4, and W/2 SE/4

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM
Section 13: NE/4 and S/2
Section 24: N/2 NE/4

(7) That the above-described discovery is the deepest oil production in McKinley County.

(8) That the discovery well for said pool, the aforesaid Tenneco Oil Company's Don Ne Pah Well No. 1, is entitled to and should receive a bonus discovery oil allowable in the amount of 28,270 barrels, based upon the top perforations in said well at 2827 feet, to be assigned over a two-year period.

(9) That the applicant has established that one well in the Lone Pine-Dakota "D" Oil Pool can efficiently and economically drain and develop 80 acres.

(10) That in order to prevent the economic loss caused by the drilling of an excessive number of wells, to prevent reduced

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CASE No. 4457

Order No. R-4084-A

recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, special rules and regulations providing for 80-acre spacing units should be promulgated for the Lone Pine-Dakota "D" Oil Pool; that the rules should provide that a well may be drilled in either or both of the quarter-quarter sections; and that a 40-acre proportional factor of 1.00 should remain in effect in the pool until such time as the pool has a gas gathering facility or the gas is being reinjected and thereafter an 80-acre proportional factor of 2.00.

(11) That the special rules and regulations should provide for limited well locations in order to assure orderly development of the pool and protect correlative rights.

(12) That Order No. R-4084 should be superseded.

IT IS THEREFORE ORDERED:

(1) That a new pool in McKinley County, New Mexico, classified as an oil pool for the production of oil from the "D" zone of the Dakota formation, is hereby created and designated the Lone Pine-Dakota "D" Oil Pool, with vertical limits comprising the "D" zone of the Dakota formation as found in the interval from 2792 feet to 2834 feet on the log of the Tenneco Oil Company Don Ne Pah Well No. 1, located in Unit D of Section 18, Township 17 North, Range 8 West, NMPM, McKinley County, New Mexico, and horizontal limits comprising the following-described area:

McKINLEY COUNTY, NEW MEXICO
TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM
Section 18: N/2, SW/4, and W/2 SE/4

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM
Section 13: NE/4 and S/2
Section 24: N/2 NE/4

(2) That the discovery well, the aforesaid Tenneco Oil Company Don Ne Pah Well No. 1, is hereby authorized an oil discovery allowable of 28,270 barrels to be assigned to said well at the rate of 39 barrels per day in accordance with Rule 509 of the Commission Rules and Regulations.

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CASE No. 4457

Order No. R-4084-A

(3) That Special Rules and Regulations for the Lone Pine-Dakota "D" Oil Pool, McKinley County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
LONE PINE-DAKOTA "D" OIL POOL

RULE 1. Each well completed or recompleted in the Lone Pine-Dakota "D" Oil Pool or in the "D" zone of the Dakota formation within one mile thereof, and not nearer to or within the limits of another designated Dakota "D" zone oil pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well shall be located on a standard unit containing 80 acres, more or less, consisting of the N/2, S/2, E/2, or W/2 of a governmental quarter section; provided, however, that nothing contained herein shall be construed as prohibiting the drilling of a well on each of the quarter-quarter sections in the unit.

RULE 3. The Secretary-Director of the Commission may grant an exception to the requirements of Rule 2 without notice and hearing when an application has been filed for a non-standard unit comprising a governmental quarter-quarter section or lot, or the unorthodox size or shape of the tract is due to a variation in the legal subdivision of the United States Public Land Surveys. All operators offsetting the proposed non-standard unit shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the formation of the non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. Each well shall be located no closer than 330 feet to a quarter-quarter section line nor closer than 660 feet to the nearest well drilling to or capable of producing from the same pool.

RULE 5. The Secretary-Director may grant an exception to the requirements of Rule 4 without notice and hearing when an application has been filed for an unorthodox location necessitated

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CASE No. 4457

Order No. R-4084-A

by topographical conditions or the recompletion of a well previously drilled to another horizon. All operators offsetting the proposed location shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all operators offsetting the proposed location or if no objection to the unorthodox location has been entered within 20 days after the Secretary-Director has received the application.

RULE 6. A standard proration unit (79 through 81 acres) shall be assigned a 40-acre proportional factor of 1.00 for allowable purposes until such time as the pool has a gas gathering facility or the gas is being reinjected and thereafter an 80-acre proportional factor of 2.00, and in the event there is more than one well on an 80-acre proration unit, the operator may produce the allowable assigned to the unit from the wells on the unit in any proportion.

The allowable assigned to a non-standard proration unit shall bear the same ratio to a standard allowable as the acreage in such non-standard unit bears to 80 acres.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the Lone Pine-Dakota "D" Oil Pool or in the "D" zone of the Dakota formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location shall notify the Aztec District Office of the Commission in writing of the name and location of the well on or before April 1, 1971.

(2) That, pursuant to Paragraph A. of Section 65-3-14.5, NMSA 1953, contained in Chapter 271, Laws of 1969, existing wells in the Lone Pine-Dakota "D" Oil Pool shall have dedicated thereto 80 acres in accordance with the foregoing pool rules; or, pursuant to Paragraph C. of said Section 65-3-14.5, existing wells may have non-standard spacing or proration units established by the Commission and dedicated thereto.

Failure to file new Forms C-102 with the Commission dedicating 80 acres to a well or to obtain a non-standard unit approved by the Commission within 60 days from the effective

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CASE No. 4457

Order No. R-4084-A

date of this order shall subject the well to cancellation of allowable. Until said Form C-102 has been filed or until a non-standard unit has been approved, and subject to said 60-day limitation, each well presently drilling to or completed in the Lone Pine-Dakota "D" Oil Pool or in the "D" zone of the Dakota formation within one mile thereof shall receive no more than one-half of a standard allowable for the pool.

(3) That Order No. R-4084, dated December 22, 1970, is hereby superseded.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Bruce King

BRUCE KING, Chairman

Alex J. Armijo
ALEX J. ARMIJO, Member

A. L. Porter, Jr.
A. L. PORTER, Jr., Member & Secretary

esr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4457
Order No. R-4084
NOMENCLATURE

APPLICATION OF TENNECO OIL COMPANY
FOR THE CREATION OF A NEW POOL,
ASSIGNMENT OF A DISCOVERY ALLOWABLE,
AND PROMULGATION OF SPECIAL POOL
RULES, MCKINLEY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:30 a.m. on December 16, 1970, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 22nd day of December, 1970, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Tenneco Oil Company, seeks the creation of a new pool for the production of oil from the "D" zone of the Dakota formation, and the assignment of an oil discovery allowable to the discovery well.

(3) That the applicant further seeks the promulgation of special rules and regulations governing said pool, including a provision for 80-acre spacing units, with wells to be drilled in either the northwest or southeast quarter-quarter sections.

(4) That the evidence presently available indicates that the Tenneco Oil Company Don Ne Pah Well No. 1, located in Unit D

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CASE No. 4457
Order No. R-4084

of Section 18, Township 17 North, Range 8 West, NMPM, McKinley County, New Mexico, having its top perforations at 2827 feet, has discovered a separate common source of supply which should be designated the Lone Pine-Dakota "D" Oil Pool; that the vertical limits of said pool should be the "D" zone of the Dakota formation as found in the interval from 2792 feet to 2834 feet on the log of the aforesaid Don Ne Pah Well No. 1, and that the horizontal limits of said pool should comprise the following-described lands:

McKINLEY COUNTY, NEW MEXICO
TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM
Section 18: N/2, SW/4, and W/2 SE/4

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM
Section 13: NE/4 and S/2
Section 24: N/2 NE/4

(5) That the above-described discovery is the deepest oil production in McKinley County.

(6) That the discovery well for said pool, the aforesaid Tenneco Oil Company's Don Ne Pah Well No. 1, is entitled to and should receive a bonus discovery oil allowable in the amount of 28,270 barrels, based upon the top perforations in said well at 2827 feet, to be assigned over a two-year period.

(7) That the applicant has not established that the wells in the subject pool can efficiently and economically drain and develop 80 acres or that the establishment of special rules and regulations, even on a temporary basis, would prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, prevent reduced recovery which might result from the drilling of too few wells, or otherwise prevent waste or protect correlative rights.

(8) That the applicant's request for the promulgation of special rules for the subject pool should be denied.

IT IS THEREFORE ORDERED:

(1) That a new pool in McKinley County, New Mexico, classified as an oil pool for the production of oil from the "D" zone

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CASE No. 4457
Order No. R-4084

of the Dakota formation, is hereby created and designated the Lone Pine-Dakota "D" Oil Pool, with vertical limits comprising the "D" zone of the Dakota formation as found in the interval from 2792 feet to 2834 feet on the log of the Tenneco Oil Company Don Ne Pah Well No. 1, located in Unit D of Section 18, Township 17 North, Range 8 West, NMPM, McKinley County, New Mexico, and horizontal limits comprising the following-described area:

McKINLEY COUNTY, NEW MEXICO
TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM
Section 18: N/2, SW/4, and W/2 SE/4

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM
Section 13: NE/4 and S/2
Section 24: N/2 NE/4

(2) That the discovery well, the aforesaid Tenneco Oil Company Don Ne Pah Well No. 1, is hereby authorized an oil discovery allowable of 28,270 barrels to be assigned to said well at the rate of 39 barrels per day in accordance with Rule 509 of the Commission Rules and Regulations.

(3) That the applicant's request for the promulgation of special rules for the above-described pool is hereby denied.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


DAVID F. CARGO, Chairman

ALEX J. ARMIJO, Member

A. L. PORTER, Jr., Member & Secretary

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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, 1970

TIME: 9A.M.

NAME	REPRESENTING	LOCATION
Walter Fanning	Fanning Oil	Holbro
Ed M. Allen	Fanning Oil	Holbro
Austin Fannariss	Fannariss Oil	Holbro
Phil Thompson	Artistic Refinery	Midland
Harold Miller	El Paso Natl. Gas	El Paso
S. N. Ryan	Pan American	Tulsa
P. T. Mc Grath	U. S. G. S.	Farmington
Nina G. Doherty	PLU Ryan & Co.	Santa Fe
J. E. Damegood	Pan American	Denver
G. C. Kennedy	Ind.	Farmington
H. O. Hustafson	Union Oil	Deming
E. J. Hawley	WTB Co.	Dallas
Raymond Glover	ARCO	Midland
M. D. Taylor	Union Oil	Midland
W. J. Loyd	Novajo Ref.	Artesia
J. H. Joubert	Mobil Oil Corp	Midland

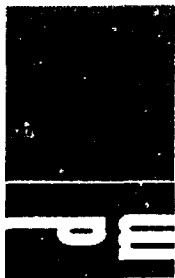
NEW MEXICO OIL CONSERVATION COMMISSION

REGULAR HEARING

SANTA FE, NEW MEXICO

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

NAME	REPRESENTING	LOCATION
Tom Robertson	Admiral Cudd	Midland
Don Dugan	Tamaris	✓
Fred Hansen	Navajo	Artesian
Chas E. Hall	Platcan	Farmington
Gov. T. Buell	PAN Am	Fr. WORTH
Tracy B. Medden	Shell	Houston
J.C. Hart	Shell	Midland
W.A. Hedges	"	"
J.G. Savary	Texaco	"
H.K. Conlinton	Union Carbide & Corp.	Midland
William J. Martin	McWynney & Co.	Oriskany
Don Dugan	Silbert Maxwell	Farmington
M.T. Smith	Navajo Refy	Midland
Dick Booker	Cities Service Oil	
W.A. Jettin	Signal Oil & Gas	Houston
Geo. Eng	Pennaco	Midland



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.

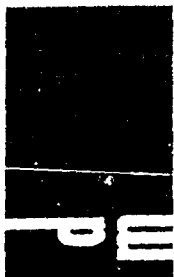
MR. MORRIS: Mr. Examiner, at this time I would like to enter my appearance in the case. I am Richard Morris of Montgomery, Federici, Andrews, Hannahs and Morris, Santa Fe, appearing on behalf of Gilbert S. Maxwell and Beard Oil Company.

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

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PAGE 3

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

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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

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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.

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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

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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

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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.

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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.

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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.

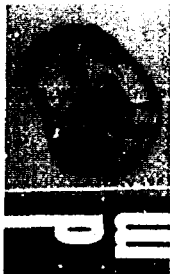
Of the wells that have been drilled, the Yazzie No. 1 is a producing well out of the Dakota D zone that is in the northwest of the northeast of Section 18.

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

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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.

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Now, the gas-oil ratio will increase expotentially 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.

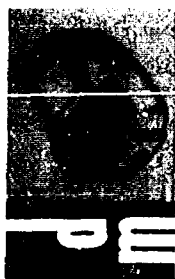
It will provide for equal withdrawals, accompanying with continuity in the pressure drawdown across the reservoir.

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

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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?

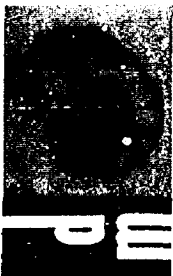
A Well, actually we are looking at the effect on two phases of the nonstandard locations. Considering that one; there are pressure -- our gas-oil ratio will increase with pressure drawdown within the reservoir, we feel that ultimate recovery, primary recovery, for instance, will be curtailed by the fact 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,

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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.

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.

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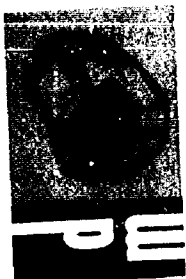
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Q You have not found fractures to exist in any of your core data?

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

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- 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.

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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 Cigosa 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.

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?

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?

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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.

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

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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

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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.

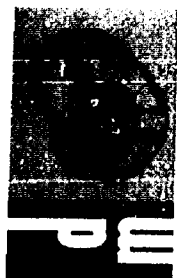
Q Are you familiar with rules that have been adopted by the Oil Commission on this 80 acre spaced oil pools in the San Juan Basin?

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

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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.

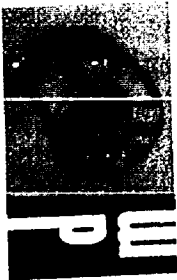
A Okay. To provide continuity for development and definition of the reservoir, we feel that it is important that we consider pressure maintenance or secondary recovery early in the life of this field, because of the potential gas and reservoir voidage problem. We need to define the reservoir as accurately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

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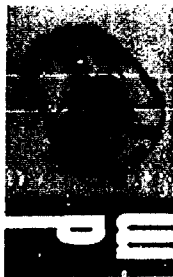


- A Yes, this has the effect of both the primary and secondary.
- Q And then your third one was -- I think you have just stated it.
- A Right.
- Q The optimum of the secondary recovery area.
- A Right.
- Q Due to the better drainage pattern and the better injection pattern?
- A That is true. Regardless 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?

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- 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

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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

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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?

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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?

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- 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?

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- 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.

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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.

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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 extremities 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?

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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

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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

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

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?

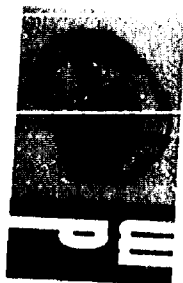
A Well, the Beard Well location has been staked and construction of the location is in progress. They have spent in the neighborhood of \$1,000 to date. They desire to drill the location -- the well at this location, and if the fixed pattern is adopted, I am sure that Beard will be asking for an exception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

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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

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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

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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.

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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-EXAMINATION

BY 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.

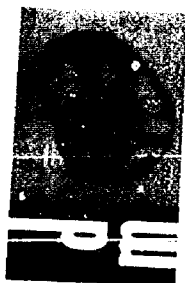
Q Do you expect to get any written approval at any time?

A Yes, sir.

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

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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

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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

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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

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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,

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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

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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.

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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 --

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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.

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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

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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

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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

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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

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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.

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

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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

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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

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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

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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

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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.

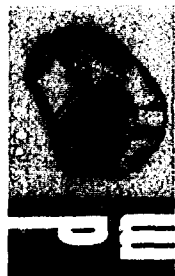
Now, a question of what acreage dedication is going to be allocated to those wells is a bit more difficult, because the wells -- the acreage dedication plats as submitted, I understand were submitted on the basis of the existing Statewide Rules, which are 40-acre rules. And I would join with Mr. Dugan 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.

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

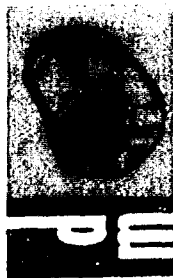
MR. MORRIS: Well, that raises a whole new subject of discussion, Mr. Examiner, which I think has already been exposed in this hearing, which is that you do have dedication of some dry acreage no matter what kind of a well location requirement you have. And so long as operators have located their wells 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.

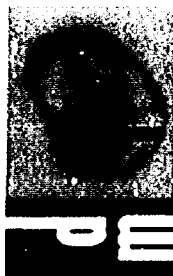
I have nothing further.

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

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STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

We, GLENDA BURKS and LINDA MALONE, Court Reporters, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by us; and that the same is a true and correct record of the said proceedings, to the best of our knowledge, skill and ability.

Glenda Burks
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Linda Malone
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I do hereby certify that the foregoing is a complete record of the proceedings of the hearing of Case No. 44-57 heard by me on September 16, 1970.
[Signature]
 New Mexico Oil Conservation Commission

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
November 18, 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 A. Utz, Examiner.

TRANSCRIPT OF HEARING

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1 MR. UTZ: Case 4457.
2
3 MR. HATCH: Case 4457. Application of Tenneco Oil
4 Company for the creation of a new pool, assignment of discovery
5 allowable, and promulgation of special pool rules, McKinley
6 County, New Mexico.
7
8 MR. BATEMAN: Mr. Commissioner, I'm Ken Bateman of
9 White, Gilbert, and Kelly, appearing for the applicant.
10
11 MR. UTZ: Any other appearances?
12
13 MR. STEVENS: I'm Don Stevens of McDermott, Conley and
14 Stevens, appearing for Allen J. Atweil. We will have no
15 witnesses, we don't think.
16
17 MR. UTZ: Other appearances? You may proceed.
18
19 MR. BATEMAN: I have one witness. I'd like him
20 sworn, please.
21
22 (Witness sworn)
23 (Whereupon, Applicant's
24 Exhibits 1 through 8
25 were marked for identification.)
26
27 MR. BATEMAN: Mr. Hatch, I understand there's been
28 some difficulty with the advertisement of this case. According-
29 ly, if the Commission please, I'd make a motion that testimony
30 be heard at this time, that the case be readvertised for the
31 next available date in order to issue after the completion of
32 the readvertisement.
33
34 MR. UTZ: There was a mistake in the advertisement

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1 of this case. Accordingly, if the Commission please, I'd make
2 a motion that testimony be heard at this time, that the case be
3 readvertised for the next available date in order to issue
4 after the completion of the readvertisement.

5 MR. UTZ: There was a mistake in the advertisement
6 in the local newspaper. Therefore, we will hear the case at
7 this time, readvertise and call the case at the next --

8 MR. HATCH: The next examiner hearing will be
9 advertised and will be December the 16th.

10 MR. UTZ: December the 16th, '69.

11 MR. HATCH: I hope I'm correct.

12 MR. UTZ: We'll call the case on examiner hearing on
13 December the 16th in the event that anybody cares to make an
14 appearance --

15 MR. BATEMAN: Thank you.

16 MR. UTZ: -- before the order is released.

17 A. DEAN RIAL
18 having been first duly sworn, was examined and testified as
19 follows:

20 DIRECT EXAMINATION

21 BY MR. BATEMAN:

22 Q State your name and occupation and place of residence.
23 A A. Dean Rial. I work for Tenneco Oil Company, district
24 geological engineer. I live at 2685 U Concord in Denver.

25 MR. UTZ: Would you spell that name, please.

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1 THE WITNESS: R-i-a-l.
2 MR. UTZ: First name?
3 THE WITNESS: A. Dean.
4 MR. UTZ: How do you spell it?
5 THE WITNESS: Oh. Initial A, then Dean.
6 MR. UTZ: Oh. Dean?
7 THE WITNESS: Right. Dean. Right. D-e-a-n.
8 MR. UTZ: For me you should say A.
9 Q (By Mr. Bateman) Mr. Rial, have you previously testified
10 before the Commission?
11 A No, I haven't.
12 Q Would you state your educational background and work
13 experience, please.
14 A All right. I graduated from Texas A & M in 1957 with a
15 BS degree in Geological Engineering and a BS degree in
16 Petroleum Engineering. With the exception of just a brief
17 tour in the armed forces, I've been continually employed in
18 the oil and gas business in area of geology and related
19 petroleum engineering.
20 Q Are you personally familiar with the area in question, the
21 application today?
22 A Yes, I am.
23 MR. BATEMAN: Are the witness's qualifications
24 acceptable?
25 MR. UTZ: Yes, sir, they are.

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1 Q Mr. Rial, refer to Applicant's Exhibit No. 1 now and state
 2 what Tenneco seeks by its application.

3 A Tenneco Oil Company seeks to establish a new pool, a
 4 special pool rule and the assignment of discovery allowable
 5 to the discovery well, the Don Ne Pah No. 1, which is
 6 located in the northwest of the northwest of section 18,
 7 seventeen north and eight west of McKinley County, New
 8 Mexico. We also propose limits as shown on exhibits
 9 outlined in red on the Exhibit No. 1. And we intend to
 10 present the available information to indicate that this
 11 is a new common source of supply and underlines this area.

12 Q What other information appears on Exhibit 1 relative to
 13 your application?

14 A This is a -- it shows a geographic limits of the proposed
 15 Lone Pine Dakota D zone or zone pool, and this is outlined
 16 in red. We show the location of the discovery well, the
 17 Don Ne Pah No. 1, and this is notated by the red arrow.
 18 The total depth of all dry holes are shown in the area, and
 19 we show all producing wells within the two mile radius of
 20 the Don Ne Pah No. 1. Circled in red on this exhibit are
 21 oil wells that have penetrated at least the top of the
 22 Dakota D zone. And we have also indicated by code down
 23 in the legend here the producing arisance of oil wells.
 24 We also note the locations of the Hospah field and also the
 25 south Hospah field in relationship to the proposed Lone Pine

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1 Field.

2 Q All right. Now, regarding the -- just for the record,
3 the well circled in red, are all of those wells productive
4 in the D zone?

5 A No, they aren't. Now, this represents just wells that
6 have penetrated. The wells that are now producing from
7 the Dakota D zone are the Tenneco Hospah Well No. 10,
8 which is located just about in the center of the north
9 half of section 12 and --

10 MR. UTZ: Just a minute. I want to catch these as
11 you --

12 THE WITNESS: We have these producing wells identified
13 on the next exhibits specifically, but --

14 MR. UTZ: Oh, do you? All right. Well, perhaps it
15 would be well to refer us to that.

16 Q All right. What are the vertical limits of the Dakota D
17 zone?

18 A Well, I'd like to refer to Exhibit 2. This is a copy of a
19 dual induction lateral log of the discovery well, the Don
20 Ne Pah No. 1. It was measured to a depth of 2946. Noted
21 on the log is the vertical limits of the Dakota D zone as
22 shown on the two inch scale as being from 2792 to 2834.
23 Also shown on this log are the vertical limits of the
24 other producing zones in this immediate area.

25 MR. UTZ: Would you repeat those?

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1 THE WITNESS: Okay. Excuse me. We're on the -- we
 2 have it on the small scale, or the two-inch scale.

3 MR. UTZ: All right.

4 THE WITNESS: All right. The top of the Dakota D
 5 zone is at 2733, and the -- no. It's B zone. The top of the
 6 B zone is 2792 to 2834.

7 Q (By Mr. Bateman) All right. Now, Exhibit No. 2 is a log
 8 of the discovery well; is that correct?

9 A Yes, it is.

10 Q Do you have anything further to say about Exhibit No. 2
 11 before we go on?

12 A We also show on the log the perforations in the D zone,
 13 which are from 2802 to 21 and also from 2827 to 29.

14 Q All right. Mr. Rial, refer to your Exhibit No. 3 and
 15 state what that relates regarding the application. Also
 16 identify it, if you would.

17 A All right. Exhibit No. 3 is a structure map drawn on the
 18 top of the Dakota D zone as defined in the Exhibit No. 2.
 19 On this we see the relative locations of the Hospah field,
 20 which is just north of Fault B, and Fault B actually
 21 separates the north Hospah from the south Hospah. Fault
 22 A is shown, which is a normal down to the south fault
 23 running more or less northeast southwest. This fault
 24 separates the production in the south Hospah field from
 25 the proposed Lone Pine Field. We see here noted in red or

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1 underlined in red right along or just north of Fault A we
 2 have noted the fault cuts and the location on a subsea
 3 depth of the position of that fault in each particular
 4 well. This fault, for instance, let's take a Tosoro 17
 5 well, which is located by the red dot in the north half of
 6 section seven of 17 north and 8 west. Here we have
 7 identified the fault as being a hundred and seventy-five
 8 feet and the location of the cut on the fault as a plus
 9 6228. We also have identified on here all wells that are
 10 now presently producing from the Dakota D zone. They are
 11 notated by both the red and the green dots. The red dots
 12 are significant in that they produce only from or have been
 13 completed only in the Dakota D zone.

14 The green dots are wells that are completed, have been
 15 perforated in the Dakota D zone and also are commingled with
 16 the Dakota A, the B and the girasic morrison. We see here --
 17 we have identified fault as being the separating barrier
 18 between the south Hospah production and the proposed Lone
 19 Pine field in the Dakota D zone. We see here that we have
 20 identified on the left-hand portion of the western portion
 21 of the field, we have dashed a permeability barrier. Now,
 22 the well -- the Santa Fe Pacific Railroad No. 2, which is
 23 located in the northwest of the southwest of section 13 is
 24 structurally favorable for production from the D zone.
 25 However, on completion it may just be a slight amount of

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1 oil and a considerable amount of water. We also find in
 2 the A one which is located in the northwest of the north-
 3 east of section 23 of 17 north and 9 west, this well also
 4 was extremely tight in the Dakota D zone. Both of these
 5 wells have been completed in the Dakota A zone. We
 6 interpret as being a permeability barrier of some nature
 7 or some -- of either permeability barrier or stratigraphic
 8 barrier that exists along the western portion of the
 9 field south of the Fault Block A. Also noted on the
 10 structure map of significance to the field we show a
 11 contour which we have identified as oil down to plus 4205
 12 feet. Now, this is identified as the limits of our
 13 production from the Gigosa No. 1, which is located in the
 14 northwest of the southwest of section 18 of 17 north and
 15 8 west. We have also identified a gas cap present in the
 16 reservoir and we have presently located that at plus 4260,
 17 as shown by the dashed line with the X on it.

18 Q What is the nature of the production in the D zone wells
 19 to the north of Fault A?

20 A Do you want to go to the next exhibit, then?

21 Q Not just yet.

22 A What is the relationship?

23 Q No. The nature of the production.

24 A Oh, excuse me. The nature of the production in the south
 25 Hospah field is gas. We have no oil production in the south

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1 Hospah Dakota D zone.

2 Q All right. Would you refer to Exhibit 4 and identify
 3 that and state what that has to do with the application.

4 A I would like to go back to just Exhibit 3 a minute before
 5 we look at Exhibit 4. Also shown on here are two cross
 6 section lines lettered A to A Prime and also B to B Prime.

7 There is also an index map in the lower portion of Exhibit --

8 Q 4?

9 A -- 4 which shows the cross section. This is a cross
 10 section that was drawn -- subsurface cross section was
 11 drawn from Tenneco Wiggam No. 3, located in Section 11 of
 12 17 north and 9 west through Tenneco Hospah Unit No. 23 in
 13 section 12 of 17 north and 9 west. Across the Fault A
 14 into the CTV Hospah A5 Section 12 of 17 9 west and into
 15 the discovery well of the Don Ne Pah No. 1, then on down
 16 to the Tenneco Gigosa No. 1, located in Section 1817 and
 17 north 9 west. Essentially what we show here is the
 18 separation of the Hospah field to the north where we have
 19 the gas and the proposed Lone Pine field to the south where
 20 in the vicinity of the discovery of the Don Ne Pah No. 1.
 21 We see that we've shown on the Hospah Unit 23 the
 22 completions as designated by the gas symbols in all three
 23 zones. We see in -- which is producing out of Oil Dakota
 24 A, the Dakota B and then the Dakota D. Of real significance,
 25 we feel, is the CTV Hospah A5. Although this did not get

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1 to the Dakota D zone its structural relationship strongly
2 supports the presence of the fault and the separation of
3 the two reservoirs.

4 Q All right. Mr. Rial, let's move on to Exhibit No. 5, if
5 you would identify that and again state what relevance
6 that has to the application.

7 A Exhibit No. 5 is cross section BB prime, which is more or
8 less a north-south cross section that runs from Tosoro
9 Santa Fe Pacific Railroad No. 17 in Section 7 of 17 north
10 and 8 west through the Walker Brothers or Tosoro, now unit
11 Santa Fe Pacific Railroad No. 11, also located in Section
12 7 of 17 north and 8 west down to Tenneco Don Ne Pah No.
13 1, the discovery well.

14 As noted here that the Tosoro Santa Fe Pacific No.
15 17 was completed in the Dakota D sand. As we also show
16 the structural relationship from one side of the fault
17 to the other, also shows the fault cut in the Santa Fe
18 Pacific Railroad No. 17. Of significance, as in the other
19 cross sections of Walker Brothers, shows the relationship
20 of the shallower beds and as we cross the fault.

21 Q Do you have anything further to state about the last three
22 exhibits?

23 A Only that they tend to demonstrate and indicate the
24 presence of the fault and the separation of the production
25 and producing area from the north to the south and the area

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1 of the proposed Don Ne Pah Lone Pine Fields.

2 Q All right. If you'd move on to your Exhibit No. 6 and
 3 identify that and state what significance it has and
 4 particularly relative to the discovery well.

5 A This is a -- Exhibit No. 6 is the tabulation of the
 6 completion data available on the Dakota D zone in the
 7 McKinley County, New Mexico. This compares the Don Ne
 8 Pah No. 1, the pertinent data, as far as data completion,
 9 subsea tops, the perforations, initial potential, gas-oil
 10 ratio, oil gravity, bottom hole pressure and average
 11 porosity.

12 This compares these with the Tosoro Santa Fe
 13 Pacific No. 17, which was also completed in D zone, along
 14 with Tenneco's Hospah 10 and Hospah 23. The significance
 15 is that the wells in the fault block to the north are all
 16 gas.

17 Q All right. Mr. Rial, backing up just a little bit on the
 18 Don Ne Pah Well No. 1, have you made any inquiries as to
 19 whether or not there is other oil production at the depth
 20 in the County?

21 A According to the Oil Conservation Commission records, this
 22 is the deepest oil production in the County and would be
 23 subject to the appropriate discovery allowable under the
 24 rulings.

25 Q All right. Moving on to Exhibit No. 7, please identify

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1 that and state what significance that has.

2 A Okay. No. 7 is a summary of the average reservoir data
 3 from the three primary producing wells. Now, let me regress
 4 a minute to exhibit -- refer back to Exhibit No. 3. We
 5 show on here locations of three red arrows and the locations
 6 of point two, the Don Ne Pah No. 1, the Gigosa No. 1,
 7 located in Section 18 and also to the Santa Fe Pacific
 8 Railroad No. 1, which is located in the northwest of the
 9 southwest of Section 13.

10 These wells were the initial three wells that were
 11 drilled in the development program and they represent the
 12 more or less are base of knowledge as far as reservoir
 13 properties and flood properties for this area, and also
 14 represent the majority of the production data to date.

15 Summarized here is what we consider average reservoir
 16 data and representative of the field of the reservoir
 17 itself. We have an average cost of twenty-four -- twenty
 18 point four percent, or saturation of thirty-five,
 19 permeability.

20 Now, this is permeability to reservoir fluid of
 21 thirty to fifty millidarcies; reservoir temperature of a
 22 hundred and eight degrees; original formation -- original
 23 reservoir pressure of a hundred and ten PSIG, oil gravity
 24 of fifty-four degrees, APE solution, gas-oil ratio of nine
 25 hundred and seventy standard cubic foot per barrel, and

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1 an average thickness of twelve feet. These perimeters
 2 were taken from data based on core analysis, bottom hole
 3 pressure build-up test, crude samples and TVT data.

4 Q All right. Continuing on to Exhibit No. 8, please identify
 5 that and state what significance that has.

6 A All right. The Exhibit No. 8 is a plot of the bottom hole
 7 pressure in the Dakota D reservoir. It is pressure shown
 8 on the left as at a datum of forty-two hundred fifty feet,
 9 and time by months is along the bottom.

10 The wells plotted here are noted. The Santa Fe
 11 Pacific Railroad No. 3, the Don Ne Pah No. 1, the Santa Fe
 12 Pacific Railroad No. 1 and the Gigosa No. 1, the Santa Fe
 13 Pacific No. 5 and the Don Ne Pah No. 2 and the Santa Fe
 14 Pacific Railroad No. 6.

15 Now, based on the pressure data taken on the Don Ne
 16 Pah during the early part of June, 1970, we had initial
 17 pressure of one thousand and ten pounds. Now, on the
 18 latter part of June, a bottom pressure was -- build-up
 19 was taken, and it had declined to approximately nine
 20 hundred and seventy-nine to eighty pounds.

21 Upon the drilling of the Gigosa, we took a bottom
 22 hole pressure at that point, which is approximately nine
 23 hundred and eighty pounds. That is the green triangle.
 24 Upon the completion of the Santa Fe Pacific Railroad No.
 25 3, we had a bottom hole pressure of just about nine hundred

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1 and forty-nine to nine hundred fifty pounds. That was
 2 represented by the blue dot. A bottom hole field was shut
 3 in during the latter part of October, 1970, and we took a
 4 bottom hole pressure survey on the Don Ne Pah and the
 5 Santa Fe Pacific Railroad No. 1 and the Gigosa No. 1, and
 6 they were represented by their respective pressure in the
 7 latter part of October.

8 We can see by this that the Don Ne Pah No. 1 had
 9 declined to about nine hundred and twenty pounds. Follow-
 10 ing the second development phase in which wells No. 3,
 11 Santa Fe Pacific No. 3, No. 5, No. 6 and the Don Ne Pah
 12 No. 2 were drilled, we took bottom hole pressures of these
 13 wells.

14 It's interesting to note and particularly significant
 15 to the -- understanding the reservoir conditions that the --
 16 most all our productions have been obtained from the three
 17 wells, the Don Ne Pah, the Gigosa and the Santa Fe Pacific
 18 No. 1, and this is represented by the cumulative oil
 19 production in barrels which, as of about the 7th of
 20 November, had produced about -- almost 36,500 barrels from --
 21 primarily from three different wells.

22 We note here the location and the pressure of Santa
 23 Fe Pacific Railroad No. 5 which is just about twenty-five,
 24 I mean, excuse me, 925 pounds. We also note the pressure
 25 on the Don Ne Pah No. 2 which we were taking last week

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1 and were there also at 925 pounds.

2 This indicates that the Santa Fe Pacific Railroad No.
 3 5 had not produced and neither had the Don Ne Pah No. 2
 4 and the Santa Fe Railroad No. 6 and they indicate very
 5 strongly that we have very excellent reservoir continuity
 6 in the wells that we have drilled.

7 I think that in discussing the reservoir at this
 8 time that it should be pointed out that by its pressure
 9 we -- by the presence of the gas cap we do have a saturated
 10 reservoir. And, I think that we feel now that the reservoir
 11 mechanic or primarily that of the solution gas drive, we
 12 should see some benefit from gas cap expansion because of
 13 the steady decline in our reservoir pressure with cumulative
 14 production we see no indications of water influence at this
 15 time.

16 I think that these conditions suggest to us early
 17 consideration for pressure maintenance there and our
 18 secondary recovery for optimum oil recovery from this
 19 field.

20 Q Mr. Rial, from present available information, do you
 21 believe that the wells in the proposed pool can effectively
 22 drain eighty acres?

23 A Yes, I think that they can very easily effective draining
 24 of eighty acres. We have good permeabilities and good
 25 pressure distribution distributed even at this early time

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1 in other development programs.

2 Q Should the Commission see fit to grant your application,
 3 what pool rules would you propose?

4 A We would propose a new pool designation as Lone Pine
 5 Dakota D Pool. We would propose that eighty acre spacing
 6 be applicable with provision for oversize proration units.

7 We propose fixed locations with the well to be located
 8 in the northwest and southeast of each 160 acre governmental
 9 quarter sections. Within this location we would propose
 10 the standard tolerance of 330 feet from the eastern forty-
 11 acre tract, from the boundaries of the forty acre tract in
 12 which the fixed well location was.

13 We also propose double allowable based on one hundred
 14 percent average participation. We propose a gas-oil ratio
 15 limit of 2,000 to 1 with provisions for quarterly well
 16 tests. We are proposing field results, these as temporary
 17 field results to cover a period of one year from date of
 18 order.

19 Q Why are fixed locations desirable?

20 A Tenneco, we feel at this point in the reservoir that vixed
 21 location provide an orderly and uniform development. We
 22 see no strong topographic obstacles that would prevent
 23 otherwise.

24 We feel that a -- since we have excellent reservoir
 25 communications present at this time that there is not a

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1 problem of reservoir withdrawals or competition within a
2 reservoir. We feel that ^{orally} ~~orally~~ well spacing will enhance
3 both the primary and secondary recovery of oil and gas from
4 this reservoir, and we also feel that it will protect
5 correlative rights and prevent undue pressure drawdown
6 which is extremely critical in the type of reservoir in
7 local areas.

8 It will also help us to efficiently define, and
9 adequately define, the boundaries and limits of the
10 reservoir at an early date.

11 Q In your opinion, will the wells produce the requested
12 allowable?

13 A Yes, they will.

14 Q And finally, in your opinion, would the granting of your
15 application be in the interest of conservation and would
16 it prevent waste and would it protect correlative rights?

17 A Yes, it would.

18 Q Were Exhibits 1 through 8 prepared by you or under your
19 direction?

20 A Yes, they were.

21 MR. STEVENS: Mr. Commissioner, I offer Exhibits 1
22 through 8 at this time.

23 MR. UTZ: Without objection, Exhibits 1 through 8
24 will be entered into the record in the case.

25 MR. STEVENS: Mr. Rial, do you have anything further

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1 to offer at this time?

2 THE WITNESS: No, I don't.

3 MR. STEVENS: That concludes our direct testimony.

4 MR. UTZ: Any questions of the witness?

5 CROSS EXAMINATION

6 BY MR. KENDRICK:

7 Q Mr. Rial, I believe in your direct testimony you testified
8 that the original reservoir pressure was 110 pounds.

9 A Yes, that's correct.

10 Q Plat says 1,010 pounds instead of 110.

11 A Excuse me, 1,010 pounds is correct.

12 Q On Exhibit 8, I think your test for the first pressure
13 with the blue dot was identified as Santa Fe Pacific
14 Railroad No. 3. The plat shows that to be Santa Fe
15 Pacific Railroad No. 1.

16 A Test in August, right.

17 Q With your proposed 80-acre repattern, do you propose to
18 set out the specific 80-acres of a quarter section to be
19 dedicated or would you leave that to the flexibility of
20 the operator?

21 A We have designated on the Exhibit 1 a specific alignment
22 of the 80-acres. However, we have no real strong feelings
23 as to the alignment as long as they are restricted to each
24 80-acres representing one quarter section, quarter section.

25 Q Do you mean that 240 would lie north and south from each

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1 other to be delegated to the same well?

2 A Yes, they would. Yes, they would.

3 Q This might propose a bit of a problem in the vicinity to
4 the east half of the east half of Sections 13 and 24 where
5 that the additional fractional lots would be added in such
6 that both lots would be added into one drill tract instead
7 of into two drill tracts?

8 Does your footage proposal of 330 feet from the
9 boundary of the 40-acre tract in the instance of the east
10 half of the east half of Sections 13 and 24, is it your
11 intent that it would be 330 feet from the edge of that
12 half of the drill tract where these partial lots would be
13 added on or would that be 330 feet from the boundary of
14 the 40-acre tract which is the full standard 40-acre
15 tract?

16 A It was our intent for this to be -- have the tolerance
17 within 330 feet of the lease line whether it would be in
18 the over-size units or in a regular sized unit?

19 Q Three hundred thirty feet from the tract line?

20 A Right, from the tract line.

21 MR. KENDRICK: I believe that's all.

22 THE WITNESS: This doesn't really pose a problem
23 in the event that we have already drilled two of the wells
24 under the normal 40-acre location of the Santa Fe Pacific
25 Railroad No. 5 and No. 6.

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1 Q (By Mr. Kendrick) The reason I considered that it might
 2 pose a problem is that in the well, an oil well drilled
 3 in northwest of the northeast of Section 13, which would
 4 be below the gas-oil contact would be an oil well with an
 5 80-acre plus a fractional lot. As it is, you have 80 acres
 6 plus two fractional lots dedicated to a gas well singularly
 7 in the southeast portion.

8 A Excuse me. I misunderstood your initial point. Would you
 9 repeat that, please?

10 Q Santa Fe Pacific Railroad No. 6 --

11 A Right.

12 Q -- would have 80 acres plus two fractional lots dedicated
 13 to No. 6 as a gas well?

14 MR. UTZ: Which 80 acres?

15 MR. KENDRICK: Being the east half of the east half
 16 plus two fractional lots along the section.

17 If an oil well is drilled in the northwest of the
 18 northeast of Section 13 and the north half dedicated to that
 19 oil well that would offer on oil allowable of 80 acres plus one
 20 fractional lot if the north half of the northeast quarter is
 21 dedicated. Similarly the Santa Fe No. 5 in the southeast south-
 22 east of Section 13 would have 80 acres plus two fractional lots
 23 if the east half of the southeast quarter is dedicated; if the
 24 south half of the southeast quarter is dedicated 80 acres and
 25 one fractional lot would be dedicated to the No. 5 well. And

1 eighty acres and one fractional lot would be dedicated to the
2 No. 1 which is in the gas cap area.

3 So there is a substantial difference in the amount of
4 oil allowable assigned to wells if a rigid acreage dedication
5 pattern is established here. Well, we have no strong objection
6 or strong position as to the alignments of the unit. We felt
7 there should be some conformity to them.

8 I believe that's all my questions.

9 MR. UTZ: You are proposing in the rules a rigid
10 proration unit pattern?

11 THE WITNESS: No, we have not -- I don't -- we did
12 not propose that. It was indicated on our map, but we do not
13 necessarily feel that this is a -- should become a part of the
14 rules, themselves.

15 MR. UTZ: In other words, it is satisfactory with
16 you to dedicate the north -- or north-south, east or west?

17 THE WITNESS: Right, as long as they are restricted
18 to the quarter quarter sections of no more than two units per
19 quarter quarter section -- quarter section, excuse me.
20
21
22
23
24
25

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1 MR. UTZ: Other questions?

2 MR. STEVENS: Mr. Rial, do you --

3 MR. UTZ: Would you identify yourself for the court
4 reporter?

5 MR. STEVENS: Donald Stevens with the firm of
6 McDermott, Conley and Stevens, representing Alan Antweil.

7 CROSS EXAMINATION

8 BY MR. STEVENS:

9 Q Mr. Rial, do you propose to add the lots along the east
10 side of Sections 12, 13 and 24 to the existing wells to
11 obtain an increased allowable based on overage and acreage?

12 A Yes, we do.

13 Q Could you tell us if the Pazo and Tosoro No. 17 well in
14 Section 7 zippers producing out of the D which produces
15 oil in your proposed field area?

16 A Yes. It's producing out of the same interval as what we're
17 producing out of in the Don Ne Pah, yes.

18 Q Do you notice any pressure differentials, or do you know
19 of any pressure differentials between that well and your
20 oil wells?

21 A We have no data to indicate -- we have no data on the
22 pressure on the Tosoro 17. The well was -- there is no
23 gas market in the area, and the well was essentially shut
24 in.

25 Q Was there any oil produced out of that well to your

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1 knowledge?

2 A Not to my knowledge, no.

3 Q Was there any other gas producing out of the D zone in any

4 of these other wells you've marked as gas wells?

5 A This is something that's extremely difficult for us to

6 determine, because in the completion of the gas and the

7 completion of the Tenneco Hospah 23 and 10, all zones

8 were -- although treated separately were tested as -- they

9 were all tested together. So we do not really know whether

10 there was any contribution or how much contribution came

11 out of the D zone, itself. Our feeling is that primarily

12 most of the gas came out of the A zone in both the 10 and

13 the 23.

14 Q You're proposing only to have rules applicable to the D

15 zone; is that correct?

16 A That's correct.

17 Q If you find oil in any of these other wells in the B or

18 C or A, would you seek a discovery allowable and new pool

19 designation?

20 A Yes. I think we would at this time, because we feel that

21 this D zone is a common source of supply and separated from

22 the other zones.

23 Q Would you propose to dual complete a well in which more

24 than one of those zones was completed? In other words,

25 suppose you have the D and the B producing. Would you

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1 propose to dual that well or drill two wells to that zone?
2 In other words, you do not propose to commingle them?
3 A No. I do not propose to commingle them.
4 Q And yet the 17 is commingled as far as gas is concerned;
5 is that correct?
6 A No. The 17 is a single completion in the D zone.
7 Q That's only in the D?
8 A Only the D, yes. The gas zones in the 10 and the 23 are
9 commingled.
10 Q The D and other zones?
11 A Right.
12 Q Would you have any objection to commingling all of these
13 zones together in one well board to avoid waste of drilling
14 new wells and so forth if they should develop?
15 A I think that -- yes. I think that we would not initially,
16 unless we have made a determination whether this is
17 initially a separate reservoir. I do not feel that we
18 should commingle the oil production if found in the A zone
19 or the B zone with that of the D zone.
20 Q Are you familiar with the other Dakota field in the basin
21 and whether they are, in fact, commingled or are separate?
22 A We have -- yes. We have -- our correlation is based -- or
23 nomenclature here of the A -- of the B and the D zones are
24 based on a network of cross sections on a subsurface
25 correlation. Yes. To our knowledge, there are other

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- 1 areas within the basin where these zones are commingled.
- 2 Q Do you note any deleterious effects from this?
- 3 A There are to my knowledge no oil wells. Most all of
- 4 these are gas. There are no oil wells that are commingled.
- 5 Q The Rattlesnake Dakota Pool is one zone?
- 6 A To the best of my knowledge, yes, it is.
- 7 Q Referring to your structure map, Exhibit No. 3, if we
- 8 can read that for a moment, would you give us your --
- 9 you have stated the fault A you have observed in the wells
- 10 and in your Exhibit No. 2 the electric or was it the --
- 11 A Dual --
- 12 Q No. It was the cross section. Your second cross section.
- 13 A All right.
- 14 Q You showed that in the Well No. 17?
- 15 A Yes.
- 16 Q What was your evidence of the fault in that particular
- 17 well? That was thickening or thinning of the zone?
- 18 A No. The evidence was the thing of the zone in the Santa
- 19 Fe Pacific Railroad -- Tosoro Santa Fe Pacific Railroad
- 20 No. 17. As we show there, it actually has a hundred and
- 21 seventy-five feet missing.
- 22 Q In other words, from your orange line on the Tosoro well to
- 23 the orange line to the left on your other wells there's
- 24 one hundred seventy-five feet missing, right?
- 25 A Approximately, yes.

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- 1 Q Does that apply also down in the Dakota? In other words,
 2 you'll have the same one hundred seventy-five feet missing?
 3 A You should have recently, yes.
 4 Q I note, then, that you have marked on here the amount of
 5 footage flow, I would presume, in each case, along the
 6 line of that cross section or that fault. The 2-F in the
 7 northeast northeast of 7 you show to have a hundred twenty
 8 feet of growth with a greater amount of the other three
 9 wells. Further down on the west side of this fault I note
 10 that the last contour line you have on the south side of the
 11 so-called faults, and then the north side it's 4200 in
 12 each case. On that basis would you presume that down dip
 13 to the southwest and to the northeast there's no fault?
 14 Since these contour lines are practically together here,
 15 it would show, I would guess, maybe twelve feet of fault --
 16 flow. Pardon me. And you show yours from the center of
 17 the field off to the northeast a lessening in the flow.
 18 From this could you presume that as you go further down dip
 19 to the northeast and further down dip to the southwest
 20 that the fault disappears?
 21 A Although this is probably what is indicated here, a fault
 22 of this size -- one we do not have -- we cannot find the
 23 fault identified in any of the wells to the south. We see
 24 the throw of variable along the data that we have shown here,
 25 and this is possibly because of the poor coorelation, give

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1 or take a few feet, maybe some stratigraphic changes in
 2 these -- in the wells, and it's also conceivable that there
 3 may be more faulting in the area. Now, we do not know
 4 when we have no control over the faulting or faulting
 5 pattern to the southeast. I would presume that a fault
 6 of the size should continue and be a major fault in the
 7 area.

8 Q But your structure map, as shown, would not so indicate
 9 that, would it, inasmuch as you show only about twelve
 10 feet of throw in the southwest portion along Fault A and
 11 a lessening in the amount of throw going to the northeast.

12 A No. It does not indicate that I do not think that the
 13 fault dies out, though.

14 Q Do you believe that fault is an effective seal between
 15 the gas well in Section 17 and other wells in that north
 16 area and the proposed field under discussion?

17 A Yes, I do.

18 Q You have no pressure to justify that, though?

19 A No. We do not have any positive pressure information that
 20 would indicate that it's a sealing fault.

21 Q In other words, it could be, then, that these wells in
 22 Section 13, 18 and 24 would be connected with the wells
 23 producing in Section 7 reservoir.

24 You mean the one well in the Tosoro 17 and also at this
 25 case -- let me rephrase my question. Are you familiar

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1 with Well No. 16 in the northeast or northwest of Section
 2 7?

3 A Yes, I am.

4 Q Could you tell us what produces from this and when it was
 5 completed?

6 A I do not know when it was completed. It did -- it's
 7 producing out of our nomenclature Dakota B zone. Right.
 8 I do not know the date of completion.

9 Q If there is communication across this fault, then you
 10 could presume that the B, C, D and A zones would be in
 11 communication with each other if there's communication
 12 across the fault.

13 A You mean by the present the fact that they're open only
 14 in the Tenneco Wells No. 13 and 10?

15 Q No. Really what I'm asking is if, in fact, there's
 16 communication across this fault as shown, since you had
 17 A, B, C and D all in contact with the fault would there,
 18 in fact, be communication between A, B, C and D on the
 19 north side of the fault and on the south side of the
 20 fault?

21 A Well, I would assume, then, the only way that we could
 22 have communication between the north side is for the
 23 fault not to be a sealing fault. We find that -- and if
 24 it's not a sealing fault, then it's possible for the
 25 zones to be in communication. Although it does not

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1 necessarily prove that because one is in communication
 2 that all of them are in communication. I seriously doubt
 3 because of the magnitude of the fault as indicated where
 4 we can find it that a fault of this nature is not a
 5 sealing fault.

6 Q Do you find any evidence of a sealing fault between the
 7 north half and the south half or the north Hospah and the
 8 south Hospah of the Gallup level? Are there any pressure
 9 differences or are you familiar with that?

10 A No. I'm not familiar with the Gallup.

11 Q I'll withdraw that question. Your evidence for North Dip
 12 from Well No. 6 in Section 13 is based, is it not, on
 13 just your opinion of countour? There is no well up there
 14 proving north or northwest dip, is there?

15 A The only basis for the northwest dip is the -- let's go
 16 back to our Exhibit No. -- I believe it was 3. 3 is the
 17 structure map. All right. 4, which is the long cross
 18 section. And this is really one of the things that is the
 19 presence of the well or the shallow well, which is Wiggam
 20 CTV Hospah A-5. Although it didn't get all the way to
 21 Dakota, it does indicate that at a structural datum on the
 22 upper Hospah it's lower. Therefore, we do have to honor
 23 a reversal back in to the northwest.

24 Q How much lower is that? Do you have that figure offhand?

25 A No, I don't. About seventy-five feet.

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1 MR. STEVENS: I don't believe I have anymore
2 questions. Just a moment. Just one point of clarification.
3 Q Is the three hundred thirty acre tolerance from a forty
4 acre subdivision? In other words, you could locate your
5 well anywhere within that forty acres three hundred thirty
6 feet from any subdivision line; is that correct?
7 A That was our intent, yes.
8 Q Yes?
9 MR. STEVENS: No further questions.
10 MR. UTZ: Other questions of the witness?
11 CROSS EXAMINATION
12 BY MR. UTZ:
13 Q Mr. Rial, looking at Set No. 3, it would indicate to me
14 that Tenneco is the owner of this pool. Is that a correct
15 assumption?
16 A We're probably the major owners of the pool. The pool
17 limits have not been defined, as yet. The exact size and
18 so forth is going to have to come about as subsequent
19 drilling. But right now I would say, yes, we will
20 probably own in excess of seventy-five percent of the
21 pool.
22 Q Well, now, you say your pool hasn't been defined. You
23 mean to the southwest?
24 A The pool has not been defined to the southwest and it
25 has not necessarily been defined to the northeast or to

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1 to the east. We show only a lower limit to define the oil
 2 down to or the limits of a proven production at this
 3 point. It could be much bigger and extend much farther.

4 Q In other words, you're saying that you feel that this
 5 productive down to your limits shown on Exhibit No. 3 and
 6 may extend further?

7 A Yes. The only -- I need to bring out one point here in
 8 clarification of the Lone Pine No. 1. This well, when
 9 we made these exhibits up -- we have just recently drilled
 10 it and are in the process of completing it. This well, to
 11 date, is not productive in the Dakota D reservoir, although
 12 we're structurally high. And so it may indicate that we
 13 have some separation or separations, but something unusual
 14 is happening in this south area or southeast area. We may
 15 also have mechanical problems with the well, but I think
 16 that it should be brought out at this point.

17 Q Referring to Exhibit No 8, is the blue square indicated
 18 the Santa Fe Pacific Railroad No. 3?

19 A Yes, it is. Which is located in the northeast of -- I
 20 mean -- excuse me. The northwest and northeast of Section
 21 24, 17 north and 9 west.

22 Q Now, was the pressure taken the first part of November to
 23 establish the pressure?

24 A Yes, it was.

25 Q And that reads, then, at a thousand and ten pounds?

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- 1 A Right. A thousand and ten pounds, yes, sir.
- 2 Q Now, this exhibit proports to show drainage. Now, what
- 3 would this late pressure as compared to your initial pressure
- 4 of a thousand and ten indicate to you?
- 5 A It indicates one of two things. Either that we're in an
- 6 area that has not been affected by drainage that we may
- 7 be moving into an area of, say, poor rock properties in
- 8 which transmissability of pressure and we haven't drawn it
- 9 down as much in this area as we have in the others. Most
- 10 of the other points here are what we consider as infilled
- 11 points. And they should logically have been expected to
- 12 be lower. This is more or less on the edge and had not
- 13 produced and therefore, we don't really know what the
- 14 reason is. It could be separated, it could be -- but more
- 15 likely, it's just probably an area of poor rock properties
- 16 and has not been affected by the pressure draw down for
- 17 this part of the reservoir.
- 18 Q So you might have a tight area or some other reservoir
- 19 condition there?
- 20 A Yes. It doesn't appear -- the rock does not appear to be
- 21 necessarily tight, though.
- 22 Q According to the logs?
- 23 A Right. It's difficult for us to tell, because we find
- 24 no direct comparison between porosity and permeability in
- 25 this area.

1 MR. UTZ: Do you have something?

2 MR. KENDRICK: In line with that, is this pressure of
3 the Number 5 pressure without production in the well?

4 THE WITNESS: Yes.

5 MR. KENDRICK: Right after completion at that time?

6 THE WITNESS: Right. We completed the -- swabbed it
7 back and kicked off and we ran a bottom low pressure.

8 MR. KENDRICK: Thank you.

9 Q (By Mr. Utz) Now, the blue circle is for your Don Ne Pah
10 No. 2 and the No. 6?

11 A That's right. We have -- we just got the pressure
12 information in yesterday, and we just added on the Don Ne
13 Pah No. 2 was 924 pounds and the Santa Fe Pacific Railroad
14 No. 6 was 920 pounds at this date.

15 Q Now, what date was that pressure?

16 A That pressure was taken -- let's see, it was taken this
17 weekend.

18 Q 11-14? Is that close enough?

19 A 13, Friday, 11-14, right.

20 Q Now, your discovery date on your No. 1 Don Ne Pah was what?
21 A It was 6-2, June the 6th -- June the 2nd, 1970.

22 Q How much production did you have between those two dates?

23 A The production between the two dates has been sixty-three
24 thousand -- about five hundred barrels.

25 Q Now, the pressure dropped -- it's been ninety pounds,

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1 according to your testimony; is that correct?

2 A Approximately ninety pounds, yes.

3 Q Okay. Now, are all these pressures shown on Exhibit 8

4 proported to be stabalized pressures?

5 A Yes, they are.

6 Q And how long --

7 A With -- yes. They are stabalized pressures. Some of the

8 build ups -- okay. They are all -- they all are in

9 excess of seventy-two hours, with the exception of the

10 initial pressure, which is the Don Ne Pah No. 1, which

11 was a drill stem test measurement pressure, and it was

12 shut in ninety-nine minutes. However, it did stabalize.

13 Q Now, it's your contention that there is a gas capping

14 field?

15 A Yes, there is.

16 Q Now, do you propose to complete any of these oils in the

17 gas cap?

18 A No, sir. We do not.

19 Q Not perforate it below the gas in all cases?

20 A In all cases. In the event that sometime down the road

21 we want to consider reinjection, we would probably reinject.

22 Possibly reinjection into the gas cap, we'd have to

23 perforate it then.

24 Q We reiterate your request here as far as the pool rules

25 are concerned. You're asking for eighty acres spacing

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1 credit for oversized units; is that correct?
2 A That's correct.
3 Q And flexible proration units north, south, east or west?
4 A Yes.

5 Q Proration factor of two?
6 A That's correct.

7 Q GOR two thousand to one?
8 A With provision for quarterly well tests.
9 Q Right.

10 A Okay. Yes, sir.
11 Q And a spacing within the proration unit of 330 feet from
12 a quarter to quarter section line?
13 A That's correct.

14 Q Did I miss anything?
15

16 MR. KENDRICK: In line with these proposed lots he
17 asked from the tract line instead of the forty acre line in
18 response to one of my questions where that twelve acre lot
19 would be added to a forty acre tract. He asked for 330 feet
20 from the tract line instead of forty acre line.

21 (By Mr. Utz) Do you know how wide these lots are?
22

23 MR. KENDRICK: They're about 300 feet.
24 They're about 300 feet, something like that.

25 Q So that would put them right almost on the quarter section
A line, wouldn't it?
Possibly.

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1 Q Is that an indication --

2 A This does not really present a problem unless it --
3 because all our wells that have been drilled at this
4 point have been drilled in the normal forty acre location.
5 And as I can see right now, we are the only ones that
6 would be affected. I see no real problem at this point.

7 Q I think I missed one stipulation that you made in regard
8 to the rules. You want fixed spacing northwest and
9 southeast?

10 A Yes, sir.

11 MR. UTZ: Other questions of the witness?

12 MR. STEVENS: If you do decide to reinject the gas
13 produced into the gas cap do you think that you would be
14 reinjecting all the gas produced in the field at that time?

15 THE WITNESS: This is one of the considerations that
16 we're now making on what to do with the gas and exactly how to
17 do it, which is most beneficial. I would imagine we -- that one
18 of the things we're considering are reinjecting not only produced
19 gas, but also reinjecting makeup gas from the field. And also
20 from the south Hospah.

21 MR. UTZ: Further questions?

22 MR. STEVENS: One more, if I might. In your opinion,
23 would eighty acre spacing be adequate for possible secondary
24 recovery in the future? For example, water floods. For
25 example, the spots. Would there be a considerable amount of

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1 oil left in the cusps on eighty acre spacing as opposed to
2 forty?

3 THE WITNESS: No. In our opinion -- and this is one
4 of the primary reasons that we're desiring of the eighty acres
5 and of the fixed spacing is that it's probably more desirable
6 for a secondary recovery. We find that the -- say the recovery,
7 percent recovery, for breakthrough is greater than of the --
8 the greater the distance between the wells. I think our overall
9 efficiency would be much improved with the wider spacing and,
10 yes, I think there's no problem as far as -- we feel that this
11 is the optimum spacing for a secondary or pressure maintenance
12 program at this time.

13 Q (By Mr. Utz) Do you have any data as to your producing
14 GOR pressure cap?

15 A Yes, we do. Actually, the field gas oil ratio as of
16 October was probably 2437 to one. Now, that's a total
17 with all the gas produced in the oil. The Don Ne Pah, the
18 current gas oil ratio average during the month of -- 5067
19 to one.

20 Q This is Don Ne Pah No. 1?

21 A Right.

22 Q 5067?

23 A Yes, sir. To one. The gigosa was 996 to one. The Santa
24 Fe Pacific Railroad was 2805 to one.

25 Q That's the No. 1?

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1 A Right. Santa Fe Pacific Railroad No. 1 and the Santa Fe
 2 Pacific Railroad No. 3 was 708 to one. And I have no
 3 other individual tests on the recent wells other --
 4 specific information other than they are in the 900 to
 5 one range. All the rest of the wells are less than a
 6 thousand to one, with the exception of No. 6, which we're
 7 presently completing and we have mechanical problems with
 8 it, and we're still really in the process of completing
 9 working it over.

10 Q Won't your No. 1 be a penalized well?

11 A It probably would be this month, yes.

12 Q Is that the highest month that you've already noted on it?

13 A Yes. We've seen the gradual increase since its completion.
 14 During the month of August it was 1112 to one. During
 15 the month of September it was 1608 to one. This is based
 16 on a very -- this is gross gas versus gross oil.

17 Q Thank you.

18 MR. UTZ: Other questions of the witness? You may be
 19 excused. Do we have further testimony?

20 MR. STEVENS: Mr. Examiner, I'd like to ask you a
 21 question. We'd like to get in the record the fact that one well
 22 was completed on a certain date. Should I call Mr. Williams and
 23 ask him to present that evidence? It's in your file, or would
 24 you like to send Commission Notice of it?

25 MR. UTZ: Well, tell us which well it is. We can

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1 take administrative notice of it.

2 MR. STEVENS: It's Tosoro No. 16, and it's Unit
3 C of Section 7 and it was completed November 25th, 1968 with
4 eighty-one barrels of oil plus eleven barrels of water per day
5 through perforation 2520 to 50 out of the Dakota formation.

6 MR. UTZ: Completed when, now?

7 MR. STEVENS: November 25, 1968.

8 MR. UTZ: What was the location again?

9 MR. STEVENS: It's C of Section 7.

10 MR. UTZ: 25 what?

11 MR. STEVENS: 2521 to 2538.

12 MR. UTZ: I believe I excused the witness, didn't I?
13 If I didn't, I do so now. No further testimony? I'll have
14 statements in this case, please. Do you have a statement?

15 MR. STEVENS: I'd like to make a statement.

16 MR. UTZ: Go right ahead.

17 MR. STEVENS: Mr. Examiner, I'm representing Alan
18 Antweil. Mr. Antweil has pointed out that Well No. 16 in
19 Section 7 was completed in 1968 as a producer in the Dakota.
20 Testimony of the witness was that it was the Dakota B. Other
21 pools in New Mexico, perhaps many of them, perhaps most of them
22 cover hundreds of feet of vertical section all commingled with
23 various pressures and minor pressure differences. We feel
24 this pool probably should be spaced the same way that the
25 discovery should be considered the same, and that these various

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1 sands come and go. We think also that there's evidence
 2 submitted that there's communication of the various A, B, C
 3 and D zones of the Dakota and as much as there's no proof that
 4 the fault is a sealing fault, plus this is some evidence that
 5 the faults northeast and southwest may be in contact sufficient
 6 to provide communication and, therefore, pressure interchange.
 7 Therefore, in this basis, this well No. 16 was completed by
 8 Tosoro in 1968. It, then, would be the discovery well for the
 9 Dakota formation, even though it might be different from the
 10 Dakota D, it's only a few feet, or a few dozen feet, separated
 11 from it vertically.

12 Mr. Antweil has no objection to eighty acre spacing
 13 as long as the usual Commission rule is in that additional
 14 wells can be drilled on the eighty, but there would be no
 15 increase in the allowable. Other than that the eighty acre
 16 spacing would be acceptable to him. But he does feel, however,
 17 that the discovery allowable for the field should be considered
 18 to be Well No. 16 of Tosoro since it was completed earlier in
 19 the Dakota formation.

20 Alan Antweil's interest in the field, he has bid for
 21 a lease in the southwest quarter of Section 18 from the Navajo
 22 Tribe and presumably will be issued that lease soon.

23 MR. UTZ: I've been looking for that name throughout
 24 the hearing. I just found it.

25 MR. STEVENS: That was your question, wasn't it?

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1 MR. UTZ: Are there other statements?

2 MR. BATEMAN: Mr. Commissioner, I believe that the
 3 testimony today strongly indicates that the fault of the sealing
 4 fault, there is no evidence of any commingling in the Dakota
 5 zones south of the fault. I do not believe that Well No. 16
 6 was completed into the D zone, which would put it in a category
 7 with Discovery Well in the D zone. There's also strong
 8 evidence of pressure communication and ability to effectively
 9 drain the eighty acres south of the fault. And with regard to
 10 the rigid well location that's requested by the applicant, I
 11 think it was well pointed out that the request that was made
 12 with the view toward conservation, particularly with the view
 13 toward secondary recovery in this particular situation and that
 14 all of the testimony warrants the Commission's granting the
 15 application on a temporary basis requested for a year. Nothing
 16 further.

17 MR. UTZ: Any other statements? The case will be
 18 taken under advisement. We'll reopen the case. There's a
 19 letter to be read in the record.

20 MR. HATCH: Telegram from Gulf Oil Corporation
 21 addressed to the Oil Conservation Commission, dated November the
 22 16th, 1970, regard Case No. 4457, Examiner Hearing November 18,
 23 1970. Gulf Oil Corporation is an offset operator of Tenneco's
 24 Don Ne Pah Well No. 1, Unit D Section 18, 17 south, 8 west,
 25 McKinley County, New Mexico. And we object to the proposed

1 field rule providing for fixed well locations. We recommend
2 that a well be located within 150 feet of the center of either
3 quarter section. I think that probably should be either
4 quarter quarter section. We do not object to the eighty acre
5 spacing provision on a temporary basis.

6 MR. UTZ: Is there a representative of Gulf Oil Company
7 here? The case will be taken under advisement again.

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I N D E X

WITNESS

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

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

9 *Linda Malone*
10 Court Reporter

21 I do hereby certify that the foregoing is
22 a complete record of the proceedings in
23 the hearing held on or about No. 4457
24 signed by me on *Sept 18* 1970.
25 *[Signature]* Examiner
New Mexico Oil Conservation Commission



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

P. O. BOX 2088 - SANTA FE

87501

March 2, 1971

GOVERNOR
BRUCE KING
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMJO
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

Re: Case No. 4457

Order No. R-4084-A

Applicant:

Tenneco Oil Company

Mr. Ken Bateman
White, Gilbert, Koch & Kelly
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

Dear Sir:

Enclosed herewith are two copies of the above-referenced
Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director *lp*

ALP/ir

Copy of order also sent to:

Hobbs OCC x
Artesia OCC _____
Aztec OCC x

Other Mr. C. J. Chuck Scheffing, P. O. Box 1200 - Shell Oil Company,
Farmington, New Mexico

Mr. William J. Cooley, Farmington, New Mexico
Mr. Richard S. Morris, Santa Fe, New Mexico
Mr. Don Stevens, Santa Fe, New Mexico



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
1000 RIO BRAZOS ROAD - AZTEC
87410

February 24, 1971

GOVERNOR
BRUCE KING
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

Operators of wells in the Lone Pine Dakota D Oil Pool
McKinley County, New Mexico

Gentlemen:

After hearing Case No. 4457 on February 23, 1971, the New Mexico Oil Conservation Commission announced that the following provisions will be included in the resultant order:

1. That the spacing in the Lone Pine Dakota D Oil Pool shall be a flexible 80 acre pattern where a well may be drilled on either quarter-quarter section of the proration unit or both, and
2. That a proration unit will receive only one allowable even if more than one well is completed on the tract.

Form C-102 may be submitted in duplicate to this office. The effective date will be set out in the printed order.

Consideration is being given to holding the allowable for all 80 acre tract to a 40 acre allowable until gas recycling for pressure maintenance will use the produced gas. The decision will be included in the printed order.

A supply of form C-102 is enclosed for your convenience.

If there are questions please contact us.

Yours very truly,

A. R. Kendrick
Engineer Dist #3

ARK/me

enclosure

Docket No. 4-71

DOCKET: REGULAR HEARING - WEDNESDAY - FEBRUARY 17, 1971

OIL CONSERVATION COMMISSION - 9 A.M. - MORGAN HALL, STATE LAND OFFICE BUILDING,
SANTA FE, NEW MEXICO

- ALLOWABLE: (1) Consideration of the oil allowable for March and April, 1971;
- (2) Consideration of the allowable production of gas for March, 1971, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico, for March, 1971.

CASE 4442 (De Novo):

Application of Texaco Inc. for an exception to Rule 505 of the Commission Rules and Regulations, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 505 of the Commission Rules and Regulations to permit the assignment of more than one single top unit allowable for the Vacuum-Abo Pool to two wells, the surface locations of which are in Unit E of Section 12, Township 18 South, Range 34 East, Lea County, New Mexico, as follows:

State "AE" Well No. 8 - 2310 feet from the
North line and 330 feet from the West line;

State "AE" Well No. 10 - 1980 feet from the
North line and 990 feet from the West line;

Said Well No. 10 is a relatively straight hole with all perforations confined entirely to said Unit E while said Well No. 8 is a crooked hole and would have perforations both in said Unit E of Section 12 and in Unit H of Section 11 of said Township and Range.

Upon application of Texaco Inc., this case will be heard DE NOVO under the provisions of Rule 1220.

In the alternative, applicant seeks an exception to Rule 104-C-I of the Commission Rules and Regulations to permit said Well No. 8 to have perforations outside the horizontal limits of the proration unit presently dedicated to said well.

CASE 4457:
(DE NOVO)

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. Applicant, in the above-styled cause, seeks the creation of a new pool for the production of oil from the "D" zone of the Dakota formation for its Don Ne Pah Well No. 1 located in Unit D of Section 18, Township 17 North, Range 8 West, McKinley County, New Mexico, and for the assignment of an oil discovery allowable to said well. Applicant further seeks the promulgation of special rules for said pool, including provisions for 80-acre spacing units with wells to be drilled in either the northwest or southeast quarter-quarter sections.

Upon the application of Tenneco Oil Company this case will be heard DE NOVO under the provisions of Rule 1220.

CASE 4498: Southeastern New Mexico nomenclature case calling for an order for the creation and extension of certain pools in Lea, Eddy and Roosevelt Counties, New Mexico.

(a) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Morrow production and designated as the North Antelope Sink-Morrow Gas Pool. The discovery well is the Midwest Oil Corporation Federal J No. 1 located in Unit M of Section 21, Township 18 South, Range 24 East, NMPM. Said pool would comprise:

TOWNSHIP 18 SOUTH, RANGE 24 EAST, NMPM
SECTION 21: W/2

(b) Create a new pool in Eddy County, New Mexico, classified as an oil pool for Lower Pennsylvanian production and designated as the Sand Dunes-Lower Pennsylvanian Pool. The discovery well is the Texas American Oil Corporation Todd 14 Federal No. 1 located in Unit K of Section 14, Township 23 South, Range 31 East, NMPM, with special vertical limits defined as being from 14,030 feet to 15,220 feet as in the discovery well. Said pool would comprise:

TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM
SECTION 14: W/2

(c) Extend the North Bagley-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 12 SOUTH, RANGE 33 EAST, NMPM
SECTION 8: NE/4

(d) Extend the Chaveroo-San Andres Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 7 SOUTH, RANGE 32 EAST, NMPM
SECTION 22: SE/4

(e) Extend the Eagle Creek-San Andres Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 25 EAST, NMPM
SECTION 22: SE/4
SECTION 27: NW/4 NE/4 and NE/4 NW/4

(f) Extend the Lea-Bone Springs Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 34 EAST, NMPM
SECTION 36: NW/4

(Case 4498 continued)

(g) Extend the South Prairie-Cisco Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 36 EAST, NMPM
SECTION 21: E/2

(h) Extend the Rock Tank-Lower Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 24 EAST, NMPM
SECTION 1: All

(i) Extend the West Sawyer-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 9 SOUTH, RANGE 37 EAST, NMPM
SECTION 28: N/2 and SW/4

(j) Extend the Scarborough Yates-Seven Rivers Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 26 SOUTH, RANGE 36 EAST, NMPM
SECTION 25: SE/4

CASE 4499: Northwestern New Mexico nomenclature case calling for an order for the creation and extension of certain pools in San Juan, McKinley and Rio Arriba Counties, New Mexico.

(a) Create a new pool in McKinley County, New Mexico, classified as an oil pool for Dakota production and designated as the Hospah Dakota Oil Pool. The discovery well is the Tenneco Oil Corporation Hospah Well No. 10 located in Unit 'C' of Section 12, Township 17 North, Range 9 West, NMPM. Said pool would comprise:

TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM
SECTION 7: NW/4

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM
SECTION 11: E/2 SE/4 and SE/4 NE/4
SECTION 12: N/2 & N/2 SW/4

(b) Create a new pool in Rio Arriba County, New Mexico, classified as an oil pool for Gallup-Dakota production and designated as the West Lindrith Gallup-Dakota Oil Pool. The discovery well is the Continental Oil Company Jicarilla 28 Well No. 1 located in Unit J of Section 28, Township 25 North, Range 4 West, NMPM. Said pool would comprise:

TOWNSHIP 25 NORTH, RANGE 4 WEST, NMPM
SECTION 15: W/2 SE/4
SECTION 21: SE/4
SECTION 22: W/2 & W/2 E/2

(Case 4499 (b) continued)

TOWNSHIP 25 NORTH, RANGE 4 WEST, NMPM

SECTION 27: W/2 & W/2 E/2
SECTION 28: E/2, SW/4, & E/2 NW/4
SECTION 32: N/2 SE/4
SECTION 33: N/2 & N/2 S/2
SECTION 34: NW/4, N/2 SW/4, W/2 NE/4
N/2 SE/4 and SE/4 SE/4

(c) Create a new pool in San Juan County, New Mexico, classified as a gas pool for Fruitland-Pictured Cliffs production and designated as the Harper Hill Fruitland Pictured Cliffs Pool. The discovery well is the Dugan Production Corporation Federal "I" Well No. 4 located in Unit C of Section 1, Township 29 North, Range 14 West, NMPM. Said pool would comprise:

TOWNSHIP 29 NORTH, RANGE 14 WEST, NMPM

SECTION 1: All

(d) Extend the Aztec-Pictured Cliffs Pool, San Juan County, New Mexico, to include therein:

TOWNSHIP 28 NORTH, RANGE 10 WEST, NMPM

SECTION 9: W/2 Partial

TOWNSHIP 29 NORTH, RANGE 9 WEST, NMPM

SECTION 19: All

TOWNSHIP 31 NORTH, RANGE 11 WEST, NMPM

SECTION 31: NW/4

TOWNSHIP 31 NORTH, RANGE 12 WEST, NMPM

SECTION 2: S/2
SECTION 11: E/2
SECTION 12: SW/4
SECTION 13: NW/4

(e) Extend the Blanco-Pictured Cliffs Pool in San Juan County, New Mexico, to include therein:

TOWNSHIP 30 NORTH, RANGE 9 WEST, NMPM

SECTION 7: SW/4
SECTION 14: NW/4
SECTION 18: W/2

TOWNSHIP 30 NORTH, RANGE 10 WEST, NMPM

SECTION 1: SE/4
SECTION 12: E/2

TOWNSHIP 31 NORTH, RANGE 11 WEST, NMPM

SECTION 7: NW/4
SECTION 13: W/2

(Case 4499 (e) continued)

TOWNSHIP 32 NORTH, RANGE 11 WEST, NMPM
SECTION 29: SW/4
SECTION 30: SE/4

(f) Extend the Lone Pine-Dakota "D" Oil Pool in McKinley County,
New Mexico, to include therein:

TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM
SECTION 8: SW/4 SW/4
SECTION 17: NW/4 NW/4

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM
SECTION 13: SE/4 NW/4



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

GOVERNOR
DAVID F. CARGO
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMijo
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

December 22, 1970

Mr. Ken Bateman
White, Gilbert, Koch & Kelly
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

Re: Case No. 4457
Order No. R-4084
Applicant:
TENNECO OIL COMPANY

Dear Sir:

DOCKET MAILED
Date 2-5-71

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC X

Artesia OCC

Aztec OCC X

Other Mr. Dick Morris, Mr. Don Stevens, Mr. M. I. Taylor

Gulf Oil Company - U.S.

EXPLORATION AND PRODUCTION DEPARTMENT
ROSWELL DISTRICT

Juan Chocin
DISTRICT MANAGER
M. I. Taylor
DISTRICT PRODUCTION
MANAGER
P. E. Wyche
DISTRICT EXPLORATION
MANAGER
H. A. Rankin
DISTRICT SERVICES MANAGER

P. O. Drawer 1938
Roswell, New Mexico 88201

January 25, 1971

Oil Conservation Commission
State of New Mexico
Post Office Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. A. L. Porter, Jr.

Re: Application of Tenneco Oil Company
for Hearing de novo, Case No. 4457
Order No. R-4084, Lone Pine - Dakota
"D" Pool, McKinley County, New Mexico

Gentlemen:

Gulf Oil Corporation, as an Operator in the subject pool, has been informed that Tenneco made application for a hearing de novo relative to Order No. R-4084, dated December 22, 1970, issued in Case No. 4457. We understand this is set for hearing on February 17, 1971.

Gulf objected to the fixed well locations in the original hearing and we still object to this provision. We have had an opportunity since the original hearing to review the reservoir data available and it is our opinion that the pool should be developed on 40 acre spacing.

Yours very truly,

GULF OIL CORPORATION

M. I. Taylor
M. I. Taylor

JHH:dch

cc: Tenneco Oil Company
Suite 1200 Lincoln Tower Building
Denver, Colorado 80203
Attention: Mr. C. W. Nance



A DIVISION OF GULF OIL CORPORATION

DOCKET MAILED

Date 2-5-71

DOCKET: REGULAR HEARING - WEDNESDAY - DECEMBER 16, 1970

OIL CONSERVATION COMMISSION - 9 A.M. - MORGAN HALL, STATE LAND OFFICE BUILDING,
SANTA FE, NEW MEXICO

- ALLOWABLE: (1) Consideration of the oil allowable for January and February, 1971;
- (2) Consideration of the allowable production of gas for January, 1971, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico, for January, 1971. Consideration of purchaser's nominations for the six-month period beginning February 1, 1971 for that area.

THE FOLLOWING CASES WILL BE HEARD BEFORE ELVIS A. UTZ, EXAMINER, OR DANIEL S. NUTTER, ALTERNATE EXAMINER, IN THE OIL CONSERVATION COMMISSION CONFERENCE ROOM ON THE SECOND FLOOR OF SAID BUILDING AT 9:30 A.M.

* * * * *

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. Applicant, in the above-styled cause, seeks the creation of a new pool for the production of oil from the "D" zone of the Dakota formation for its Don Ne Pah Well No. 1 located in Unit D of Section 18, Township 17 North, Range 8 West, McKinley County, New Mexico, and for the assignment of an oil discovery allowable to said well. Applicant further seeks the promulgation of special rules for said pool, including provisions for 80-acre spacing units with wells to be drilled in either the northwest or southeast quarter-quarter sections.

CASE 4473: Application of Mobil Oil Corporation for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Devonian formation in the open-hole interval from 12,226 feet to 12,541 feet in its Cosden-Oil Development Well No. 1 located in Unit C of Section 25, Township 9 South, Range 36 East, Crossroads Siluro-Devonian Pool, Lea County, New Mexico.

CASE 4474: Application of Amini Oil Corporation for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the rules governing the North Vacuum-Abo Pool to permit the completion of a well at an off-pattern unorthodox location 2120 feet from the North line and 520 feet from the West line of Section 12, Township 17 South, Range 34 East, Lea County, New Mexico. The S/2 NW/4 of said Section 12 to be dedicated to the well.

CASE 4475: Application of Texas American Oil Corporation for an exception to Order No. R-3221, as amended, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves and Roosevelt Counties, New Mexico. Applicant seeks an exception to the provisions of said order for wells completed in the Sand Dunes-Atoka Gas Pool and the Sand Dunes-Cherry Canyon Pool, Eddy County, New Mexico, to permit the disposal of water produced by said wells in unlined surface pits.

CASE 4476: Application of Hanagan Petroleum Corporation for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Catclaw Draw Unit Area comprising 6,720 acres, more or less, of Federal, State, and Fee lands in Sections 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35, and 36, Township 21 South, Range 25 East, Eddy County, New Mexico.

CASE 4472: Southeastern New Mexico nomenclature case calling for an order for the creation of certain new pools and the assignment of oil discovery allowable and the contraction and extension of certain other pools in Lea, Eddy, Chaves and Roosevelt Counties, New Mexico;

(a) Create a new pool in Roosevelt County, New Mexico, classified as an oil pool for Wolfcamp production and designated as the Todd-Wolfcamp Pool comprising the following:

TOWNSHIP 7 SOUTH, RANGE 35 EAST, NMPM
SECTION 22: NE/4 SE/4

Further, for the assignment of approximately 38,025 barrels of oil discovery allowable to the discovery well Texaco Inc.'s L.Harris Federal Well No. 1 located in Unit I of said Section 22.

(b) Create a new pool in Eddy County, New Mexico, classified as a gas pool for Bone Spring production and designated as the Black River-Bone Spring Gas Pool. The discovery well is the Pennzoil United, Inc. O'Neill Federal No. 1 located in Unit L of Section 11, Township 24 South, Range 26 East, NMPM. Said pool would comprise:

TOWNSHIP 24 SOUTH, RANGE 26 EAST, NMPM
SECTION 11: SW/4

- (c) Create a new pool in Eddy County, New Mexico, classified as an oil pool for Yeso production and designated as the Indian Basin-Yeso Pool. The discovery well is Marathon Oil Company's Indian Basin E No. 2 located in Unit K of Section 27, Township 21 South, Range 23 East, NMPM. Said pool would comprise:

TOWNSHIP 21 SOUTH, RANGE 23 EAST, NMPM
SECTION 27: NE/4 SW/4

- (d) Create a new pool in Lea County, New Mexico, classified as an oil pool for Permo Pennsylvanian production and designated as the East Morton Permo Pennsylvanian Pool. The discovery well is Samedan Oil Corporation's Gulf State No. 1 located in Unit A of Section 4, Township 15 South, Range 35 East, NMPM. Said pool would comprise:

TOWNSHIP 15 SOUTH, RANGE 35 EAST, NMPM
SECTION 4: NE/4

- (e) Contract the Square Lake Pool in Eddy County, New Mexico, by the deletion of the following described area:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM
SECTION 12: SE/4 SE/4
SECTION 13: N/2

- (f) Extend the Grayburg Jackson Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 29 EAST, NMPM
SECTION 12: SE/4 SE/4
SECTION 13: N/2

- (g) Extend the Atoka-Pennsylvanian Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 26 EAST, NMPM
SECTION 19: W/2

- (h) Extend the Buffalo Valley-Pennsylvanian Gas Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 15 SOUTH, RANGE 28 EAST, NMPM
SECTION 6: W/2

- (i) Extend the South Carlsbad-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 26 EAST, NMPM
SECTION 11: All

- (j) Extend the Chaveroo-San Andres Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 7 SOUTH, RANGE 32 EAST, NMPM
SECTION 23: SW/4

(k) Extend the Double L-Queen Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 29 EAST, NMPM
SECTION 25: SW/4 SE/4

(l) Extend the South McCormack-Silurian Pool In Lea County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
SECTION 21: NE/4

(m) Extend the South Prairie-Cisco Pool in Roosevelt County, New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 36 EAST, NMPM
SECTION 20: S/2 SW/4

(n) Extend the Northwest Vacuum-Wolfcamp Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 8: NW/4

Gulf Oil Company - U.S.

EXPLORATION AND PRODUCTION DEPARTMENT
ROSWELL DISTRICT

Juan Chacin
DISTRICT MANAGER
M. I. Taylor
DISTRICT PRODUCTION
MANAGER
P. E. Wyche
DISTRICT EXPLORATION
MANAGER
H. A. Rankin
DISTRICT SERVICES MANAGER

P. O. Drawer 1938
Roswell, New Mexico 88201

February 11, 1971

Oil Conservation Commission
State of New Mexico
Post Office Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. A. L. Porter, Jr.

Re: Case No. 4457
Scheduled for Hearing De Novo
February 17, 1971 - Lone Pine Field "D"
Pool, McKinley County, New Mexico

Gentlemen:

Reference is made to our letter dated January 25, 1971
objecting to certain portions of Tenneco Oil Company's application in
the subject Case.

Please be advised that Gulf Oil Corporation withdraws its
opposition to the 80-acre spacing, and we have no objections to this
spacing on a temporary basis.

Yours very truly,

GULF OIL CORPORATION

M. I. Taylor
M. I. Taylor

JHH:mrđ

cc: Tenneco Oil Company
Suite 1200 - Lincoln Tower Building
Denver, Colorado 80203



A DIVISION OF GULF OIL CORPORATION

Docket No. 25-70

DOCKET: REGULAR HEARING - WEDNESDAY - NOVEMBER 18, 1970

OIL CONSERVATION COMMISSION - 9 A.M. - MORGAN HALL, STATE LAND OFFICE BUILDING,
SANTA FE, NEW MEXICO

ALLOWABLE: Consideration of the allowable production of gas for December, 1970, from fifteen prorated pools in Lea, Eddy, Roosevelt and Chaves Counties, New Mexico, and also presentation of purchaser's nominations for said pools for the six-month period beginning January 1, 1971. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico, for December, 1970.

CASE 4453: In the matter of the hearing called by the Oil Conservation Commission on its own motion to consider the promulgation of an order prohibiting the flaring or venting of casinghead gas in the State of New Mexico on or after December 31, 1970, when certain conditions exist. Copies of the proposed order will be circulated by way of the Commission's general mailing list and will be available upon request made to the Commission at its Santa Fe office.

* * * * *

THE FOLLOWING CASES WILL BE HEARD BEFORE DANIEL S. NUTTER, EXAMINER, OR ELVIS A. UTZ, ALTERNATE EXAMINER, IN THE OIL CONSERVATION COMMISSION CONFERENCE ROOM ON THE SECOND FLOOR OF SAID BUILDING AT 9:30 A.M.

CASE 4454: Southeastern New Mexico nomenclature case calling for the extension of certain pools in Lea, Chaves and Roosevelt Counties, New Mexico.

(a) Extend the Baum-Upper Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 32 EAST, NMPM
SECTION 11: N/2 and SW/4

(b) Extend the Double L-Queen Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 30 EAST, NMPM
SECTION 31: SE/4

(c) Extend the Maljamar Grayburg-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM
SECTION 27: SE/4

(d) Extend the North Vacuum-Abo Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 14: NW/4
SECTION 27: NE/4

(e) Extend the Vada-Pennsylvanian Pool in Roosevelt County,

(Case 4454 continued)

New Mexico, to include therein:

TOWNSHIP 8 SOUTH, RANGE 35 EAST, NMPM
SECTION 33: NE/4

- CASE 4455: In the matter of the hearing called by the Oil Conservation Commission for the creation of a new oil pool and for the assignment of a discovery allowable, Sandoval County, New Mexico. The Commission, at the request of Refiners Petroleum Corporation, will consider the creation of a new oil pool for the production of oil from the Dakota formation comprising the NE/4 of Section 25, Township 22 North, Range 3 West, Sandoval County, New Mexico, said pool having been discovered by said corporation's Cuba Union Well No. 1 located in Unit A of said Section 25. Also to be considered will be the assignment of approximately 34,390 barrels of discovery allowable to said well.
- CASE 4456: Application of Pan American Petroleum Corporation for expansion of pressure maintenance project, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Cato Baskett Pressure Maintenance Project, Cato-San Andres Pool, by the conversion to water injection of its Baskett "D" Wells Nos. 1 and 2, located respectively, in Units G and A of Section 11, Township 8 South, Range 30 East, Chaves County, New Mexico.
- CASE 4457: 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. Applicant, in the above-styled cause, seeks the creation of a new pool for the production of oil from the "D" zone of the Dakota formation for its Don Ne Pah Well No. 1 located in Unit D of Section 18, Township 17 North, Range 8 West, McKinley County, New Mexico, and for the assignment of an oil discovery allowable to said well. Applicant further seeks the promulgation of special rules for said pool, including provisions for 80-acre spacing units with wells to be drilled in either the northwest or southeast quarter-quarter sections.
- CASE 4458: Application of Continental Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the South Eunice Unit Area comprising 2720 acres, more or less, of Federal and Fee lands in Sections 20, 21, 22, 28, 29, and 33, Township 22 South, Range 36 East, South Eunice Pool, Lea County, New Mexico.
- CASE 4459: Application of Continental Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its South Eunice Unit Area by the injection of water into the Seven Rivers and Queen formations through 30 wells located in Sections 20, 21, 22, 28, 29, and 33, Township 22 South, Range 36 East, South Eunice Pool, Lea County, New Mexico.
- CASE 4460: Application of Continental Oil Company for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause,

(Case 4460 continued)

seeks the consolidation of two existing non-standard gas proration units into one 480-acre non-standard unit comprising the N/2 and SE/4 of Section 23, Township 22 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico, to be dedicated to its Meyer B-23 Wells Nos. 1, 2, and 3, located in Units C, O, and E, respectively, of said Section 23. Applicant further seeks authority to produce the allowable from any of said wells in any proportion.

CASE 4461: Application of Continental Oil Company for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the consolidation of two existing non-standard gas proration units into one 120-acre non-standard unit comprising the E/2 SW/4 and NW/4 SE/4 of Section 9, Township 21 South, Range 37 East, Blinebry Gas Pool, Lea County, New Mexico, to be dedicated to its Hawk B-1 Wells Nos. 2 and 6, located in Units J and N, respectively, of said Section 9. Applicant further seeks authority to produce the allowable assigned to said unit from either of said wells in any proportion.

CASE 4462: Application of Continental Oil Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from an undesignated Gallup oil pool and undesignated Dakota oil pool in the wellbores of four wells to be drilled in Township 25 North, Range 4 West, West Lindrith Field, Rio Arriba County, New Mexico, as follows:

Jicarilla 22 Well No. 5 - Unit L - Section 22
Jicarilla 28 Well No. 9 - Unit A - Section 28
Jicarilla 28 Well No. 10 - Unit L - Section 28
Jicarilla 28 Well No. 11 - Unit B - Section 33

CASE 4463: Application of Roger C. Hanks for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pennsylvanian formation underlying the NE/4 of Section 18, Township 9 South, Range 36 East, Vada-Pennsylvanian Pool, Lea County, New Mexico, said acreage to be dedicated to applicant's Ford Federal Well No. 1 located in the NW/4 NE/4 of said Section 18. Also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4451: (Readvertised)

Application of Union Oil Company of California for a non-standard oil proration unit, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval for an 80-acre non-standard oil proration unit comprising the SW/4 SE/4 of Section 17 and the NW/4 NE/4 of Section 20, Township 9 South, Range 38 East, Bluit-San Andres Associated Pool, Roosevelt County, New Mexico, to be dedicated to a well to be drilled at a standard location in the NW/4 NE/4 of said Section 20.

Examiner Hearing
November 18, 1970

Docket No. 25-70

-4-

CASE 4464: Application of Pan American Petroleum Corporation for authority to over-produce a gas well's allowable, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to over-produce the allowable of its Gallegos Canyon Unit Well No. 185, located in Unit D of Section 33, Township 28 North, Range 12 West, Basin-Dakota Pool, San Juan County, New Mexico, in the amount of 19,311 MCF. According to applicant, this amount of gas, produced by other wells in the Gallegos Canyon Unit and with royalty and taxes already paid, was injected into the subject well to create a reservoir back-pressure prior to fracturing on work-over. Applicant seeks authority to produce, without being subject to allowable, royalty, or taxes, the volume of gas injected into the well.

Gil Oil and Gas Company

GILCO

152 PETROLEUM CENTER BUILDING, FARMINGTON, NEW MEXICO 87401

TELEPHONE: 505/325-1702

July 19, 1971

Mr. C. W. Nance.
TENNECO OIL COMPANY
Suite 1200 Lincoln Tower Bldg.
Denver, Colorado 80201

Dear Wayne:

Following through on our recent meeting in Denver concerning a plan of unitization for the Lone Pine field, McKinley County, New Mexico, this is to advise you that after deliberation and consultation with Alan Antweil, we are unable at this time to commit to this proposed plan of unitization of said field.

Our decision not to commit to the proposed plan of unitization is based upon the inequitable treatment afforded the Bah-e Lease by your proposed plan. Specifically, if the production parameter is to be the sole criterion for allocation during the "primary production" phase as proposed by you, then we object to establishment of a production parameter based upon 100 barrels per well per day producing potential, since your declared objective is to produce the unit at a rate of 4400 barrels per day, or 200 barrels per well per day. If Tenneco and the other operators in the pool are willing to conduct witnessed 24 hour tests on each well in the pool to determine its ability to produce 200 barrels per day, we would be happy to join the unit and accept the production parameter allocation based upon such tests.

We feel that the foregoing proposal is no more than fair since the wells located on the Bah-e Lease are two of the better wells in the field and capable of producing substantially in excess of 200 barrels per well per day, while I am sure you will admit that there are other wells in the field which are not capable of producing 200 barrels per day. Thus, to approve an allocation of production to the Bah-e Lease based upon a production parameter of 100 barrels per day would obviously result in an inequitable allocation to the Bah-e Lease and a violation of the correlative rights of both the operator and the royalty owners.

Unless you exceed to the foregoing request, we will have no alternative but to refuse to join the unit plan as proposed by you and to take our case to the United States Geological Survey and the New Mexico Oil Conservation Commission.

Very truly yours,

GIL OIL & GAS COMPANY

By

Gilbert S. Maxwell

GSM:jjh

cc: Mr. N. Orvis Frederick
United States Geological Survey
P. O. Box 1857
Roswell, New Mexico

cc: Mr. A. L. Porter ✓
New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

cc: Mr. Alan Antweil
P. O. Box 2010
Hobbs, New Mexico 88240

cc: Beard Oil Company
Suite 200, 2000 Classen Bldg.
2000 Classen Blvd.
Oklahoma City, Oklahoma 73106

cc: Tesoro Petroleum Corporation
8520 Crownhill
San Antonio, Texas 78209

LAW OFFICES
McDERMOTT, CONNELLY & STEVENS

W. H. McDERMOTT
HARRY S. CONNELLY, JR.
DONALD G. STEVENS

P. O. BOX 1904
LINCOLN BUILDING
101 WEST MARCY
SANTA FE, NEW MEXICO 87501
TELEPHONE 505 983-7301

April 2, 1971

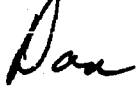
Mrs. Ida Rodriguez
New Mexico Oil Conservation Commission
State Land Office
Santa Fe, New Mexico 87501

Dear Ida:

Enclosed is the South Hospah Field Dakota Structure
Map, Exhibit No. 3, Case 4457.

I certainly appreciate your fantastic service in
letting us reproduce this.

Yours very truly,


Donald G. Stevens

DGS:sj

Enclosure



Telegram

KA024 SSC138

(1048)

K RWA011 HO PDB=ROSWELL NMEX 16 1045AMST=

OIL CONSERVATION COMMISSION=

1970 NOV 16 AM 10 57

STATE LAND OFFICE BLDG POST OFFICE BOX 2088

SANTA FE NMEX=

ATTENTION: A. L. PORTER, JR.

RE REGARD CASE NO. 4457. EXAMINER HEARING. NOVEMBER

18, 1970. GULF OIL CORPORATION IS AN OFFSET OPERATION TO
TENNECO'S DON NE PAH WELL NO. 1, UNIT D, SECTION 18-17S-8W.

MCKINLEY COUNTY, NEW MEXICO, AND WE OBJECT TO THE PROPOSED
FIELD RULES PROVIDING FOR FIXED WELL LOCATIONS. WE

RECOMMEND THAT A WELL BE LOCATED WITHIN 150 FEET OF THE
CENTER OF EITHER QUARTER SECTION. WE DO NOT OBJECT TO
THE 80 ACRE SPACING PROVISIONS ON A TEMPORARY BASIS=

GULF OIL CORP. M I TAYLOR==

COMPLETION DATA

DAKOTA "D" ZONE
MCKINLEY COUNTY, NEW MEXICO

	Tenneco Don-ne-pah #1 NW NW Sec. 18 T17N-R8W	Tesoro S.F. #17 SE NW Sec. 7 T17N-R8W	Tenneco Hospah #10 NE NW Sec. 12 T17N-R9W	Tenneco Hospah #23 NE SW Sec. 12 T17N-R9W
Completion Date	6-2-70	7-2-69	8-20-69	7-7-67
Top of Perf. (subsea)	+4235	+4344	+4392	+4356
Initial Potential:				
Oil, B/D	144	--	--	--
Water, B/D	-0-	NA	--	-0-
Gas, MCF/D	700	792	384	2904
GOR	4850	--	--	--
Oil Gravity, °API	54	--	--	--
BHP, psig	1010	NA	NA	NA
Average Porosity, %	20.5	18.1	18	21

*Please do not send
these exhibits as there
is only one set.*

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Applicants <u>UTZ</u> <u>6</u>
Case No. <u>4457</u>

RESERVOIR DATA
DAKOTA "D" ZONE
LONE PINE FIELD
MCKINLEY CO., N. M.

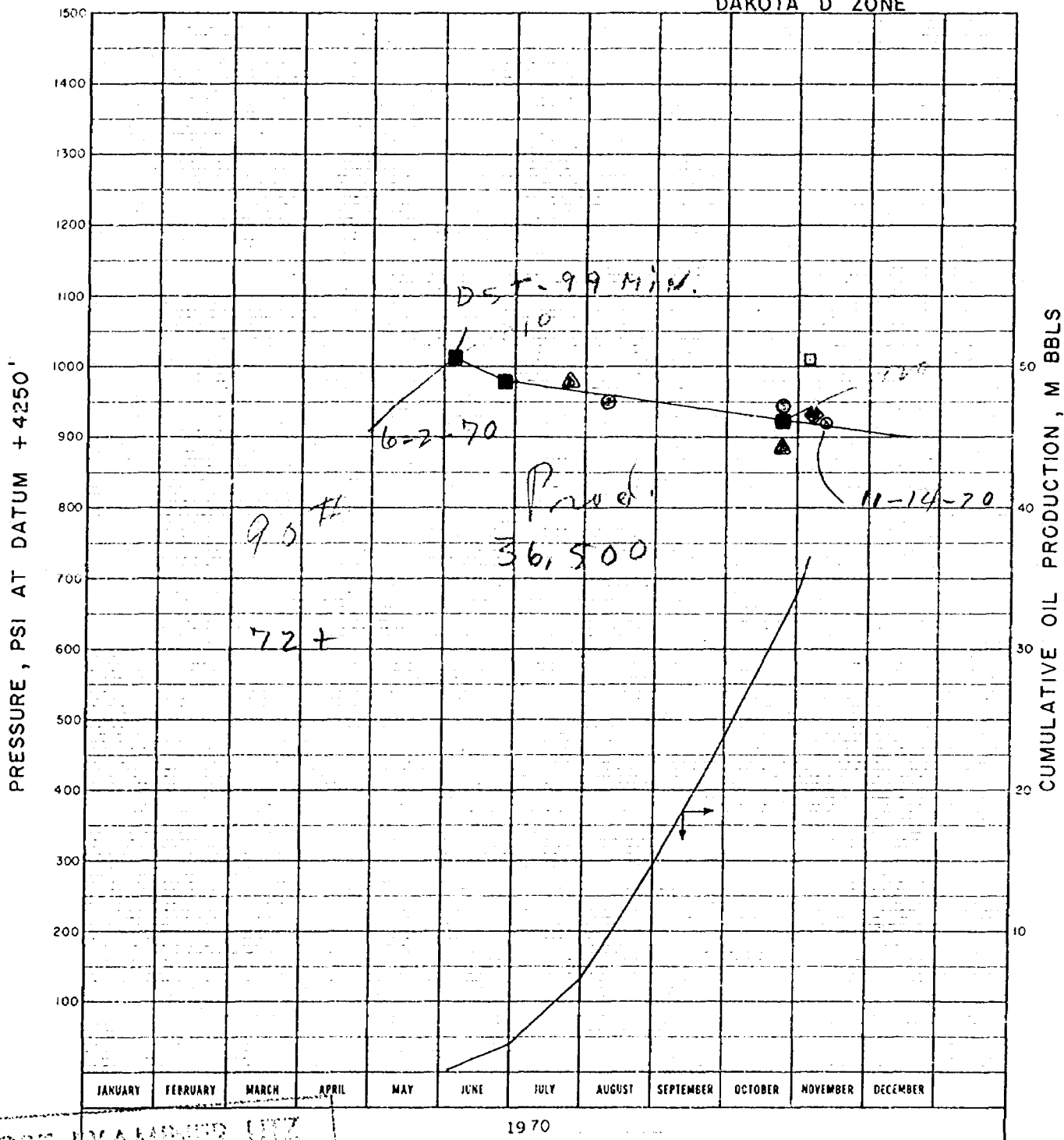
Porosity, %	20.4
Water Saturation, %	35
Permeability to reservoir fluid, md	30 to 50
Reservoir temperature, °F	108
Original Reservoir pressure, psig	1010
Oil gravity, °API	54
Solution Gas-Oil Ratio, SCF/bbl	970
Avg. thickness, ft.	12

BEFORE EXAMINER UTZ	
OIL CONSERVATION COMMISSION	
Applicants	EXHIBIT NO. <u>7</u>
CASE NO.	<u>4457</u>

TENNECO OIL COMPANY
DENVER, COLORADO

LONE PINE FIELD
MC KINLEY CO., NEW MEXICO

PRESSURE - PRODUCTION HISTORY
DAKOTA "D" ZONE



1 YEAR BY MONTHS 46 3093
X 150 DIVISIONS
MADE IN U.S.A.
KEUFFEL & ESSER CO.

BEFORE EXAMINED UTZ
Oil of ...
Applicants ... 8
... 4457

- SERRR #3
- DON NE PAH #1
- S.F.P.R.R. #1
- △ KAGOSA #1
- ◆ S.F.P.R.R. #5
- Don ne - job #2 & SERRR #6

ADDITIONAL EQUIPMENT AND LABOR REQUIRED TO
COMPLETE WITH PACKER BETWEEN GALLUP AND DAKOTA FORMATIONS
WEST LINDRITH FIELD

Equipment

HRP-1 Packer	\$ 7820.00
2 - MMA Mandrels	X890.00
2 - RA Latches	X150.00
2 - RD Dummies	X120.00
1 - RG1 Valve <i>Bottom Round No. 10</i>	X175.00
1 - R-25 Valve <i>worked on</i>	X250.00
1 - R-20 Valve	250.00
Total	\$2,655.00

Labor

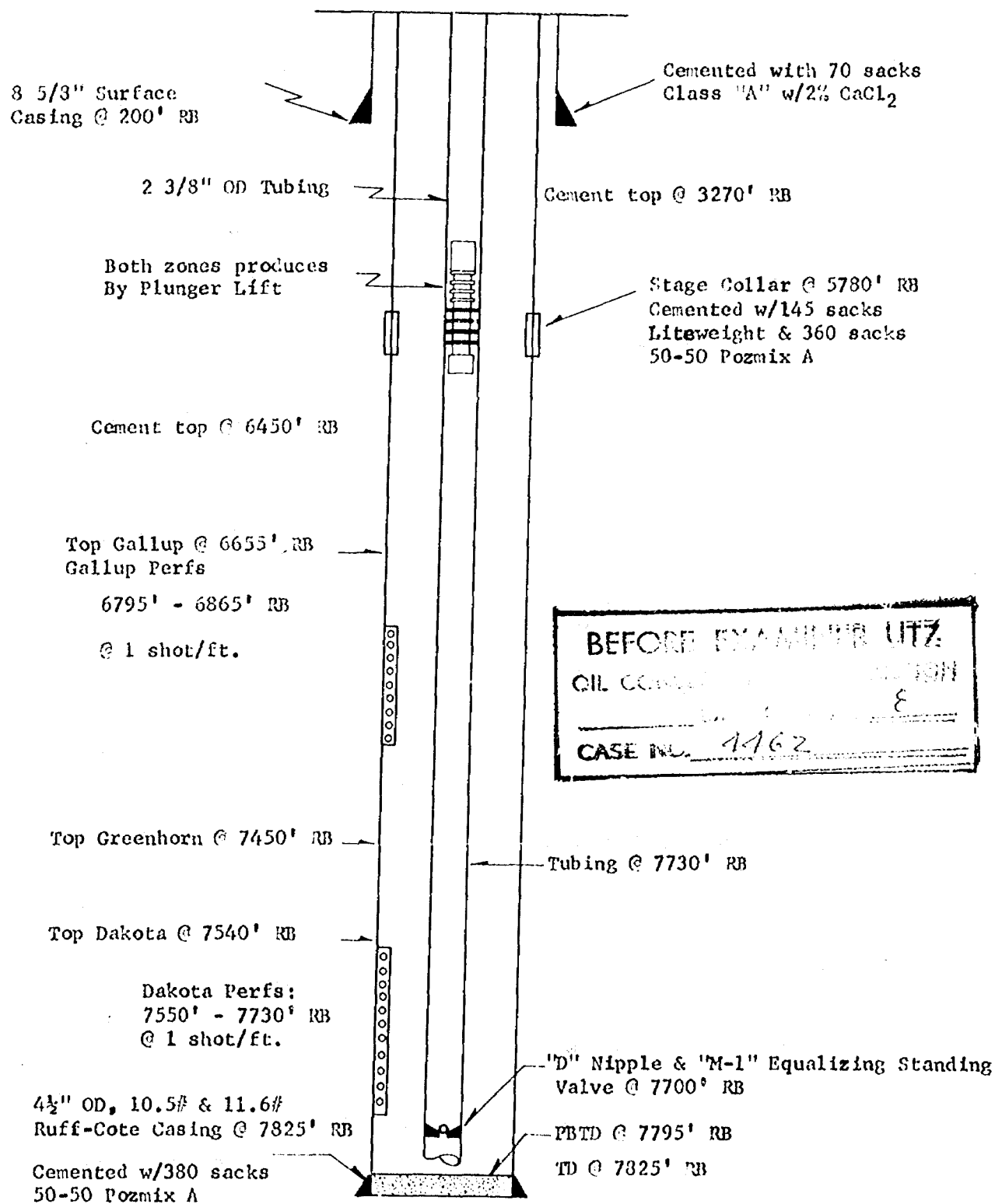
1. Furnish labor & equipment to set blanking plug to set packer & run circulating sleeve	275.00
2. Remove & replace circulating sleeve with dummy to run packer leakage test	✓ 274.00 X
3. Run P.S.I. std. valve - remove dummies & run R-25 and R-20 valves after packer leakage test	296.00 ✓
Total	\$845.00

Grand Total **\$3,500.00**

550⁰⁰ *[Signature]*

BEFORE EXAMINER UTZ OIL COMMISSION _____ 10 _____ CASE NO. <u>4462</u>
--

PROPOSED
DOWNHOLE COMMINGLING INSTALLATION
(all depths estimated)



BEFORE EXAMINATION
OIL COMPANY
CASE NO. 1462

Centralizers Located 10' and 60' above casing.
Setting depth and 90' thereafter to 6600' RB
Also one centralizer 30' above and 30' below stage collar.

CONTINENTAL OIL COMPANY
PRODUCTION DEPARTMENT
Casper, Wyoming



WEST LINDRITH
EXHIBIT "A"

Proposed Downhole Commingling Installation - Jicarilla 22-5

County: Rio Arriba

State: New Mexico

Engineer: J.A. Mozzo

Draftsman: B.S.

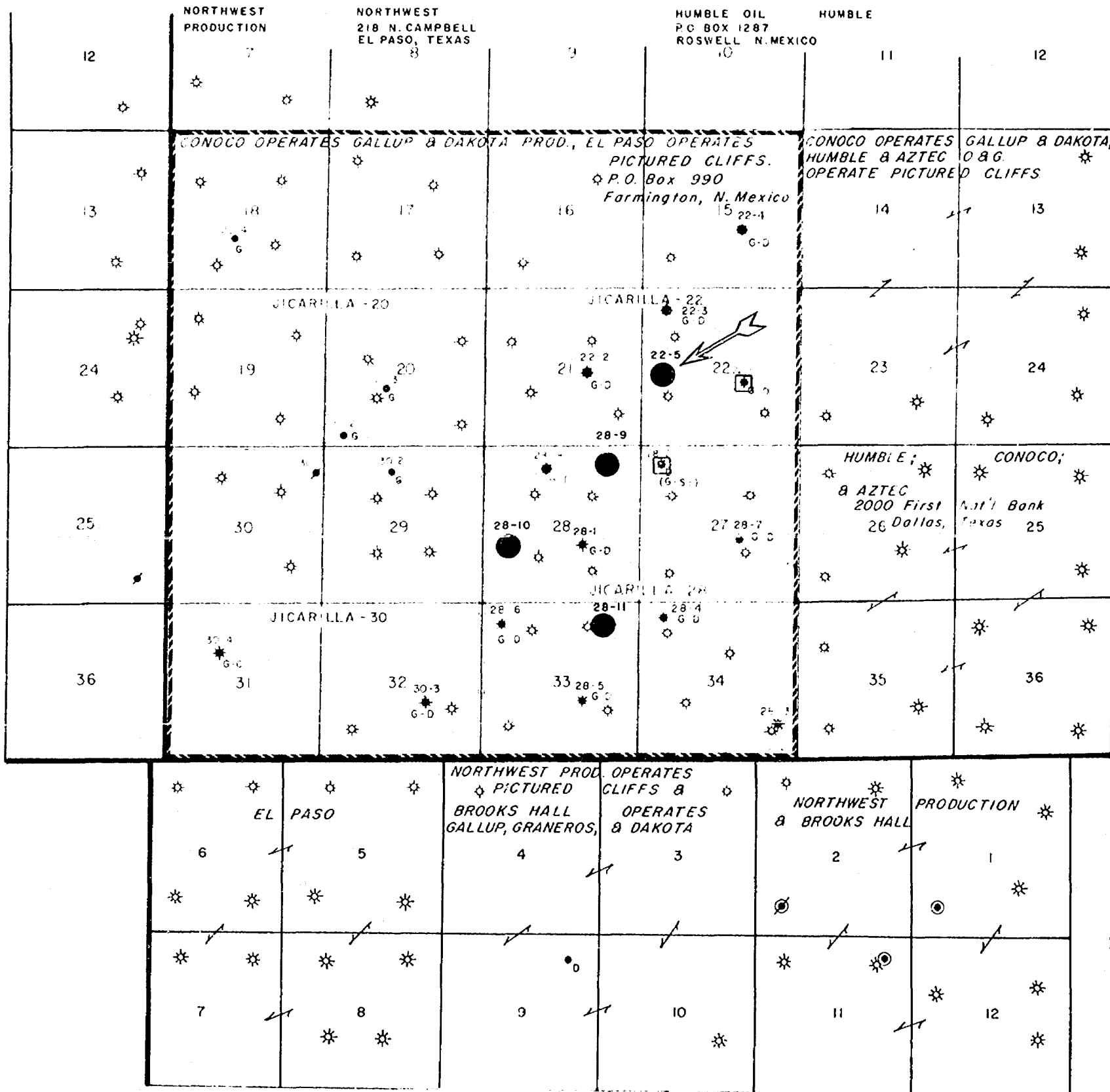
Date: 8-24-70

Scale: No Scale

Well Status Posted to:

BEFORE THE HONORABLE UTZ
OIL COURT, EL PASO DIVISION
EXHIBIT NO. 12
CASE NO. 1462

R. 4 W.



- LEGEND -

- GALLUP PRODUCING WELL
- DAKOTA PRODUCING WELL
- * GALLUP (Oil) - CHACRA (Gas) - JAL
- * GALLUP (Oil) - DAKOTA (Oil) - DUAL
- * GAS PRODUCING WELL (PICTURED CLIFFS)
- ✂ SHUT-IN WELL
- ⊙ DUAL GALLUP - GRANEROS
- ⊠ GALLUP (Oil) - DAKOTA (Oil) - Separate Strings of Casing.

WEST LINDRITH BLOCK
JICARILLA APACHE LEASES
Rio Arriba County, New Mexico

EXHIBIT "2" &

Engineer J.A. Muzza Drawn by N.E.C. 12-12-67
PRODUCTION DEPARTMENT 1-69
CONTINENTAL OIL COMPANY 8-70

DEPARTMENT	Production	REG./DIV.	Casper	AFE NO.	12-61-1656
Type: (1) 1. D & E 2. Misc. 3. D & T	Field or Block				
Group: (1) 1. Dev. 2. Maint. 3. Expl. 4. Inv.	West Lindrith				
(O) O. Onshore 1. Offshore Div. Code	12	TD and Obj.			
Date Appr.	Lease Code	7155214	Horizon(s) 7825' Dual Gallup - Dakota		
Project Title (Limit 30 Spaces)			Land Lease No.		
D&E Jicarilla 22 No. 5			Oil Pmt. Name No.		
Conoco Int. Ex Oil 1.0000000 In Oil			Date Completed		

(1) Location, Geological Province (2) Division of Int. (3) Justification

1) NW SW Section 22, T25N, R4W, Rio Arriba County, New Mexico
G.P. San Juan Basin

2) Conoco - 1.0000000

3) Refer to Sensitivity Analysis - Proposed West Lindrith Development, Rio Arriba County, New Mexico (File No. PET-941.34-CF October 5, 1970).

BEFORE EXAMINER UTZ

OIL COMMISSION

CASE NO. 4462

EXHIBIT 3

Description	Acct. No.	Mtl. & Depr. Intangibles Gross \$	Acct. No.	Expense Intangibles Gross \$	(Use Only For Expl. or Limited Expl. Wells)
Second Hand Equipment — Warehouse	8			X X X X X X X X	Block Number
Material Purchased — Dr.	9	28,200		X X X X X X X X	Gross Ac. Net Ac.
Total Material		28,200		X X X X X X X X	
Fuel, Water, Lubricants, Electricity	103		403	2,500	Budget Project No. Hdqts. 1
Location Damages, Roads — Bridges	107		407	2,500	Remaining Balance
Salvage & Dismantling Costs	108		408		(Before This AFE)
Drilling Contract — Footage	111		411	35,200	Net Recovery
Drilling Contract — Daywork	112		412	6,200	Net Profit
Drilling Bits & Reamers		X X X X X X X X	413		Rate of Payout
Fishing Tool Expense		X X X X X X X X	414		Return Period
Directional Drilling Costs		X X X X X X X X	415		Cash and Warehouse Outlay
Mud Materials, Chemicals, & Services		X X X X X X X X	416	5,500	Gross Cost 126,200
Cement & Cementing Service		X X X X X X X X	417	5,000	Conoco Net 126,200
Noncontrollable Materials	118	500	418	2,500	Approvals: Date
Tender Costs and Rentals		X X X X X X X X	419		Div:
Boatel Service	120		420		Land: John E. Norman 12/1/70
Special Drilling Tool Rental		X X X X X X X X	421	1,000	Geol: J. E. Norman 12/1/70
Coring Costs	125		425		Hdqts:
Drill Stem Tests		X X X X X X X X	426		Final Approval
Perforating		X X X X X X X X	427	2,700	Distribution:
Acidizing, Fracturing, Shooting		X X X X X X X X	428	22,600	RAB RLA CES MPL TWS JAB
Well Surveys, Electrical & Mud Logging		X X X X X X X X	429	1,500	WCB(3) DLB KWM(2) CAN RJE
Transportation	131	500	431	2,000	BEA(2)
Boats, Barges, Tugs — Cost — Rental	132		432		
Helicopters, Planes — Cost — Rental		X X X X X X X X	433		
Overhead — Partner Operated	136		436		
District Expense		X X X X X X X X	437	400	
Company Labor & Supervision	138	200	438	800	
Contract Labor	139	4,000	439	1,000	
Platforms — Fabrication & Installation	141		441		
Platform Maintenance	142		442		
Keyways — Well Structures		X X X X X X X X	443		
Sales Tax (Controllable Material)		X X X X X X X X	444	900	
Miscellaneous Costs	145		445	500	
Subtotal — Intangibles		5,200		92,800	
Dry or Bottom Hole Contributions Rec.		X X X X X X X X	448		
Total Intangibles		5,200		92,800	
Total Cash & Warehouse Outlay		33,400		92,800	
Material on Hand	1			X X X X X X X X	
Grand Total		33,400		92,800	
Grand Total — Mtl. & Depr. Intangibles and Expense Intangibles				126,200	AFE No. 12-61-1656

~~SECRET~~
~~EX-107-4~~

DRILLING MEMORANDUM

JICARILLA 22 WELL NO. 5
RIO ARriba COUNTY, NEW MEXICO

Location: C NW SW Section 22, T25N, R4W,
Rio Arriba County, New Mexico

Interest: Conoco - 100% W.I.

Elevation: 6990' GL (estimated)

Objectives: Dual complete in Gallup and Dakota.

Total Depth: 7825'

Estimated Tops:

BEFORE EXAMINER UTZ	
OIL COMPANY	8
CASE NO.	4467

Pictured Cliffs Sand	3372'
Lewis Shale	3404'
Chacra Sand	4209'
Mesaverde Sand	5006'
Mancos Shale	5679'
Gallup Sand	6656'
Greenhorn Lime	7449'
Graneros Shale	7519'
Dakota Sand	7539'
T.D.	7825'

Drilling Fluid:

Drill surface hole with water. Drill out from surface with water-gel low solids system to T.D. Do not exceed mud weight of 9.0 #/gal. Maintain water loss between 6-8 cc's and viscosity approximately 40 cp. Add lost circulation material if needed in the Gallup or Mesaverde sections. (Final mud program will be submitted before initiation of well.)

Casing:

<u>Surface</u>	200' - 8 5/8" OD, 24#, J-55, ST&C
<u>Production</u>	100' - 4 1/2" OD, 10.5#, JE-55, BTRC
	7600' - 4 1/2" OD, 10.5#, JE-55, ST&C
	125' - 4 1/2" OD, 11.6#, JE-55, ST&C

Casing opposite Gallup and Dakota zones to be "RUFF-COTED" (approximately 250' each zone). "RUFF-COTE" should be applied in the shop at temperatures no lower than 65° F. If "RUFF-COTING" is applied on location, ambient temperature should be in excess of 65° F. for a setting time of 8-12 hours.

Copies to: WCB KMM(3) BEA RET RJE LKR File

Casing: (Continued)

Float equipment to consist of a guide shoe and Baker Model "G" No. 109-11 differential fill collar or equivalent located 1 joint above guide shoe. Centralizers to be located 10' and 60' above guide shoe and at 90' intervals thereafter. Scratchers will be required as indicated by Drilling Foreman.

Stage collar and cement basket to be set at approximately 5780 or 100' below Mancos top.

Hole Size: Surface hole to be 12 1/4" to approximately 200'.
Remainder to consist of 7 7/8" hole to T.D.

Cement: Surface Pipe

Cement to surface with neat Class "A" containing 2% CaCl₂ (70 sacks required for gauged hole).

Slurry Weight	= 15.6 #/gal.
Yield	= 1.18 ft. ³ /sack
Pipe Capacity	= 0.3576 ft. ³ /ft.
Annular Capacity	= 0.4127 ft. ³ /ft.
Compressive Strength	= 555 psi @ 12 Hours and 60° F.

Production String (Cement in 2 stages)

STAGE 1:

Precede 1st stage with 500 gal. mud flush. Cement with 380 sacks 50-50 Poz. A, containing 2% gel, 6 1/4 #/sack Gilsonite, and 1/2% CFR-2 (volume calculated assuming gauged hole + 60% excess to bring cement top 200' above Gallup).

Slurry Weight	= 13.97 #/gal.
Slurry Yield	= 1.32 ft. ³ /sack

Minimum rate for annular turbulence = 3.7 BPM (use 5-8 BPM).

Compressive Strength	= 24 Hours, 1309 psi 48 Hours, 3015 psi
Water Ratio	= 5.53 gal./sack

Cement: (Continued)

STAGE 2:

Precede 2nd stage with Halco Liteflush.

Cement out of stage collar with 145 sacks Halliburton
Liteweight cement containing 1/2% CFR-2.

Liteweight

Slurry Weight = 12.7 #/gal.
Slurry Yield = 1.840 ft.³/sack

Minimum rate for annular turbulence = 1.7 BPM (use 5-8
BPM).

Compressive Strength = 24 Hours, 415 psi
48 Hours, 771 psi

Follow lead slurry with 360 sacks 50-50 Poz. A, 2% gel,
6 1/4 #/sack Gilsonite, 1/2% CFR-2 (volumes calculated
for gauged hole with 30% excess to bring cement top
100' above Pictured Cliffs).

Hole Caliper logs will be run over productive intervals.

Volumes will be re-calculated based on actual gauge.

Hole Deviation Requirements:

Well Depth Feet	Max. Distance Between Surveys Feet	Max. Dev. From Vert. Degrees	Max. Allowable Change Of * Angle Between Any Two Surveys Degrees
0-5000	400	5	1 1/2
5000-7000	100	6	1 1/2
7000-T.D.	100	8	2

- * (a) Reduce proportionately for survey intervals less than 100 feet,
but do not use intervals shorter than 30 feet.
- (b) If these limits are exceeded and the distance is more than 100
feet, contractor shall take immediate surveys no more than 100
feet apart. If such immediate surveys show that above limits
for any interval have been exceeded, contractor shall correct
hole deviation to within limits of above specifications.

DRILLING MEMORANDUM
JICARILLA 22 WELL NO. 5

October 14, 1970
Page Four

Special Services:

Geolograph.

Sampling:

Collect samples at 30' intervals from 3000' to 6200' and every 10' interval from 6200' to T.D. Samples to be taken to Four Corners Sample Cut Company, in Farmington, New Mexico.

Logging: Run FDC-Gamma Ray-Caliper over Chacra, Mesaverde, Gallup and Dakota.

Tests: No cores or DST's.

Remarks: It is very important to keep a constant surveillance of the mud system and maintain mud weights between 8.7 - 9.0 #/gal. throughout the drilling operation, as the Gallup zone can cause severe lost circulation problems. Lost circulation was experienced while drilling 30-4 in Section 31. In addition, because of the natural fractured system in the Gallup, care should be taken to eliminate any surging while running drill pipe and casing.

Drilling Procedure:

1. Drill 12 1/4" hole to approximately 200'.
2. Run 8 5/8" surface casing and cement to surface.
3. WOC 12 hours and nipple up.
4. Drill 7 7/8" hole with water-gel low solids mud as directed.
5. Run log as directed.
6. Run 4 1/2" OD casing with stage collar 100' below Mancos top. Cement 1st stage and slack off 6000-8000# on casing after bumping plug. Open ports on stage collar, break circulation immediately, and circulate mud for 4 hours. Run 2nd stage cement operation as directed.
7. Move off rotary rig and move in completion unit.

DRILLING MEMORANDUM
JICARILLA 22 WELL NO. 5

October 14, 1970
Page Five

8. WOC 18 hours.
9. Run temperature survey to locate cement top.

pce

Prepared by: J. A. Mazza, Production Engineer

APPROVED:

Supervising Production Engineer

Division Drilling Superintendent

Division Manager

P&A PROCEDURE

In the event the subject well is abandoned, it will be necessary to contact the New Mexico Oil Conservation Commission for verbal approval of the work. The people who should be contacted in order of preference, are as follows:

During Working Hours:

NMOCC (Aztec)	505-334-6178
USGS (Durango)	303-247-5144

After Working Hours:

NMOCC	Emery Arnold	505-334-6987
	Al Kendrick	505-325-8300
USGS	Jerry Long	303-247-0028
	Ed Schmidt	303-247-9918

1. After logging and testing, go in hole open-ended and spot plug from top of Dakota to 100' above Dakota top.
2. Pull up and spot 100' plug to Gallup top.
3. Pull up and spot 100' plug across Chacra.
4. Pull up and spot 100' plug across Pictured Cliffs.
5. Pull up and spot plug across Ojo Alamo.
6. Pull up and set plug 50' in and 50' out of 8 5/8".
7. Set 25' plug in surface 8 5/8". Set 10' length of 4" pipe in the surface plug so that 4' of it projects above ground level. The top of the 4' should be capped and a well sign attached.
8. Rig down and move off rig. Clean up location.

PROPOSED WELL PLAN OUTLINE

WELL NAME: Jicarilla 22-5

COUNTY: Rio Arriba

LOCATION: CNWSH Sec. 22 T25N-R4W

STATE: New Mexico

DEPTH	FORMATION TOPS & TYPE	DRILLING PROBLEMS	TYPE OF FORMATION EVALUATION	HOLE SIZE	CASING		FRACTURE GRADIENT	FORMATION PRESSURE GRADIENT	MUD	
					SIZE	DEPTH			WEIGHT	TYPE
	WASATCH			12 1/2"	5 3/8"	200'				
	WASATCH								8.7-9.0	Gal
	Sand & Shale			7 7/8"					#/gal	
1000	ANILAS OJO ALAMO Fresh Wtr. Sd.									
	KIRTLAND Sand & Shale	LOST CIRCULATION								
2000										
3000										
	Pictured Cliffs Sd. Gas. Prod.		FDC LOG				.7 psi ft	.27 psi ft		
4000	LEWIS SHALE									
	Chacra Sand	Gas Productive	FDC LOG				.7 psi ft	.29 psi ft		
	LEWIS SHALE									
5000	MESA VERDE SAND & SHALE	GAS PRODUCTION	FDC LOG				.7 psi ft	.34 psi ft		
6000	MANCOS SHALE									
7000	GALLUP SAND & SHALE	LOST CIRCULATION HOLE WASHOUTS	FDC LOG				.7 psi ft	.35 psi ft		
	GREENHORN LIME DOLARIA		FDC LOG							
8000	SAND & SHALE		FDC LOG	7 7/8"	4 1/2"	7825'	.705 psi ft	.35 psi ft		
	TD. 7825'									

Date: October 7, 1970

Prepared by: J. A. Mazza

Approved: _____

Dr. Director

Drilling Supt.

DISTRIBUTION OF ENGINEERING WELL DATA
CASPER DIVISION

WELL NO. 22-5 FIELD WEST LANDRITH COUNTY RIO ARriba STATE NEW MEXICO

PRIMARY LOGS	SECONDARY LOGS Bond, Correlation, etc.	CORE ANALYSES	D.S.T.
Field Print	Final Sepia Film Field Final	Prelim. Final	Report

Divn. Mgr. Prod. - W.C.B.	1	1	1	1
Asst. Mgr. Prod. - R.L.A.	*	1	1	1
Prod. Research Mgr. - F.R.C.	1	1	1	1
Well Operating Supervisor	1	1	1	1
Division Geologist - DG	1	1	1	1
Exploration Geologist - R.J.E.	1	1	1	1
Res-Form. Eval. Suprv. - D.J. Timko	1	1	1	1
Asst. Mgr. Well Log Service	1	1	1	1
1753 Champa St., Denver.***	1	1	1	1

STATE **

U.S.G.S. **

PARTNERS **

TOTAL

* Headquarters needs log field prints only on significant stepouts.
 ** Requirements for State, U.S.G.S. and partners will vary by location.
 *** Logs for Rocky Mtn. Well Log Service should be held until we receive a release request from them.

NOTE: Service companies should be advised to send all copies of logs or reports to Division Production Office at 200 North Wolcott.

COMPLETION MEMORANDUM

JICARILLA 22 WELL NO. 5

BEFORE 1

OIL FIELD

CASE NO. 4462

Location: NW SW Section 22, T25N, R4W, Rio Arriba County,
New Mexico

Elevation: 6990' GL; 7004' KB

Casing: 8 5/8", 24#, J-55 set at 200' KB
100' - 4 1/2" OD, 10.5#, JE-55, BTRC
7600' - 4 1/2" OD, 10.5#, JE-55, ST&C
125' - 4 1/2" OD, 11.6#, JE-55, ST&C

Completion Procedure:

1. After moving out rotary rig, move in completion unit, pick up 2 7/8" tubing and drill out stage collar and pressure test to 1500 psig.
2. Circulate to T.D. and displace hole with 1% KCl water.
3. Pull tubing, move in logging unit, and run Gamma Ray with collar locator. Run Cement Bond log if full returns are not obtained during 1st stage cementing. If poor primary cement job is evident, it will be necessary to squeeze before stimulation. Squeeze volumes and procedures will be determined by engineer.
4. Move in eight (8) 500 barrel frac tanks and install frac head (minimum of 110,000 gal. required for 3 stage stimulation - suggest 140,000 gal. (3,330 bbl.) fluid on location for staging and includes load, flush, and tank bottoms). Perforate and sand frac in accordance to procedure below. Swab well in if necessary.

Gallup-Dakota Perforating and Fracturing Procedure

NOTE: The Gallup and Dakota will be perforated in one set-up. The well will then be stimulated in three (3) stages down 2 7/8" tubing using a Baker Retrievable Model "C" bridge plug and full bore cementer. Either Halliburton's MY-T-FRAC-60 or Dowell's WIDE-FRAC (YF6G) will be used as the fluid medium.

1. With hole loaded with 1% KCl perforate Dakota "J", Dakota "D", and Gallup 1 shot per foot as indicated by engineer. Use Schlumberger 3 3/8" Hyperjet - 13.5 gram RDX charge (0.52" x 9.38" penetration in Berea sandstone) or equivalent.
2. Install frac head.

3. Pick up bridge plug and packer on 2 7/8" tubing and set bridge plug below bottom of Dakota "J" perforations. Set packer above top of Dakota "J" perforations.
4. Hook up frac trucks and test lines and fittings to 5000 psi.
5. Sand-frac Dakota "J" down 2 7/8" tubing as follows: (Maximum allowable surface pressure 4000 psi at 10 BPM).
 - 4,300 gal. 1% KCl w/50 #/1,000 gal. ADOMITE AQUA and 10 #/1,000 gal. WG-6
 - 6,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA
 - 1,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA and 1/2 #/gal. 10-20 sand
 - 2,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA and 1 #/gal. 10-20 sand
 - 3,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA and 2 #/gal. 10-20 sand
 - 3,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA and 3 #/gal. 10-20 sand
 - 4,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA in first 2,000 gal. MY-T-FRAC-60 only and 4 #/gal. 10-20 sand
6. Flush with 2,100 gal. 1% KCl water.
7. Release packer, retrieve bridge plug, and set bridge plug between Dakota "J" and "D" perforations. Set packer above Dakota "D" perforations.
8. Sand-frac Dakota "D" using same volumes and procedure as outlined in (5) above. (Maximum allowable surface pressure 4000 psi at 10 BPM.)
9. Flush with 2,100 gal. 1% KCl.
10. Release packer, retrieve bridge plug, and set bridge plug below bottom of Gallup perforations. Set packer above Gallup perforations and frac Gallup down 2 7/8" tubing as follows: (Maximum allowable surface pressure 4000 psi at 10 BPM).
 - 15,000 gal. 1% KCl w/50 #/1,000 gal. ADOMITE AQUA and 10 #/1,000 gal. WG-6
 - 8,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA
 - 2,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA and 1/2 #/gal. 10-20 sand

10. (Continued)

- 3,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA
and 1 #/gal. 10-20 sand
 - 6,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA
and 2 #/gal. 10-20 sand
 - 6,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA
and 3 #/gal. 10-20 sand
 - 15,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA
in first 7,500 gal. MY-T-FRAC-60 only
and 4 #/gal. 10-20 sand
11. Flush with 2,000 gal. 1% KCl water.
12. Shut-in well for 12 hours or overnight.
13. Retrieve bridge plug and packer and retrieve 2 7/8" frac string.
Pick up 2 3/8" OD producing string containing from the bottom
up the following:
- (a) 2' sub with pinned collar.
 - (b) "D" nipple to be set opposite bottom of Dakota
perforations.
14. Swab well in if necessary and allow to clean up.
15. Install tubing stop and bumper spring one joint above "D" nipple.
16. Install surface intermitter and start well on plunger lift using
a cycle frequency of ten-30 minute cycles. Adjust cycle frequency
and flow duration depending on well performance.

pce

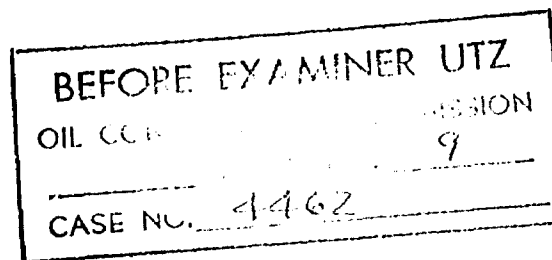
Prepared by: J. A. Mazza, Production Engineer

DRILLING AND EQUIPPING COSTS
1968, 1969 AND PROPOSED WELLS
GALLUP/DAKOTA COMPLETIONS
WEST LINDRITH FIELD

<u>Well No.</u>	<u>Completed</u>	<u>Intangibles,\$</u>	<u>Tangibles,\$</u>	<u>Total,\$</u>
28-4	10-68	82,716.84	23,214.02	105,930.86
28-7	11-68	86,761.43	31,107.71	117,869.14
28-5	12-68	96,036.95	30,657.79	126,694.74
28-6	12-68	97,363.62	30,994.33	128,357.95
28-8	5-69	92,574.78	30,786.30	123,361.08
22-2	7-69	102,408.37	30,139.57	132,547.94
22-3	7-69	92,762.11	37,612.36	130,374.47
22-4	9-69	107,365.53	32,202.69	139,568.22
Total		757,989.63	246,714.77	1,004,704.40
Average		94,748.70	30,839.35	125,588.05
1968 Average		90,719.71	28,993.46	119,713.17
1969 Average		98,777.70	32,685.23	131,462.93
22-5	1971	92,800	33,400	126,200
28-9	1970	92,400	30,400	122,800
28-10	1971	92,200	33,900	126,100
28-11	1971	91,600	33,500	125,100
Total		369,000	131,200	500,200
Average		92,250	32,800	125,050

If it is necessary to complete with a packer between the Gallup and Dakota formations, drilling and equipping costs will be:

Average	93,050	35,500	128,550
	800	2700	3,500



C O M P L E T I O N D A T A

. DAKOTA "D" ZONE
MCKINLEY COUNTY, NEW MEXICO

	Tenneco Don-ne-pah #1 NW NW Sec. 18 <u>T17N-R8W</u>	Tesoro S.F. #17 SE NW Sec. 7 <u>T17N-R8W</u>	Tenneco Hospah #10 NE NW Sec. 12 <u>T17N-R9W</u>	Tenneco Hospah #23 NE SW Sec. 12 <u>T17N-R9W</u>
Completion Date	6-2-70	7-2-69	8-20-69	7-7-67
Top of Perf. (subsea)	+4235	+4344	+4392	+4356
Initial Potential:				
Oil, B/D	144	--	--	--
Water, B/D	-0-	NA	--	-0-
Gas, MCF/D	284	792	384	2904
GOR	1977	--	--	--
Oil Gravity, °API	54	--	--	--
BHP, psig	1010	NA	NA	NA
Average Porosity, %	20.5	18.1	18	21

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
Applicant EXHIBIT No. 6
CASE 4457 - De Novo

RESERVOIR DATA
DAKOTA "D" ZONE
LONE PINE FIELD
MCKINLEY COUNTY, NEW MEXICO

Porosity, % 20.4
Water Saturation, % 35
Permeability, Air, md 250
Reservoir temperature, °F 108
Original Reservoir pressure, psig 1010
Oil gravity, °API 54
Reservoir Oil viscosity @ Bubble Point, cp. 0.25
Solution Gas-Oil Ratio, SCF/Bbl 970
Avg. thickness, ft 12

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
Applicant EXHIBIT No. 7
CASE 4457-He Norris

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

Page No. 1**CORE ANALYSIS RESULTS**

Company Tenneco Oil Company Formation Dakota File RP-3-2443
Well Santa Fe Pacific RR # 6 Core Type Dia. Conv. 4" Date Report 11-5-70
Field Unnamed Drilling Fluid Water Base Mud Analysts Mohl
County McKinley State N. Mex. Elev. 6266 GL Location SE NE Sec 13-T17N-R9E

Lithological Abbreviations

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCY		POROSITY PER CENT	RESIDUAL SATURATION PER CENT PORE		SAMPLE DESCRIPTION AND REMARKS
		Horiz.	Vert.		OIL	TOTAL WATER	
1	2700-01	0.43	0.07	6.6	0.0	78.7	Ss, gry, fn, slty, v/calc
2	2701-02	201.	95.	22.5	0.0	54.6	Ss, gry, fn
3	2702-03	6.6	3.5	21.0	0.0	74.7	Ss, gry, vfn, slty
4	2703-04	11.	7.2	22.9	0.0	73.4	Ss, gry, vfn, slty
5	2704-05	6.2	5.2	18.2	1.1	74.1	Ss, gry, vfn-fn, slty
6	2705-06	28.	19.	22.7	2.6	69.1	Ss, gry, vfn, slty, calc
7	2706-07	536.	421.	22.2	0.9	53.6	Ss, gry, vfn-fn, slty
8	2707-08	135.	57.	23.3	0.9	54.1	Ss, gry, vfn-fn, slty
9	2708-09	602.	461.	24.1	0.0	58.5	Ss, gry, vfn-fn, slty, calc
10	2709-10	216.	46.	23.3	0.0	57.1	Ss, gry, vfn-med, slty, calc
11	2710-11	576.	403.	24.0	0.8	46.6	Ss, gry, vfn-med, slty, calc
12	2711-12	293.	132.	21.9	2.7	51.1	Ss, gry, vfn-med, slty, calc
13	2712-13	141.	138.	20.6	1.0	44.1	Ss, gry, vfn-med, slty
14	2713-14	141.	118.	16.3	2.5	32.5	Ss, wh, vfn, slty
15	2714-15	155.	77.	22.2	0.0	52.2	Ss, gry, vfn, slty
16	2715-16	190.	161.	21.4	0.0	46.7	Ss, wh, vfn, slty
17	2720-21	222.	118.	22.7	7.9	43.1	Ss, wh, vfn, slty
18	2721-22	461.	403.	20.4	6.9	42.6	Ss, wh, fn-med, slty
19	2722-23	187.	181.	22.3	8.1	48.0	Ss, wh, vfn-fn, slty
20	2723-24	90.	16.	20.4	9.3	54.9	Ss, wh, vfn-fn, slty
21	2724-25	233.	213.	22.7	11.0	45.3	Ss, wh, vfn-fn, slty
22	2725-26	106.	103.	19.9	9.0	47.6	Ss, wh, vfn-fn, slty
23	2726-27	60.	57.	19.8	7.6	55.0	Ss, wh, vfn-fn, slty
24	2727-28	14.	10.	18.6	0.0	64.5	Ss, wh, vfn-fn, slty, calc
11-7-70							
25	2716-17	0.23	1.1	11.9	0.0	42.1	Ss, gry, vfn, slty
26	2717-18	0.98	0.37	4.9	0.0	20.4	Ss, gry, vfn, slty
27	2718-19	0.14	0.10	2.5	0.0	56.0	Ss, gry, vfn, slty
28	2719-20	8.2 *	0.60	8.7	13.8	78.1	Ss, gry, vfn, shly

* Denotes Fracture Permeability

Average Horizontal Air Permeability - 243 md
Average Porosity - 21.7%

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
Applicant EXHIBIT No. 8
CASE 4457 - *De Novo*

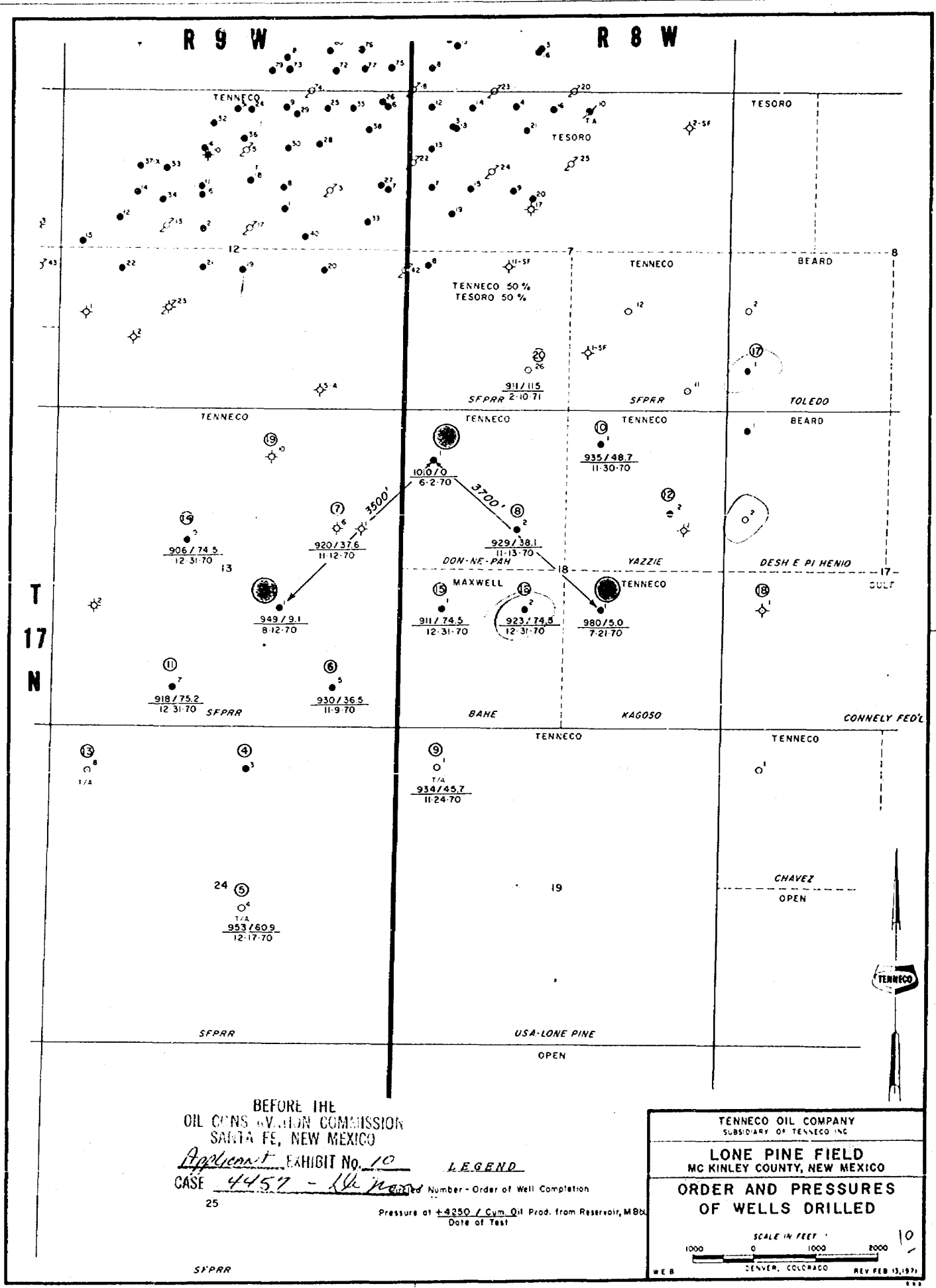
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CORE ANALYSIS SUMMARY
DAKOTA SAND
HOSPAN & LONE PINE POOLS
MCKINLEY COUNTY, NEW MEXICO

<u>Pool & Well Name</u>	<u>Zone</u>	<u>Avg. k (md)</u>	<u>Avg. ϕ (%)</u>	<u>Prod. Zone</u>	<u>IP</u>
<u>S. Hospah Pool</u>					
Tesoro SFP-RR #16	B	4.65	20.8	B	60 BOPD
Sec. 7-17N-8W	D	1.91	18.8		18 BWPD
Tesoro SFP-RR #17	B	2.49	19.9	D	792 MCF/D
Sec. 7-17N-8W					
<u>Hospah Pool</u>					
Tesoro SFP-RR #56	A	0.33	15.6	Hospah	
Sec. 1-17N-9W	B	1.37	20.2	Sd	
	D	0.44	19.8		
<u>Lone Pine Pool</u>					
Tenneco SFP-RR #6	D	243	21.7	D	9,250 MCF/D
Sec. 13-17N-9W					
Tenneco SFP-RR #10	D	67	18.5	D	2,500 MCF/D
Sec. 13-17N-9W					test
Tenneco Kagosa #1	D	261	19.2	D	197 BOPD
Sec. 18-17N-8W					
Tenneco Lone Pine #1	D	153	20.2	TA	
Sec. 19-17N-8W					

4 wells used

BEFORE THE
OIL CONSERVATION COM. 1-1-10
SANTA FE, NEW MEXICO
Applicant EXHIBIT No. *7*
CASE *4457 - He Nov*

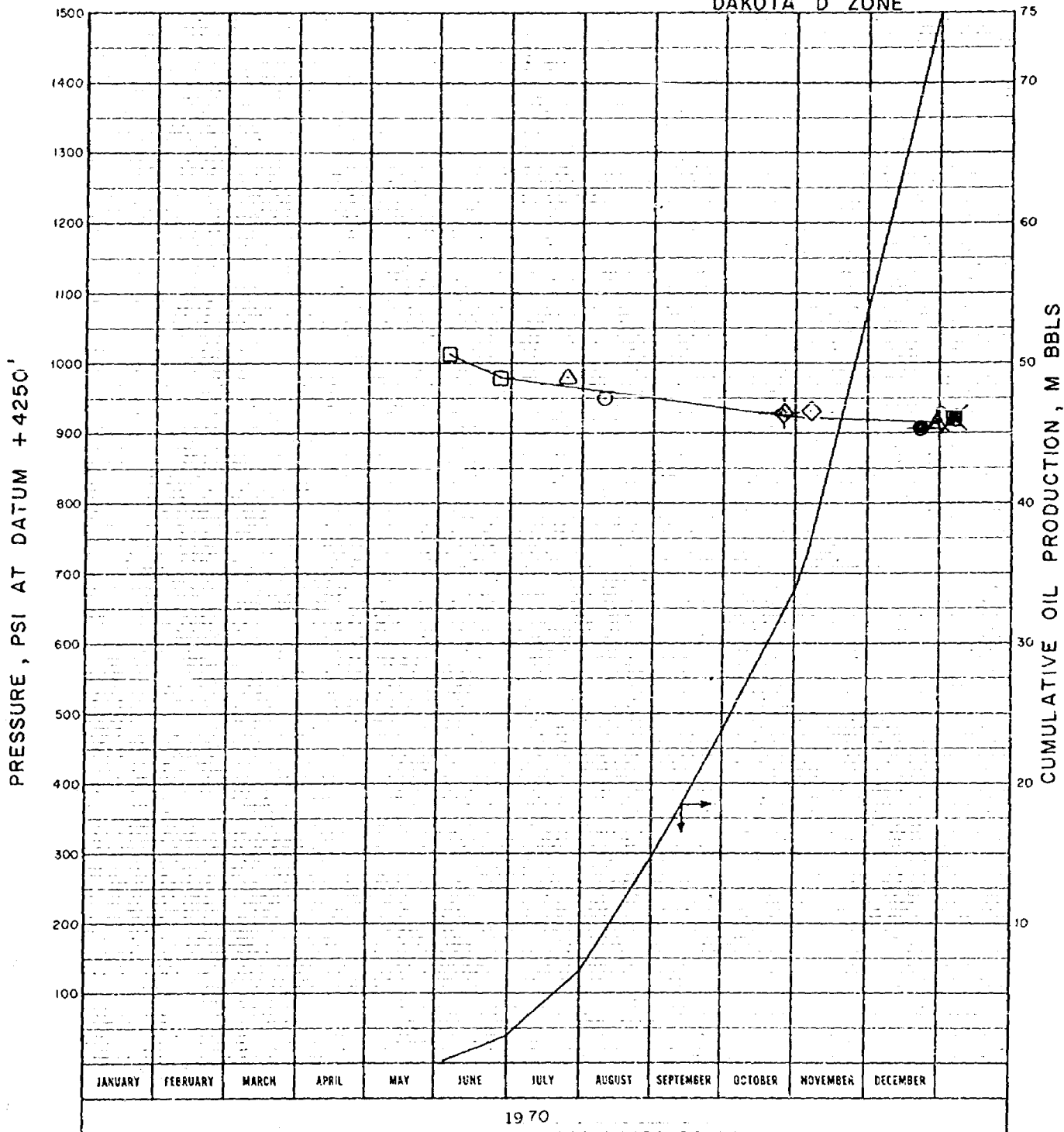


KEUFFEL & ESSER CO.
1 YEAR BY MONTHS 46 3093
X 150 DIVISIONS MADE IN U.S.A.

TENNECO OIL COMPANY
DENVER, COLORADO

LONE PINE FIELD
MC KINLEY CO., NEW MEXICO

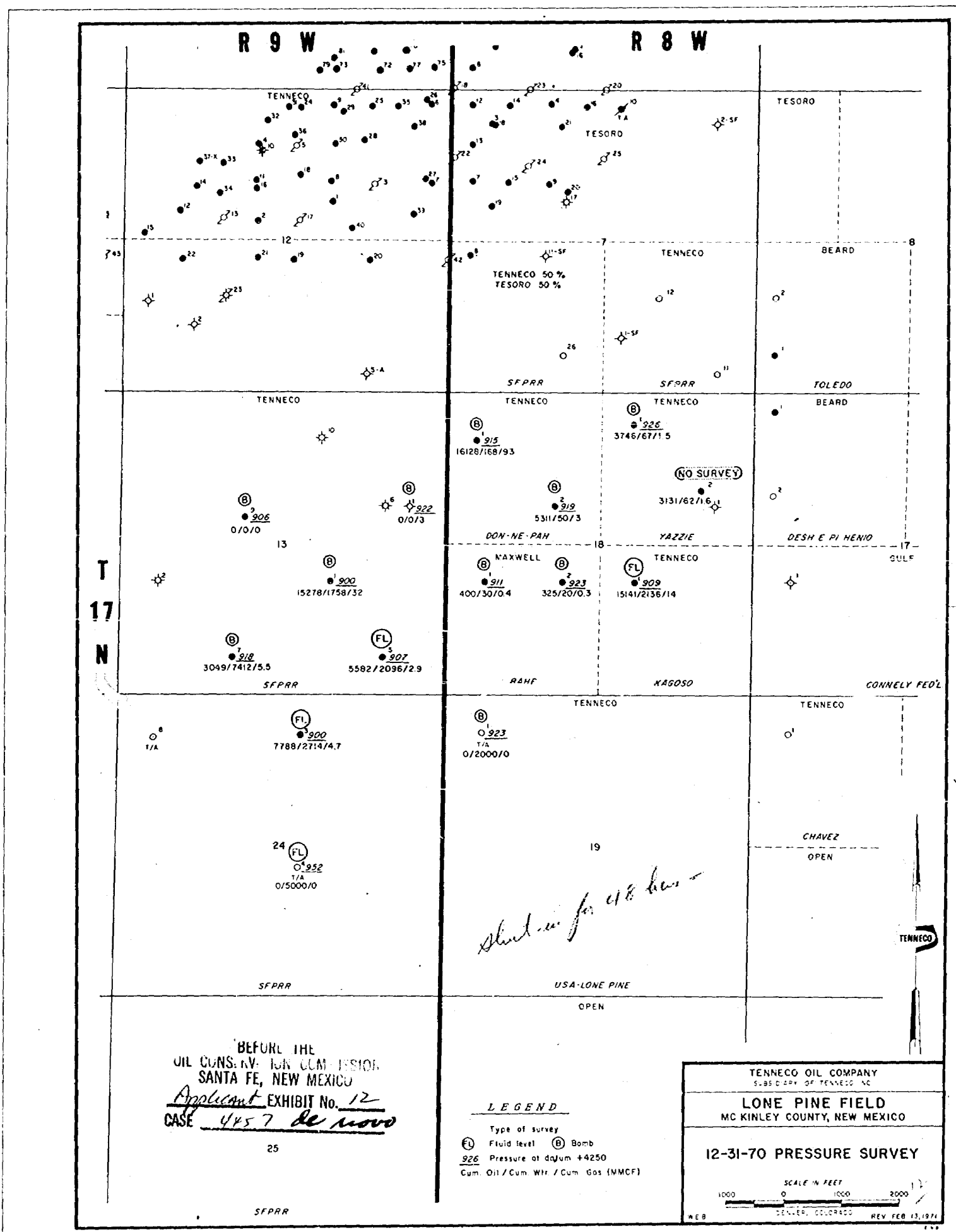
PRESSURE - PRODUCTION HISTORY
DAKOTA "D" ZONE

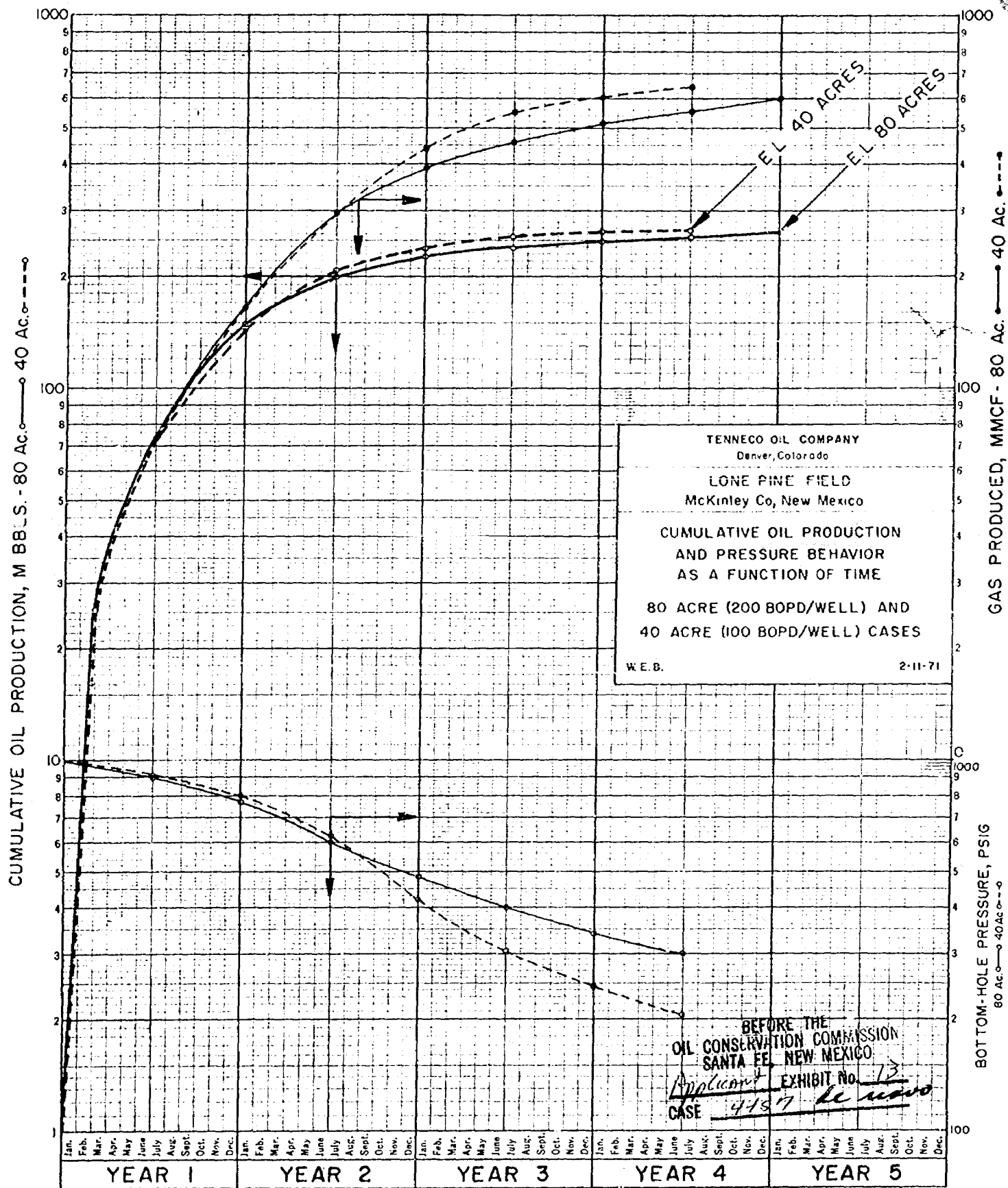


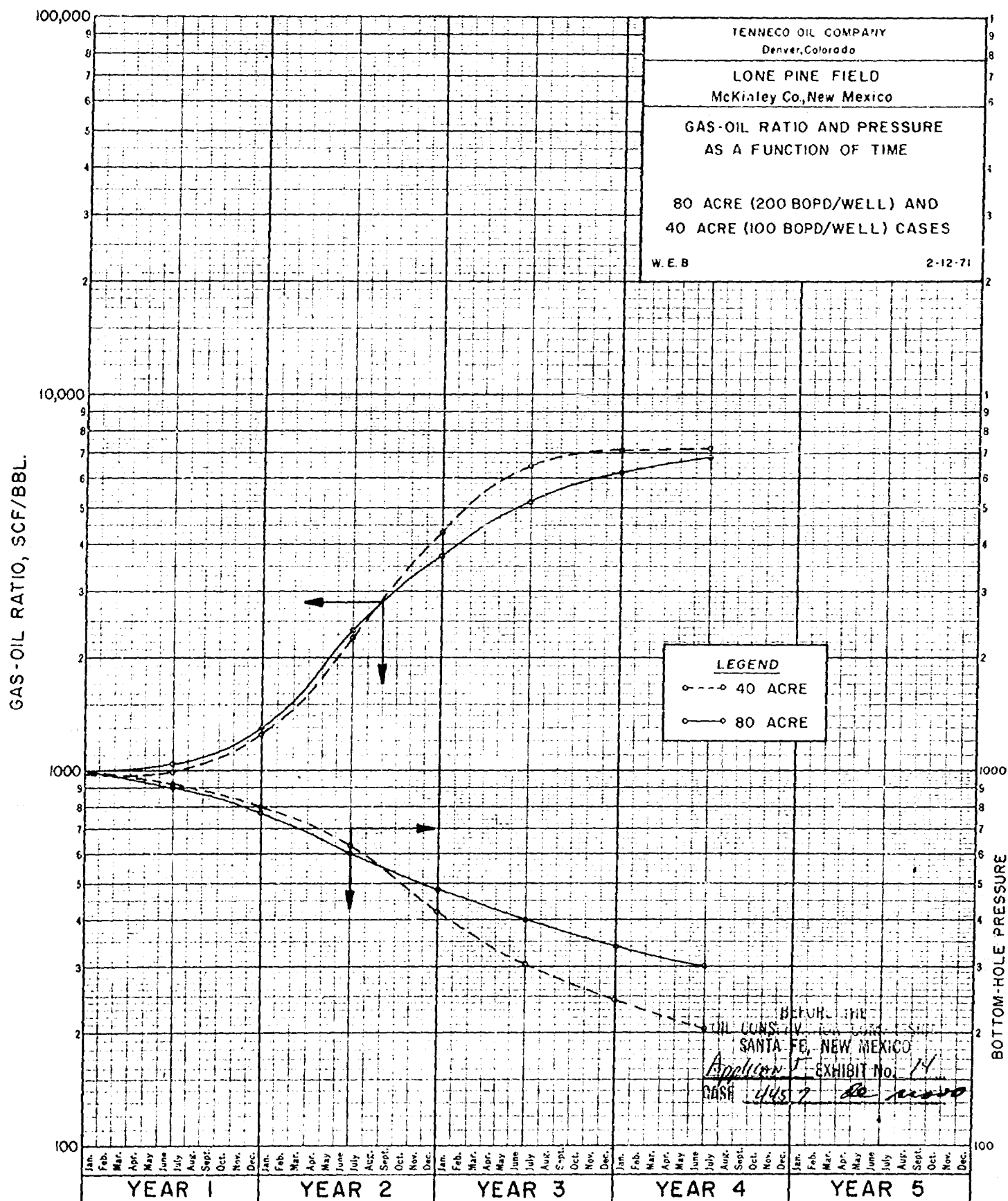
BAH E 1 (MAXWELL)
BAH E 2 (MAXWELL)

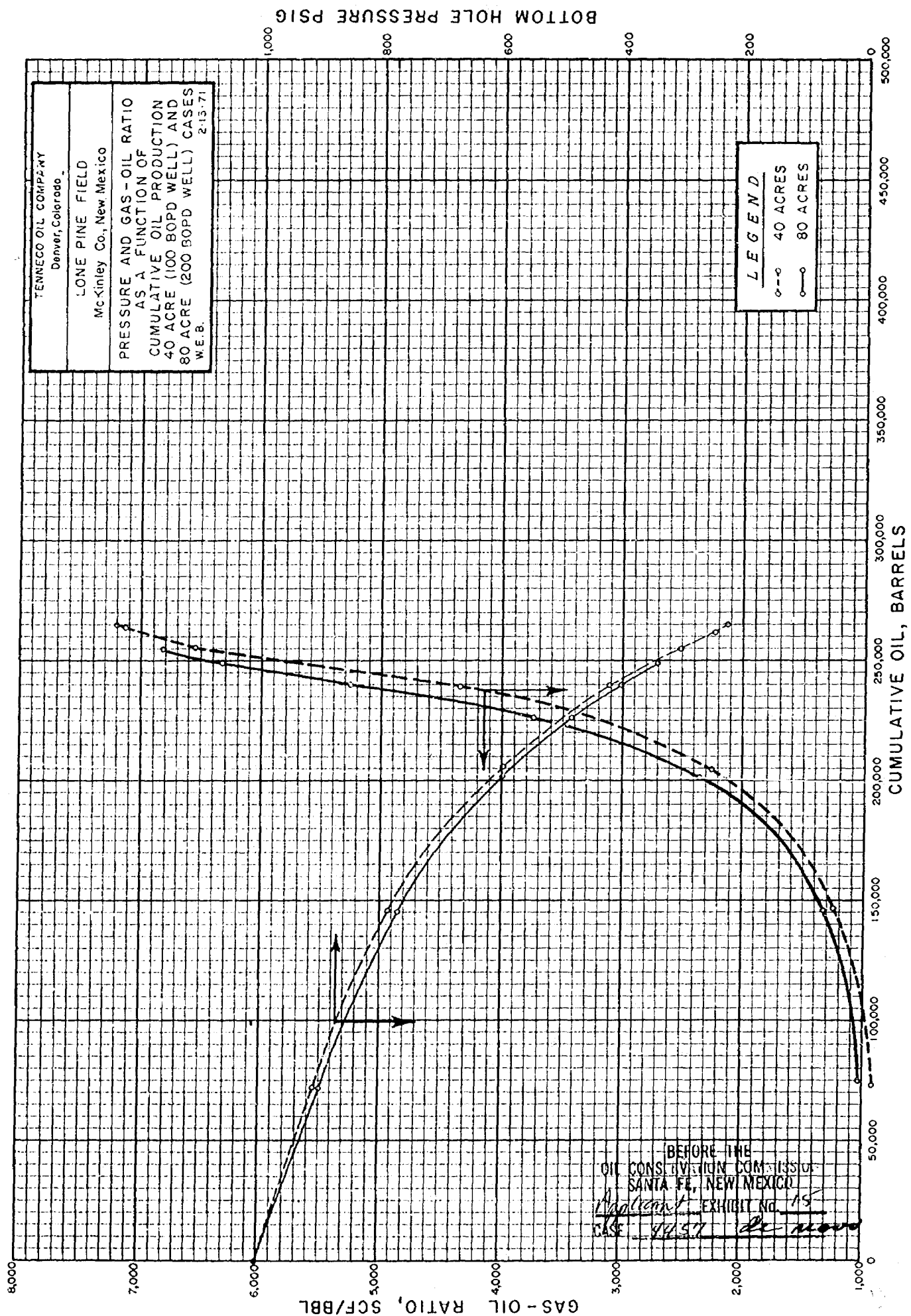
AVERAGE - SFPRR #1, DON NE PAH #1, KAGOSA #1
DON NE PAH #1
S.F.P.R.R. #1
KAGOSA #1
S.F.P.R.R. #5
AVERAGE - DEC. 31 SURVEY

BEFORE THE
OIL CONS. DIVISION COMMISSION
SANTA FE, NEW MEXICO
Applicant EXHIBIT No. 11
CASE 4457 de novo







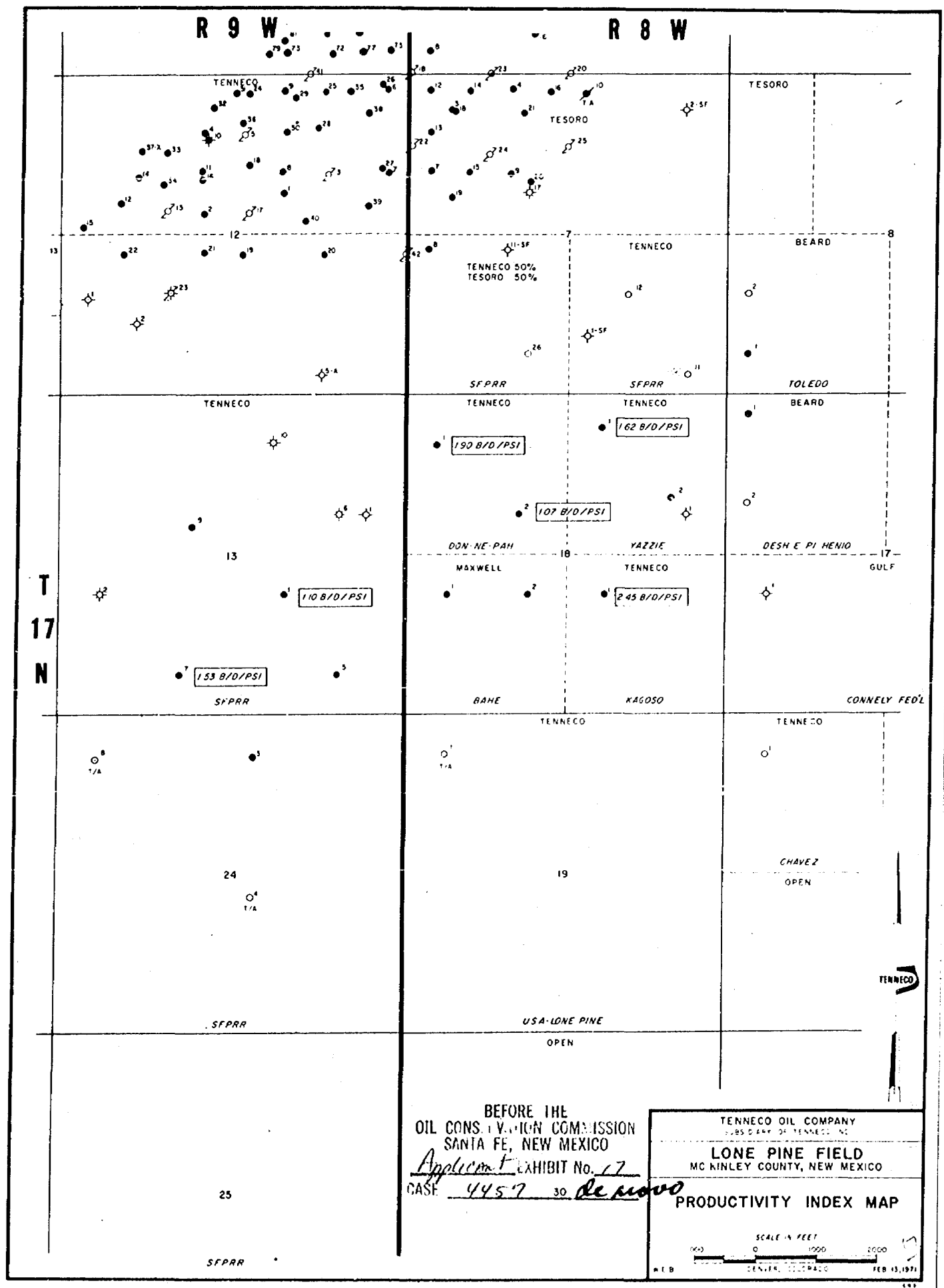


ECONOMICS

INCREMENTAL INVESTMENT AND
RESERVES FOR 40-ACRE SPACING
LONE PINE DAKOTA "D" POOL
MCKINLEY COUNTY, NEW MEXICO

Total Wells (additional)	17.0
Life, yr.	4.0
Primary oil recovery	
Gross, Bbls.	51,000
Net, bbls.	41,820
Investment, \$	858,900
Net income before FIT, \$	112,000
Net Loss, \$	-746,900

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
Applicant EXHIBIT No. *16*
CASE *4457 de novo*



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

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

February 23, 1971

REGULAR 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
(De Novo)

BEFORE: Mr. A. L. "Pete" Porter
Mr. Alex J. Armijo

TRANSCRIPT OF HEARING

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1 MR. PORTER: We'll take up, next, Case 4457.

2 MR. HATCH: Case 4457, continued from the February
 3 17th, 1971 hearing. Application of Tenneco Oil Company for
 4 the creation of a new pool, assignment of discovery allowable,
 5 and promulgation of special pool rules, McKinley County,
 6 New Mexico.

7 (Whereupon, Applicant's Exhibits
 8 Numbers 1 through 17, inclusive,
 were duly marked for identification.)

9 MR. PORTER: Mr. Bateman, Mr. Hatch will swear your
 10 witnesses.

11 (Witnesses sworn.)

12 MR. BATEMAN: If the Commission please, I have a
 13 brief statement to read into the record before we begin.

14 MR. PORTER: You may proceed, Mr. Bateman.

15 MR. BATEMAN: Thank you. Tenneco Oil Company, by
 16 its application in this case, seeks primarily to create a new
 17 oil pool in a designated area, McKinley County, New Mexico.
 18 In addition to the application, it concerns the assignment of
 19 an oil discovery allowable, Tenneco's discovery well, the
 20 Don-ne-pah well number 1 located in the northwest of the
 21 Northwest Quarter, Section 18, Township 17 North, Range 8 West,
 22 of course, in McKinley County.

23 In conjunction with the creation of a new pool,
 24 special rules for the regulation of the pool are requested.
 25 These proposed rules principally provide for the development

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1 of the pool on 80-acre spacing in proration units.

2 Before proceeding with the testimony, however, it
 3 should be pointed out that there has been a change in circum-
 4 stances that has occurred since the application in this case
 5 was originally filed. The application was filed in October of
 6 1970. Considerable development has taken place in the pool
 7 since that time, and the original application contained
 8 provisions for fixed locations for wells drilled on the 80-acre
 9 proration units.

10 Those locations were designated to be in the
 11 northwest and the southeast quarter of each quarter section.

12 In the ensuing period of time, however, two wells
 13 have been drilled in off-pattern locations, and the third is
 14 being drilled in at the present time. Since off-pattern wells
 15 have been drilled in the pool, correlative rights are
 16 definitely affected.

17 We feel that it would not be equitable to exempt
 18 these off-pattern wells from the requirements of fixed
 19 locations and proceed to impose a rigid standard and outline
 20 for future wells to be drilled in the pool. Tenneco therefore
 21 is waiving its request for fixed locations.

22 MR. PORTER: All right.

23 MR. HATCH: May I say something here. You're not
 24 wanting to foreclose the Commission if --

25 MR. BATEMAN: No.

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1 MR. HATCH: If they wish to have fixed locations?
 2 MR. BATEMAN: That's correct, Mr. Hatch. That's
 3 correct.
 4 MR. HATCH: And you're not suggesting, or are you,
 5 that the Commission would have to grant 80-acre spacing on
 6 those wells that are not on --
 7 MR. BATEMAN: No, I'm not suggesting that at all,
 8 sir. I'm just pointing out that there has been, in fact, the
 9 change of circumstances that significantly affect the question
 10 of fixed locations; that is, the drilling of off-pattern wells.
 11 Since the application in this case was originally
 12 filed in October of 1970, we feel that we should point this
 13 out to the Commission before proceeding. Does that clarify it?
 14 MR. HATCH: I think so.
 15 MR. PORTER: I believe what you are saying now, is,
 16 actually, you are revising your application to make it
 17 flexible because of the fact that three wells are drilled off
 18 pattern. Now, as I understand it, if the Commission should
 19 desire to grant the 80-acre spacing and retain the fixed
 20 pattern, then the Commission itself will determine what they'll
 21 do with four of the wells that are off pattern.
 22 MR. BATEMAN: That's correct.
 23 MR. PORTER: Okay.
 24 MR. BATEMAN: The first witness is Mr. Dean Rial.
 25

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DEAN RIAL

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

DIRECT EXAMINATION

BY MR. BATEMAN:

Q Mr. Rial, have you previously testified before the Commission?

A Yes, I have.

Q Have you stated your qualifications into the record?

A Yes, I have.

MR. BATEMAN: Are the witness's qualifications acceptable?

MR. PORTER: Yes, they are.

Q Mr. Rial, would you refer to your Exhibit Number 1 and tell the Commission what is reflected in that exhibit.

A Exhibit Number 1 is a data map and shown on here by the red arrow is the location of the Don-ne-pah Number 1, the discovery well for the proposed Lone Pine Pool located in the Northwest Northwest of Section 18 of 17 North and 8 West in McKinley County, New Mexico.

Shown within a radius of the circle here, a radius of two miles, are the locations of all wells drilled and all locations of record within this two-mile area.

We also show here the producing oil and gas wells and the formation from which each well is presently

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1 producing. The formation code is located in the legend
2 at the bottom of the map.

3 We've shown here all locations and total depth of
4 all dry holes in the area. All wells completed in the
5 Dakota "D" Zone are identified by the green dots, and
6 all wells completed in the other Dakota Zone, the
7 Dakota "A" or "B," are shown by the red dots.

8 Shown here in the proposed pool is the outline of
9 the Lone Pine Pool as reflected by Commission Order
10 R-4084 dated December the 22nd, 1970.

11 We show here the names of all lessees of record
12 and all operators within this area. The most that should
13 be noted here I believe is that the land is composed of
14 Indian allotted lands leased from the federal government
15 and the fee lands leased from Santa Fe Pacific Railroad.

16 Q Mr. Rial, continue to Exhibit Number 2. It appears to
17 be a log of Don-ne-pah Number 1, and tell the Commission
18 what relevance Exhibit Number 2 has to the application.

19 A Exhibit Number 2 is a copy of a dual induction log,
20 lateral log of the discovery well, the Don-ne-pah
21 Number 1. This log was measured to a total depth of
22 2946 feet.

23 Now, noted here are the vertical limits of what we
24 define as the Dakota "D" Zone. This is the zone from
25 2792 to 2834. Now, this is the zone of question and

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1 the zone of reference in our related testimony in our
 2 application today.

3 Also shown here are the vertical limits of what
 4 we've classified the Dakota "A" and the Dakota "B" and,
 5 also, upwards 1738 feet, we see the other producing
 6 zones in the immediate area, the Upper Hospah Zone and
 7 the Lower Hospah Zone.

8 Also shown are the initial perforated intervals in
 9 the Dakota "D" Zone of 2802 to -21, and 2827 to -29.
 10 This is the first oil production in the "D" Zone in this
 11 immediate area and is the deepest oil production in
 12 McKinley County.

13 As we have noted here, the Dakota "A" and the "B"
 14 and the "D" are all distinct sand intervals. They are
 15 separated by more or less a shale zone. This defines
 16 that throughout the area, that there's no vertical
 17 communication or coalescence of the sands, that they
 18 are distinct and separate intervals that can be
 19 correlated across the area.

20 We are therefore defining the vertical limits of
 21 the Dakota "D" Zone as they are shown on this log in
 22 the Don-ne-pah Number 1 from 2792 to 2834.

23 Q The gray area on Exhibit Number 2 then indicates
 24 impermeable shale units, is that correct?

25 A Yes. This shows the separation between the distinct sand

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1 units.

2 Q Continue then to Exhibit Number 3 which is a structure
 3 map and indicate its significance to the application.

4 A Exhibit Number 3 is a structure map drawn on the top of
 5 the Dakota "B" Zone as defined in Exhibit 2. This map
 6 is primarily presented to exhibit the separation, the
 7 structural configuration and separation of the proposed
 8 Lone Pine Pool from the existing Hospah Pool located
 9 up in Section 1 of 17 North and 9 West, and the South
 10 Hospah Pool essentially located in Section 12 of
 11 17 North, 9 West.

12 Shown on here is Fault B which is a normal down
 13 to the north fault. That fully separates the production
 14 from the Hospah Pool in Section 1 and the South Hospah
 15 Pool in Section 12.

16 Shown here also is Fault A which is a normal down
 17 to the south fault which separates the proposed Lone
 18 Pine Pool and the South Hospah Pool. Fault A is
 19 identified in actually five wells.

20 Now, these wells are located or identified by the
 21 orange notations just to the north along the northeast
 22 portion of Fault A.

23 What we see here is that the fault has a throw of
 24 a hundred and, about, seventy-five feet and then
 25 followed by that is the subsea depth at which the fault

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1 was identified in each specific well. The fault has a
2 displacement as can be seen here about 120 to 175 feet
3 in the northeast portion.

4 As you will notice in the southwest portion of the
5 fault, across our contour lines, that the fault only has
6 a displacement of about 50 feet at that point. To under-
7 stand this, let's look at Fault C. This fault is a
8 normal down to the north fault that acts as a relief
9 fault to Fault A. It's identified in the subsurface
10 in Tenneco's Santa Fe Pacific Railroad Well Number 10
11 located in the northwest of the northeast of Section 13
12 of 17 North and 9 West. Shown there in orange is the
13 fault at a plus 6041 having a throw of about 110 feet.

14 The net result of this fault is to reduce the throw
15 of the Fault A in the southwest portion to approximately
16 in the neighborhood of 50 feet. The wells presently
17 producing from the Dakota "D" Zone are noted again in
18 green; the Don-ne-pah Number 1 which is located in the
19 northwest northwest of Section 18 is the first well that
20 was drilled in this pool.

21 Three gas wells located north of Faults A and C
22 were completed in the Dakota "D" Zone prior to the
23 drilling and completion of the Don-ne-pah Number 1.

24 These are the Tesoro, Santa Fe Pacific Railroad
25 Number 17 in the southeast of the northwest of Section 11,

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17 North and 8 West, and Tenneco's Hosnab Number 10 and, also, the 23 identified by the red dots in Section 12 of 17 North and 9 West.

It should be noted that the gas production in the Hosnab 23 and 10 are commingled with the Dakota "A" and the "B" Zones, and oil production occurs in the Dakota "D" Zone north of Fault A. Also shown here, and that would set a reference as far as the productive limits within the testimony, shown here is the limits of the Dakota "D" Zone and oil-water contact shown at a subsea datum of plus 4212.

This oil-water contact is based on the perforations in the Kagosa Number 1. That's located in the northwest of the southeast of Section 18, and Gulf's Connely Federal Number 1 which is in the northwest southwest of Section 17, 17 North and 8 West.

The Gulf's well was a dry hole and has been plugged and abandoned.

Also shown here is a transition zone that exists between the oil-water contact and the free-oil producing areas. Now, this is designated in the cross hatched areas.

A gas cap is also present, the contact is shown at a subsea datum of plus 4260. This is based on core analysis and completion data from Santa Fe Pacific

1 Railroad Number 6 in the southeast northeast of
 2 Section 13, 17 North and 9 West. We feel that this is a
 3 separate and distinct pool, accumulation of oil, and that
 4 Faults A and C are both sealing faults and separates
 5 any production from the north fault in the Faults A and
 6 C in the South Hospah.

7 To show the existence of the sealing fault between
 8 the proposed Lone Pine Pool and the South Hospah Pool,
 9 I'd like to show you two cross-sections. The lines
 10 shown here are A to A prime and B to B prime. These
 11 will be discussed in Exhibits 4 and 5.

12 O Let's continue then to Exhibits 4 and 5.

13 A Exhibit A is a cross-section from Tenneco's Wiggam
 14 Number 3 to Tenneco's Don-ne-pah Number 1.

15 O That's Exhibit 4.

16 MR. PORTER: I believe he meant Exhibit 4, AA prime.

17 THE WITNESS: Right. Exhibit 4, AA prime. This
 18 shows Fault B and also the location of Fault A and the sub-
 19 surface location of Fault C. Shown in crossover column here
 20 are the gas-producing zones colored in yellow and the oil
 21 colored in green. The producing zones are colored, but the
 22 nonproducing are not colored.

23 The Exhibit Number 5 cross-section, BB prime is a
 24 north-south cross-section connecting the Santa Fe Pacific
 25 Railroad, Tesoro Oil Company, Santa Fe Pacific Railroad

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1 Number 17 which was completed as a gas well in the Dakota "D"
 2 Zone to the Don-ne-pah Number 1 which was completed as an
 3 oil well in the "D" Zone.

4 Here, we show the subsurface positions of Fault A
 5 and Fault C and again showing the separation of production.

6 Q To re-emphasize, Mr. Rail, I believe Exhibits 4 and 5
 7 indicate you have a separate source of supply here.

8 A Yes, they do.

9 Q All right. Continue to Exhibit Number 6 which is
 10 completion data on the Dakota "D" Zone, please. Explain
 11 these data to the Commission.

12 A Exhibit Number 6 is a tabulation of the completion data
 13 of the Don-ne-pah Number 1, and the other three existing
 14 Dakota "D" producing wells in this two-mile radius.

15 These three wells were completed prior to the
 16 drilling of the Don-ne-pah Number 1. It is of importance
 17 to note that all three wells are located north of
 18 Fault A and C and are all gas producing wells. The
 19 Don-ne-pah Number 1 is an oil well.

20 Exhibit Number 7 is a tabulation of the reservoir
 21 data, the Dakota "D" Zone in the Lone Pine Pool. This
 22 was taken as representative of the reservoir properties,
 23 and is taken from a core analysis, bottom-hole pressure
 24 build ups and crude oil samples and PVT data.

25 Q As I understand it, the next witness will have more to

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1 say about Exhibit 7, is that correct?

2 A Yes. He will go into the reservoir properties in more
3 detail.

4 Q All right. Would you summarize your testimony, so far.

5 A We have shown, identified the vertical limits of the
6 Dakota "D" Zone. We have shown that there's vertical
7 separation between the "A" and the "B" Zones and we have
8 established that the Don-ne-pah Number 1 is the first
9 and deepest oil production in McKinley County.

10 Q Were Exhibits 1 through 7 prepared by you or under your
11 direction?

12 A Yes, they were.

13 MR. BATEMAN: All right. This concludes Mr. Rial's
14 direct testimony and we'll give the Commission an opportunity
15 to cross examine.

16 MR. PORTER: You will submit all your exhibits, I
17 assume, at the same time?

18 MR. BATEMAN: Yes.

19 MR. PORTER: Any questions?

20 CROSS EXAMINATION

21 BY MR. NUTTER:

22 Q Mr. Rial, up here in the north fault of Fault A, you
23 mentioned that you had three wells that produced gas
24 from the "D" Zone. Is this correct?

25 A That's correct.

1 Q The one green one to the east and then these two that
2 are colored in red, and the reason of them being colored
3 in red is because they are commingled in the well bore
4 with the Gallup, is that it?

5 A No. They are commingled with the Dakota "A" and "B"
6 Zone and they are all gas. There's no oil being produced
7 in the commingled wells.

8 Q Was there created a gas-oil pool for the "A" and "B"
9 up there?

10 A No, not to my knowledge.

11 MR. PORTER: Mr. Kendrick, would you shed some
12 light on that point?

13 MR. KENDRICK: We created an oil pool; that was the
14 oil pool created last week by the "A" and "B" Zones and the
15 Marsh's Zone. There's an oil well in Section 7 of 17/8,
16 Tesoro's Santa Fe Number 16 in Unit C. There's an oil well
17 in Unit P of Section 11, 17/9 being Texaco's Wiggam Number 2
18 which produced oil downdip from this gas in other zones than
19 the "D" Zone, but as an overall picture, I considered all this
20 gas cap for oil lying downdip. I have not yet found downdip
21 oil wells in the "D" Zone to the east or to the southwest,
22 but the current use of the gas of the area is below what the
23 gas would be as an oil pool.

24 MR. PORTER: Thank you.
25

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1 MR. NUTTER: So you don't feel that there's any high
2 withdrawals then from the gas zone than there should be --

3 MR. KENDRICK: No. No, there are no gas pool facili-
4 ties in the area so the only gas that's used is lease-used gas
5 within the pools, so their own use at this time is not being
6 curtailed by this being an oil pool.

7 MR. NUTTER: Okay.

8 Q (Mr. Nutter continuing) Now, I have just one other short
9 question, Mr. Rial. Is there any production at all between
10 the fault of Fault C and A, or --

11 A No. No production.

12 MR. NUTTER: That's all. Thank you.

13 MR. PORTER: Does anyone else have a question of
14 Mr. Rial? You may be excused.

15 MR. BATEMAN: The next witness of Tenneco is
16 Mr. Bill Melnar.

17 WILLIAM C. MELNAR

18 called as a witness, having been previously duly sworn, was
19 examined and testified as follows:

20 DIRECT EXAMINATION

21 BY MR. BATEMAN:

22 Q Mr. Melnar, will you state your full name and occupation
23 and place of residence.

24 A My name is William C. Melnar. I'm the District
25 Petroleum Engineer in Denver for Tenneco Oil Company.

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1 I live at 7908 West Harvard Drive in Denver.

2 Q Have you previously testified before the Commission?

3 A No, I haven't.

4 Q Would you state briefly into the record your educational
5 background and work experience.

6 A I graduated from the University of Texas, Bachelor of
7 Science degree in petroleum engineering on January, 1958.

8 Since graduation or for the past 13 years, I have
9 worked for Tenneco Oil Company as a petroleum engineer;
10 the majority of this experience has been in reservoir
11 engineering.

12 Q Are you familiar with the area in question in the
13 application today?

14 A Yes, I am. I have been involved with this field since
15 its discovery.

16 MR. BATEMAN: Are the witness's qualifications
17 acceptable?

18 MR. PORTER: Yes, they are.

19 Q All right, Mr. Melnar. Would you refer to Exhibit
20 Number 8 and identify it and state what relevance it has.

21 A Exhibit Number 8 is a core analysis report on the
22 Dakota "D" Zone in Santa Fe Pacific Railroad Number 6.
23 Based on all the available data, I believe this report
24 represents typical rock properties for the reservoir.

25 As described, the rock is a white to gray, very fine,

1 medium silty sandstone. The porosity is very good,
2 and averaging 21.7 percent. The permeability is also
3 very good and averages 243 millidarcies.

4 As you can see, it generally ranges from about 50
5 to 600 millidarcies, and the rock is not fractured. In
6 summary, it's a very excellent rock.

7 Q How does the porosity and the permeability in the
8 Hospah and South Hospah Pool compare with the proposed
9 Lone Pine Pool?

10 A Exhibit 9 shows this comparison real well. As you can
11 see, the porosity for the deep D zone in the Hospah Pool
12 and South Hospah Pool is about 20 percent and similar
13 to the Lone Pine field.

14 However, the permeability ranges only from one to two
15 millidarcies, whereas, in the Lone Pine Pool, permeability
16 ranges from 67 to 221 millidarcies.

17 Q Would you refer again to Exhibit Number 7 that was
18 discussed and discuss the reservoir oil properties.

19 A As shown on Exhibit 7, the reservoir temperature is 108
20 degrees Fahrenheit. The original reservoir pressure is
21 1010 psig. This pressure is also the bubble point
22 pressure.

23 The oil has an API gravity point of 54 degrees and
24 contains 970 standard cubic feet of gas in solution per
25 barrel at above the 1010 psig bubble point.

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1 The reservoir viscosity is a very favorable .25
 2 centipores. This low viscosity results in the Dakota
 3 "D" oil being a very mobile oil.

4 For comparison, the reservoir viscosity of the
 5 Lower Hospah oil in the South Hospah field just north
 6 of the Lone Pine field is 55 centipores or, in other
 7 words, 220 times more viscous than the Dakota "D" oil.

8 Q All right. Now, Mr. Melnar, let's move on to Exhibits
 9 10 and 11 and, first, identify both of these exhibits.

10 A Exhibit Number 10 is a well location map of the Lone
 11 Pine field shown by the circled numbers above the well,
 12 the order in which the wells were completed, and below
 13 the well are initial well bottom-hole pressure and this
 14 pressure is at a plus 4250 datum. It's located on the
 15 top left, the date of the pressure, below the line, and
 16 the cumulative oil production from the reservoir at the
 17 time of the pressure survey in the top right portion.

18 Exhibit 11 is a pressure production history of the
 19 Lone Pine field. The curve that is declining is a plot
 20 of reservoir pressure at a datum of plus 4250 versus time
 21 and the curve that is inclining is a plot of cumulative
 22 oil production versus time.

23 Can I go on back to Exhibit Number 10? Okay.
 24 Going on back to Exhibit Number 10, you can note that
 25 the first well completed, the Don-ne-pah Number 1 which

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1 is indicated by the red circle with the number one in
 2 it, had an initial pressure of 1010 psig on June the
 3 2nd, 1970.

4 The second well completed, the Kagoso Number 1
 5 located 3700 feet to the southeast of the Don-ne-pah
 6 Number 1, or on 160-acre spacing, had initial pressure
 7 of 980 psi on July the 21st, 1970, at which time the
 8 cumulative oil recovery from the reservoir was 5000
 9 barrels of oil.

10 Now, this shows that 5000 barrels of oil production
 11 from the Don-ne-pah Number 1 lowered the reservoir
 12 pressure 30 psi over a distance of 3700 feet. Now, I
 13 say that this is excellent pressure communication.

14 Now, the third well, the Santa Fe Pacific Railroad
 15 Number 1 was then completed 3500 feet southwest of the
 16 Don-ne-pah Number 1 and approximately one mile west of
 17 the Kagoso Number 1. Its pressure on August the 12th,
 18 1970, was 949 psi, or a decrease of another 31 psi.
 19 Cumulative recovery at this time was 9100 barrels of oil.
 20 This, too, shows drainage over areas of at least
 21 equivalent to 160-acre spacing.

22 Now, let's refer to Exhibit Number 11. Let's refer
 23 to the curve that is declining. The pressures for the
 24 Don-ne-pah Number 1, the Kagoso Number 1 and the Santa
 25 Fe Pacific Railroad Number 1 which we just discussed

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1 are shown on the curve as a square, triangle, and circle.
 2 This is in the months of June, July and August.

3 Now, the next point on the curve which is colored
 4 green is an average pressure taken from a fieldwide
 5 shut-in on October 27th, 1970. This pressure is 926 psig.

6 Then on November the 9th, 1970, we completed the
 7 Santa Fe Pacific Railroad Number 5 as a diagonal 80-acre
 8 offset to the Number 1. We'll refer to Exhibit 10 and
 9 see the relationship.

10 Number 5 is indicated with a green dot, and the
 11 pressure for Number 5 was 930 psi or almost the same as
 12 the fieldwide pressure taken a few days earlier. This
 13 is another example of excellent drainage on a spacing
 14 greater than 40 acres.

15 Q Mr. Melnar, please continue to Exhibit Number 12 and
 16 identify that and discuss its relevance.

17 A Exhibit 12 shows the results of a fieldwide pressure
 18 survey taken December the 31st, 1970. The letter, or the
 19 circled letter above each well designates the type of
 20 survey. The B for subsurface pressure taken with a bomb,
 21 and FL for a fluid level measurement with a sonometer
 22 (son-o-log) device.

23 MR. PORTER: What was the date of this survey?

24 THE WITNESS: December 31, 1970.

25 The number to the right of the well is the pressure.

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1 reservoir pressure at a datum of plus 4250. The
2 numbers below the well are, from left to right, the
3 cumulative oil, cumulative water, and cumulative gas
4 production as of December 31st, 1970.

5 Now, in this survey, all the wells were shut-in,
6 all the wells in the reservoir were shut-in at the same
7 time for a minimum of 48 hours. We know from experience,
8 with pressure buildups in this field that the reservoir
9 static pressure is reached in four to twenty -- from
10 four to twenty-four hours. Therefore, the 48 hour
11 shut-in was more than sufficient to reach a static
12 pressure.

13 Now, analysis of this pressure survey again indicates
14 the reservoir to be acting as a unit. The individual
15 pressures in the productive area only range from 900 to
16 926 psig and average 915 psig. I believe a big portion
17 of this 26 psig range is probably due to pressure
18 measurement accuracy.

19 Two other points I would like to make in this
20 exhibit are, one, Santa Fe Pacific Railroad Number 9
21 which is located in the Southeast of the Northwest of
22 Section 13, without any production, had a pressure
23 similar to its offsets. Its pressure was 906 and its
24 offsets all in production had pressures ranging from 900,
25 922.

1 Secondly, the Bah-E Wells located in the Southwest
2 Section or Southwest Quarter of Section 18, with only
3 300 to 400 barrels of oil production prior to the survey,
4 also had pressures similar to their offsets. The fact
5 that Well Number 1 is essentially offset on 80-acre
6 spacing units and Well Number 2 is offset on 40-acre
7 spacing did not affect their pressures.

8 To further illustrate the fact that the reservoir
9 is acting as a unit, that it can be drained on 80-acre
10 spacing, let's refer to Exhibit Number 11 again.

11 The average pressure on December 31, 1970, was
12 915 psi as denoted by the green triangle-shaped figure.

13 The initial pressure from the two Bah-E Wells
14 completed just prior to the survey are described by the
15 red circle and the red square-shaped symbols. Their
16 initial pressures are simply the average reservoir
17 pressure.

18 Q What is the significance of this excellent pressure
19 communication?

20 A It means we have a good reservoir rock with uniform
21 permeability.

22 If any of these wells had encountered lower
23 permeabilities, their initial pressures would have been
24 much higher than their offset wells and could have even
25 approached the original pressure.

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Secondly, I believe the significance of the good rock and fluid properties and the excellent pressure communication means we can efficiently drain 80 acres with one well.

Q Mr. Melnar, let's continue to the next three exhibits which would be Exhibits 13, 14 and 15. Please identify those and state their relevance to the application.

A Exhibits 13, 14 and 15 are graphical presentations of the results of the study to determine the effect of 40-acre development with 100 barrels of oil per day per well allowable versus 80-acre development and 200 barrels of oil per day per well allowable on production performance and ultimate recoveries.

To perform this study, we analyzed a typical 160-acre section of the reservoir, using a two dimensional three-phase reservoir model computer program. The data required to make this analysis was PVT data, porosity, permeability, net pay, saturations, et cetera. All of this data was measured, was obtained by actual measurements on reservoir rock and fluid properties.

Now, Exhibit 13 shows the pressure and cumulative productive performance versus time. The 80-acre development and 200 barrels of oil per day per well allowable case is shown by a solid line.

The 40-acre spacing case is shown by a dashed line,

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1 and this same nomenclature is used for these next three
2 exhibits.

3 Referring to the bottom-hole pressure curves, the
4 lower curves, you will note that for the first one and
5 one-half years, the bottom-hole pressures are approximately
6 the same for both cases. Thereafter, they begin to
7 diverge. The middle curves are plots of cumulative oil
8 production versus time. Again, we see that the performance
9 on either spacing is the same for the first one and one-
10 half years.

11 These curves also show that at depletion, the 160-
12 acre tract on 40-acre development would recover 266,000
13 barrels of oil. Cumulative oil recovery on the 80-acre
14 spacing is approximately the same or 260,000 barrels of
15 oil.

16 The upper set of curves are a plot of cumulative gas
17 performance versus time. Again, we see that the
18 performance on either spacing is the same for the first
19 one and one-half years, and ultimately, is a slightly
20 high recovery for the 40-acre case.

21 The next exhibit, Exhibit 14 shows the gas-oil ratio
22 and pressure as a function of time. The lower curves are
23 a plot of pressure versus time and are the same as shown
24 on the previous exhibit.

25 The upper set of curves are a plot of gas-oil ratio

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1 for the two cases. For both the 40-acre and 80-acre
2 case, gas-oil ratios are approximately the same for the
3 first one year and eight months.

4 During this time, the gas-oil ratios increased
5 from 1000 cubic feet per barrel to 2700 cubic feet per
6 barrel.

7 The curves also show that it will take one year and
8 five months for the gas-oil ratio for either case to
9 reach 2001.

10 At depletion, ratio for both cases is approximately
11 7000 cubic feet per barrel.

12 The next exhibit, Exhibit 15, shows bottom-hole
13 pressure and gas-oil ratio as a function of cumulative
14 oil recovery. As would be expected from analyzing the
15 past two exhibits, the bottom-hole pressure and gas-oil
16 ratio performance versus cumulative oil recovery are
17 approximately the same for both the 40-acre and 80-acre
18 development.

19 Q Mr. Melnar, would you please summarize then the
20 significance of the last three exhibits.

21 A The model study has shown that for a 40-acre, 100 barrels
22 of oil per day per well development, versus 80-acre,
23 200 barrels of oil per day per well development, the
24 performance for the first one and one-half years is
25 almost identical.

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Also, as would be expected from this type of reservoir, the ultimate recoveries are almost identical.

The actual numbers show the 40-acre case recovering one-half of one percent more of the oil in place or 6000 barrels of oil in the 80-acre case. This is on 160 acres.

Q How many additional wells do you require for 40-acre development?

A 17.

Q You testified that an additional recovery of one-half of one percent would result from a 40-acre development.

What would be the economic consequences of this additional drilling?

A The economic significance of the additional development is shown as Exhibit 16. You can say it would take 17 additional wells. These wells would have a total primary oil recovery of 51,000 barrels of oil or a net, after royalty, of 41,820 barrels, for an investment of \$858,900.

This is a cost of \$20.50 per barrel.

The net income before federal income tax would be at \$112,000 for a net loss of \$746,900.

Q Do you believe that the development on 40-acre spacing would result in economic waste?

A Yes. It is economic waste because it requires the drilling of unnecessary wells and diverts funds which

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1 otherwise could be invested in finding and developing
 2 additional reserves which are needed to meet future
 3 energy requirements.

4 For example, Tenneco has under lease in the immediate
 5 area, over 600,000 acres in which these funds could be
 6 utilized for exploratory drilling.

7 Q And all the wells in the field produce, of course, an
 8 allowable of 200 barrels of oil a day per 80 acres?

9 A Yes. All except Santa Fe Number 9 which is on the edge
 10 of the field and it is limited in capacity.

11 Q Please identify Exhibit 17 and explain its significance.

12 A Exhibit 17 shows the productivity index; that is, two
 13 barrels of production per day per psi drawdown for six
 14 wells that geographically cover the Lone Pine field.

15 As you can see, the psi's are all greater than one, and
 16 range from 1.07 barrels per day per psi on the
 17 Don-ne-pah Number 2, to 2.45 barrels per day per psi in
 18 the Kagoso Number 1.

19 This means that for a well to produce at 200 barrels
 20 of oil per day allowable, the pressure drawdown will
 21 range from only 82 psi to 187 psi, and this is not an
 22 excessive drawdown.

23 Q How much gas, at present, is produced per day?

24 A Approximately one and one-half million cubic feet per day.

25 Q How much gas would be produced if the field were

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1 entirely developed on 80-acre spacing with double
2 allowable?

3 A Approximately three million cubic feet per day.

4 Q Well then, how much gas would be produced if it were
5 developed on 40-acre spacing?

6 A Based on past testimony, it would be approximately the
7 same or three million cubic feet per day.

8 MR. PORTER: That's for the pool?

9 THE WITNESS: For the pool, yes, sir.

10 Q Now, there's no market for the gas, is that correct?

11 A No, sir. No market.

12 Q How far away is the nearest pipeline?

13 A The nearest pipeline is approximately 22 miles from the
14 field.

15 Q Does Tenneco have any plans for the beneficial use of
16 this gas?

17 A Yes, we do. Our plans are to unitize the pools as soon
18 as possible and initiate pressure maintenance operations.
19 Based on our studies to date, it appears that gas
20 reinjection will result in the highest ultimate recovery.

21 We plan to call a meeting of the working interest
22 owners in the pool within 30 days to discuss unitization
23 and pressure maintenance.

24 We plan to unitize and initiate gas reinjection
25 before the end of the year. In addition, we are

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1 investigating the economic feasibility of a gasoline
 2 plant and a gas line from the area. We are presently
 3 negotiating with a potential gas purchaser on possible
 4 rates of take.

5 Q What pool rules do you propose?

6 A One, provision for 80-acre spacing units consisting of
 7 two contiguous governmental quarter quarter sections,
 8 with no more than two spacing units per governmental
 9 quarter section, with provision for nonstandard proration
 10 units where the unorthodox size or shape of tract is due
 11 to variation in the legal subdivision of the United
 12 States Public Land Survey.

13 Two, each well will be located within 330 feet of
 14 the exterior line of the quarter quarter section.

15 Three, a standard 80-acre proration unit shall be
 16 assigned a 200 percent allowable factor with provision
 17 that the allowable assigned to a nonstandard proration
 18 unit shall bear the same ratio to the standard allowable
 19 as the acreage in such nonstandard unit bears to the
 20 80-acre unit.

21 Four, limiting gas-oil ratio of 2000 to one.

22 Five, rules and regulations to be effective for a
 23 period of one year from date of order.

24 Q Do you believe that the development of the pool on the
 25 basis recommended by Tenneco will prevent waste and

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1 protect correlative rights of all the parties involved?

2 A Yes, I do.

3 Q Do you have anything further you'd like to add to your
4 testimony?

5 A No.

6 Q Were Exhibits 8 through 17 prepared by you or under
7 your direction?

8 A Yes, they were.

9 MR. BATEMAN: If the Commission please, I offer at
10 this time Exhibits 1 through 17.

11 MR. PORTER: Exhibits 1 through 17 will be admitted.

12 (Whereupon, Applicant's Exhibits
13 1 through 17 were duly admitted
into evidence.)

14 MR. PORTER: At this time, I'd like to ask, does
15 anyone else desire to present testimony in this case today?

16 We'll take a very short recess.

17 (Whereupon, the hearing stood
18 in a brief recess.)

19 MR. PORTER: The hearing will come to order, please.
20 The witness is now available for cross examination, if anyone
21 has anything. Mr. Utz.

22 Oh, did you have a question?

23 MR. COOLEY: I'll accede to Mr. Utz. I do have
24 some questions, Mr. Commissioner.

25 MR. PORTER: Since I called Mr. Utz, I'll start

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1 with him.

2 CROSS EXAMINATION

3 BY MR. UTZ:

4 Q Mr. Melnar, your Exhibit Number 7, I gather, is the
5 result of several cores in the field.

6 A Yes. That's based on three or four cores, three or four
7 wells which we have cored.

8 Q You did core three or four wells?

9 A Yes, we did.

10 Q How many? Three, or four?

11 A I think it's shown on Exhibit Number 9. We cored one,
12 two, three, four wells.

13 MR. UTZ: Well, that answers my question. That's
14 all the questions I have.

15 MR. PORTER: Mr. Cooley.

16 MR. COOLEY: May it please the Commission, I'm
17 appearing in this case on behalf of Beard Oil Company and
18 Gilbert S. Maxwell, both operators in this pool. I would
19 request permission to cross examine this witness.

20 MR. PORTER: Yes, sir. You may proceed.

21 CROSS EXAMINATION

22 BY MR. COOLEY:

23 Q Mr. Melnar, at the opening of this case, some opening
24 remarks were made by your counsel wherein reference was
25 made to off-pattern well locations. Would you identify

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1 those locations on one of your exhibits, say, possibly
2 your Exhibit Number 10.

3 A Okay. These off-pattern wells would be Maxwell's
4 Bah-E Number 2, Beard's Desh-E-P-Henio Number 2, and
5 Beard's Toledo Number 1.

6 Q By referring to these wells as off-pattern wells, what
7 was your understanding of this nomenclature by reference?
8 Was this simply that they were contrary to the fixed
9 pattern that was proposed by the original application?

10 A Yes, sir.

11 Q At the time they were drilled, however, they were
12 drilled in accordance with the then existing regulations
13 of the Oil Conservation Commission, were they not?

14 A Yes, sir.

15 Q Would you state the name or names of the offset operators
16 to these wells.

17 A The offset operator of all these wells is Tenneco Oil
18 Company.

19 Q In your opinion --

20 A And, let's see -- that would be all. Just Tenneco.
21 Just Tenneco Oil Company, yes, sir.

22 Q Just Tenneco. In your opinion, would the fact that these
23 wells were drilled in a different pattern than those
24 drilled by Tenneco in any way adversely affect the
25 correlative rights of Tenneco Oil Company?

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1 A I wouldn't think so.

2 Q In your opinion, will the 80-acre tracts which are

3 dedicated to these wells be efficiently and effectively

4 drained by these wells?

5 A I think they will.

6 Q In your opinion, is there any reason for purposes of

7 correlative rights to restrict or otherwise penalize

8 these wells because of their locations?

9 A As long as they're just -- as long as there's only one

10 well per 80 acres, I wouldn't think so.

11 Q Then your answer to that question is "No"?

12 A Yes, is "No," that's right.

13 MR. COOLEY: No further questions.

14 MR. PORTER: Does anyone else have a question?

15 Mr. Kendrick, I believe you had some information to make a

16 statement, but you were not going to ask any further questions

17 of the witness?

18 MR. KENDRICK: No.

19 MR. PORTER: Then the witness may be excused and

20 we'll recognize Mr. Kendrick. As I indicated, he's about to

21 make a statement.

22 MR. KENDRICK: Mr. Arnold at the Aztec office and I

23 have discussed this at length. We have no objection to the

24 80-acre spacing.

25 We do object to the allowables being increased from

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1 100 barrels per day up to 200 barrels per day until such time
 2 as gas going back to the ground or secondary recovery or
 3 maintenance program is initiated because at the current rate of
 4 gas production as testified here, approximately one billion
 5 feet of gas would be lost in the period of a year. And we'd
 6 like to call the Commission's attention to the fact that along
 7 the east side of Sections 31 and 24 in Township 17 North,
 8 Range 9 West, there's a series of ten or eleven acre lots
 9 which would be added to the 80-acre tracts in those sections
 10 along the east side.

11 MR. PORTER: What size lots are those?

12 MR. KENDRICK: Ten and eleven acres, each.

13 MR. PORTER: So you'd have about 90 to 91 acres?

14 MR. KENDRICK: Providing the dedication was the
 15 north half or the south half of the quarter section because
 16 the east section would be two forty plus two lots, which
 17 would approximate a hundred acres.

18 MR. PORTER: I see. Is there any reaction from
 19 anyone here to this statement of Mr. Kendrick's, as far as
 20 restriction of allowables until such time as pressure
 21 maintenance might be instituted?

22 MR. MORRIS: Mr. Porter.

23 MR. PORTER: Mr. Morris.

24 MR. MORRIS: I'm Richard Morris of Montgomery,
 25 Federici, Andrews, Hannahs & Morris, Santa Fe, appearing

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1 on behalf of Tesoro Petroleum Corporation. We support the
2 application of Tenneco Oil Company for 80-acre proration
3 units and for flexible well location requirements.

4 I would like to inquire what type of restriction
5 Mr. Kendrick had in mind with respect to the allowables.

6 MR. KENDRICK: We'd like to maintain the present
7 rate at 100 barrels per day until such time as the unitization
8 can be accomplished and the injection wells either converted
9 or drilled and injection started on it so that the gas can
10 be recycled rather than lose a billion feet of gas and, if
11 it takes a year, we'll still lose a half billion feet accord-
12 ing to the testimony in this case.

13 MR. PORTER: Now, we'll put Mr. Kendrick on the
14 stand and swear him in if some of you would like to cross
15 examine him as to how he arrived at that.

16 MR. BATEMAN: If the Commission please, Mr. Wayne
17 Nance would like to make a statement in reply.

18 MR. NANCE: I'm Wayne Nance, Production Superintendent
19 for Tenneco in Denver. I'd like to comment on Mr. Kendrick's
20 suggestion as to the restricted allowable for 80-acre spacing.

21 Tenneco has no serious objections to this, although
22 we feel like the testimony that was entered in the case here
23 today shows that there will be no appreciable damage to the
24 reservoir for a period of one year which is the time we have
25 requested temporary spacing order, and we also believe that

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1 this is probably premature and not necessary at this time,
 2 that we could take this step at such time as the field gas
 3 production might increase to a rate which would be excessive,
 4 and we could curtail at whatever rate, to conserve the
 5 reserves, both oil and gas. The value of the gas, at the
 6 rate that Mr. Kendrick indicated, would be approximately
 7 \$200,000, and this is not sufficient to build a gas line --

8 MR. PORTER: Twenty-seven --

9 MR. NANCE: -- in this area at this time.

10 MR. PORTER: 27, 22 miles?

11 MR. NANCE: 27 miles.

12 MR. PORTER: I'd like to ask Mr. Kendrick, how did
 13 you arrive at this figure of a billion cubic feet loss and
 14 over what period of time are you talking about?

15 MR. KENDRICK: Mr. Melnar testified that the
 16 current rate of production at approximately one and a half
 17 million feet per day was being vented at this time. If we
 18 double the allowable, three million feet per day would be
 19 vented, and over a period of a little over 300 days, this
 20 amounts to a billion feet of gas.

21 MR. PORTER: You're talking about helium?

22 MR. KENDRICK: Yes. It's not that we wish to
 23 curtail production here. What we wish to do is expedite
 24 time or cause Tenneco to expedite time in getting the unit
 25 started.

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1 MR. PORTER: In other words, you were using the
2 figures he gave to arrive at your total, what you thought
3 might be wasted?
4 MR. KENDRICK: Yes, according to the testimony.
5 MR. PORTER: Mr. Cooley, I believe you have a
6 comment.
7 MR. COOLEY: May it please the Commission, both
8 Beard Oil Company and Gilbert S. Maxwell fully support the
9 application of Tenneco in this case for 80-acre spacing with
10 flexible wells locations. Furthermore, we have no serious
11 objection if the Commission finds that it will be wasteful
12 to increase the allowable to 200 barrels at this time to
13 restrict the allowable as suggested by Mr. Arnold and Mr.
14 Kendrick.
15 MR. PORTER: May I ask Mr. Nance -- well, does that
16 conclude your statement?
17 MR. COOLEY: Yes, sir.
18 MR. PORTER: How long do you anticipate it might
19 take you to communitize and start your injection program?
20 MR. NANCE: We feel like this can be accomplished
21 in eight months to a year, given the concerted all-out effort
22 and cooperation of all of the bodies that -- well, operators
23 and regulatory bodies that would be affected by the
24 unitization in the field.
25 MR. PORTER: Thank you. Mr. Utz.

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1 MR. UTZ: Well, I think, Mr. Porter, we should
2 determine whether or not they intend to reinject some of this
3 gas before they can unitize. Can you answer that question,
4 Mr. Nance?

5 MR. NANCE: Before unitization?

6 MR. UTZ: Yes.

7 MR. NANCE: I can only state that we have looked
8 into it, or are considering the possibility of storage of
9 gas in some of the gas zones. If it becomes excessive during
10 the period of time in which were awaiting a formal approval
11 of the unit --

12 MR. UTZ: Do you --

13 MR. NANCE: -- put it back into the reservoir.

14 MR. UTZ: Do you know at this time whether or not
15 you have some storage area in this vicinity?

16 MR. NANCE: Well, there's a storage area in the
17 A Zone in the Lone Pine Dakota area.

18 MR. UTZ: How long would it take you to inject from
19 this well?

20 MR. NANCE: Well, it would probably take, depending
21 on delivery of compressors and working out satisfactory
22 agreements of gathering the gas and putting it back in, I
23 would say it would take four to six months.

24 MR. PORTER: Is there anything further that anyone
25 would like to offer in the case?

1 MR. COOLEY: My only comment, Mr. Commissioner,
2 was as far as Beard Oil Company and Gilbert S. Maxwell are
3 concerned, I see no reason why the pool rules should be
4 temporary.

5 MR. PORTER: For the one-year period?

6 MR. COOLEY: I see nothing to be gained by
7 temporary rules in this particular pool, except as it would
8 necessitate another hearing on the part of the Commission and
9 the parties involved a year hence.

10 MR. PORTER: Of course, the Applicant has requested
11 temporary rules in the case. I don't know whether the
12 Applicant objects to temporary rules or not.

13 MR. NANCE: May it please the Commission, I might
14 comment on this.

15 MR. PORTER: Yes, sir.

16 MR. NANCE: The purpose of requesting temporary
17 rules is primarily to give the Commission a fixed review
18 period in which to review the conservation of the resources
19 that we have here and give all parties an opportunity to
20 review it at a later date.

21 MR. PORTER: This has been done many times on other
22 pools, as you know.

23 MR. NANCE: And not that the Commission needs
24 temporary rules to do this, but that was the purpose, is just
25 so that other operators would know that there would be an

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1 opportunity to review the total field performance at the end
2 of the year. Also, our unitization happens at that time.

3 MR. KENDRICK: Mr. Porter, may I ask Mr. Nance a
4 question, please.

5 MR. PORTER: Yes.

6 MR. KENDRICK: Is it your intention, your requesting
7 these pool rules that only one well be drilled on each 80-acre
8 tract, that it be restricted to one well per tract?

9 MR. NANCE: That was indicated, I believe, in some
10 of the testimony. I don't believe that was our official intent,
11 to restrict the number of wells per 80 acres, but restrict
12 the allowable.

13 MR. PORTER: In other words, as far as Tenneco is
14 concerned, if you drilled two wells, you'd still be restricted
15 to the one allowable from the 80 acres --

16 MR. NANCE: Yes, sir.

17 MR. PORTER: -- which, if it were restricted to 100
18 barrels for any reason for a temporary period, then they
19 would get 50 barrels each?

20 MR. NANCE: Yes, sir.

21 MR. PORTER: That's the main idea?

22 MR. NANCE: Yes, sir.

23 MR. PORTER: Is there any other comments that
24 anyone would like to make?

25 MR. BATEMAN: No further comment.

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1 MR. PORTER: Gentlemen, since there's a quorum
2 present, I'm going to depart from the usual custom of taking
3 this entire matter under advisement which has been heard once
4 before. It's announced that the quorum here has agreed that
5 we will allow the 80-acre flexible spacing pattern for an
6 indefinite period; if the Commission feels that the matter
7 should be brought back if conditions indicate this, we can,
8 at any time, as you know.

9 As to the matter of allowables, the Commission would
10 like to give that some further consideration, and the reason
11 I'm announcing this here now is so that all interested parties
12 in this will know that the 80-acre pattern will exist from
13 this day forward.

14 Is there any question about the ruling, the
15 80-acre flexible pattern?

16 MR. COOLEY: Flexible pattern is what?

17 MR. PORTER: Yes. There was one allowable to each
18 40 acres, whatever that allowable may be. We'd like to give
19 some consideration to the matter that Mr. Kendrick has
20 brought to our attention prior to issuing a formal order.

21 MR. COOLEY: May I ask the Commissioner, in light
22 of Mr. Melnar's testimony that in his opinion the correlative
23 rights of Tenneco Oil are not adversely affected by the
24 particular wells that were brought to our attention and were
25 offered the proposed fixed pattern, I would assume that

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1 silence on the part of the Commission means that these wells
2 will not be penalized.
3 MR. PORTER: There will not be restriction for
4 allowables, or regardless of the storage unit to be drilled on
5 If there's no further questions concerning the
6 order or the ruling, the hearing is adjourned.
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1 STATE OF NEW MEXICO)
 2 COUNTY OF BERNALILLO) ss

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

9
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 11 Court Reporter

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BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF TENNECO OIL COMPANY FOR THE
CREATION OF A NEW POOL, ADOPTION
OF POOL RULES AND FOR ASSIGNMENT
OF A DISCOVERY ALLOWABLE, MCKINLEY
COUNTY, NEW MEXICO

No. 4457

APPLICATION FOR HEARING DE NOVO

Comes now Tenneco Oil Company and for its application applies
for a hearing de novo upon its original application herein and
makes its application in accordance with Article 65-3-11.1 N.M.S.A.
(1953) and Oil Conservation Commission Rule No. 1220, and in
support thereof would show the Commission:

1. That the Applicant herein is adversely affected by the
Commission's Order No. R-4084 issued on December 22, 1970. A true
copy of Order No. R-4084 is attached hereto marked Exhibit A.

WHEREFORE, the Applicant prays that its original application
be set for hearing de novo at the earliest possible date, and
that after due notice of hearing as required by law, the Commission
approve the original application in its entirety.

Respectfully submitted

TENNECO OIL COMPANY

By *Kenneth A. Luman*
For White, Gilbert, Koch & Kelly
P. O. Box 787
Santa Fe, New Mexico 87501
Attorneys for Applicant

WHITE, GILBERT, KOCH & KELLY
ATTORNEYS AT LAW
P. O. BOX 787
SANTA FE, NEW MEXICO 87501

DOCKETED

2-5-77

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4457
Order No. R-4084
NOMENCLATURE

APPLICATION OF TENNECO OIL COMPANY
FOR THE CREATION OF A NEW POOL,
ASSIGNMENT OF A DISCOVERY ALLOWABLE,
AND PROMULGATION OF SPECIAL POOL
RULES, MCKINLEY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:30 a.m. on December 16, 1970, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 22nd day of December, 1970, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Tenneco Oil Company, seeks the creation of a new pool for the production of oil from the "D" zone of the Dakota formation, and the assignment of an oil discovery allowable to the discovery well.

(3) That the applicant further seeks the promulgation of special rules and regulations governing said pool, including a provision for 80-acre spacing units, with wells to be drilled in either the northwest or southeast quarter-quarter sections.

(4) That the evidence presently available indicates that the Tenneco Oil Company Don Ne Pah Well No. 1, located in Unit D

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CASE No. 4457

Order No. R-4084

of Section 18, Township 17 North, Range 8 West, NMPM, McKinley County, New Mexico, having its top perforations at 2827 feet, has discovered a separate common source of supply which should be designated the Lone Pine-Dakota "D" Oil Pool; that the vertical limits of said pool should be the "D" zone of the Dakota formation as found in the interval from 2792 feet to 2834 feet on the log of the aforesaid Don Ne Pah Well No. 1, and that the horizontal limits of said pool should comprise the following-described lands:

McKINLEY COUNTY, NEW MEXICO
TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM
Section 18: N/2, SW/4, and W/2 SE/4

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM
Section 13: NE/4 and S/2
Section 24: N/2 NE/4

(5) That the above-described discovery is the deepest oil production in McKinley County.

(6) That the discovery well for said pool, the aforesaid Tenneco Oil Company's Don Ne Pah Well No. 1, is entitled to and should receive a bonus discovery oil allowable in the amount of 28,270 barrels, based upon the top perforations in said well at 2827 feet, to be assigned over a two-year period.

(7) That the applicant has not established that the wells in the subject pool can efficiently and economically drain and develop 80 acres or that the establishment of special rules and regulations, even on a temporary basis, would prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, prevent reduced recovery which might result from the drilling of too few wells, or otherwise prevent waste or protect correlative rights.

(8) That the applicant's request for the promulgation of special rules for the subject pool should be denied.

IT IS THEREFORE ORDERED:

(1) That a new pool in McKinley County, New Mexico, classified as an oil pool for the production of oil from the "D" zone

-3-

CASE No. 4457

Order No. R-4084

of the Dakota formation, is hereby created and designated the Lone Pine-Dakota "D" Oil Pool, with vertical limits comprising the "D" zone of the Dakota formation as found in the interval from 2792 feet to 2834 feet on the log of the Tenneco Oil Company Don Ne Pah Well No. 1, located in Unit D of Section 18, Township 17 North, Range 8 West, NMPM McKinley County, New Mexico, and horizontal limits comprising the following-described area:

McKINLEY COUNTY, NEW MEXICO
TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM
Section 18: N/2, SW/4, and W/2 SE/4

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM
Section 13: NE/4 and S/2
Section 24: N/2 NE/4

(2) That the discovery well, the aforesaid Tenneco Oil Company Don Ne Pah Well No. 1, is hereby authorized an oil discovery allowable of 28,270 barrels to be assigned to said well at the rate of 39 barrels per day in accordance with Rule 509 of the Commission Rules and Regulations.

(3) That the applicant's request for the promulgation of special rules for the above-described pool is hereby denied.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

ALEX J. ARMIJO, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

esr/

Case 4457

Heard 11-18 & 12-16-70
Rec. 12-17-70.

Grant Tennessee's request for a discovery allowable for their - Rose - me - park # 1 - D - 18 - 17 N - 8 W and a new pool designation for the pool to be named Lone Pine - Dakota oil pool.

Create pool horizontal limits as follows:

17 N - 18 W.

Sec. 18 - N/2, SW/4, W/2 ^{SE} ~~SW~~/4

17 N - 9 W.

Sec. 13. NE/4, S/2

Sec. 24 N/2 NE/4

The request for 80 Ac spacing should be denied. Operator ~~failed~~ to show that 1 well can effectively drain 80 acres. or that drilling on 40 acres was uneconomical.

Rep of Ref on Dec. well 2827!
Pool shall be developed on statewide 40 ac. units. + 330 spacing, 2000:1 G&P.

Thos. O. W.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE
APPLICATION OF TENNECO OIL
COMPANY FOR THE CREATION OF
A NEW POOL, ADOPTION OF POOL
RULES, AND FOR ASSIGNMENT OF
A DISCOVERY ALLOWABLE, McKinley
COUNTY, NEW MEXICO

No. 445-7

76 OCT 15 PM 3:1

Comes now Tenneco Oil Company and for its application applies
to the Oil Conservation Commission for creation of a new oil pool,
for adoption of temporary pool rules providing for 80 acre spacing
and proration units, and of application of a discovery allowable
to its discovery well, and in support thereof would show the
Commission:

1. That the area proposed for the new pool is located
in McKinley County, New Mexico, and is described as follows:

In Township 17 North, Range 8 West, N.M.P.M.

Section 7	South half
Section 18	All
Section 17	West Half
Section 19	North Half

In Township 17 North, Range 9 West N.M.P.M.

Section 12	South Half Southeast Quarter
Section 13	All
Section 24	North half

2. That a discovery well, Tenneco's Don Ne Pah, has been
completed as a productive oil well in the Dakota "D" zone, said
well being located in the ^{NW}NE 1/4 of the ^{NW}NE 1/4 of Section 18 T 17 N
R 8 W, N.M.P.M.

3. That application is hereby made for designation of the
aforesaid area as the "Lone Pine Pool" and for adoption of the
temporary pool rules to apply to production from the Dakota "D"
zone only and to include the following:

(a) Temporary 80 acre spacing on a fixed basis with
locations to be drilled on the northwest and southeast corners of
quarter sections.

(b) Double allowable for each well on 80 acre fixed
spacing.

WHITE, GILBERT, KOCH & KELLY
ATTORNEYS AT LAW
P. O. BOX 787
SANTA FE, NEW MEXICO 87501

FILED DOCKET MAILED

12-11-76 Done 11-5-70

1 (c) A gas-oil ratio of 2000/1 as a limiting factor in
2 classification for an oil well.

3 (d) Adoption of the foregoing field rules on a temporary
4 basis for one (1) year.

5 4. That further application is hereby made for the assignment
6 of a discovery allowable in accordance with the Commission Rule 509
7 to Applicant's Don Ne Pah well.

8 5. Standard exhibits will be available at the time of hearing
9 hereon, but are unavailable for submission with this application.

10 WHEREFORE, applicant prays that this application be set for hear-
11 ing at the earliest possible date, and that after due notice and
12 hearing as required by law, the Commission approve this application
13 in its entirety.

14
15 Respectfully submitted

16 TENNECO OIL COMPANY

17
18 By Kenneth Bateman
19 White, Gilbert, Koch & Kelly
20 P. O. Box 787
21 Santa Fe, New Mexico
22 Attorneys for Applicant
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WHITE, GILBERT, KOCH & KELLY
ATTORNEYS AT LAW
P. O. BOX 787
SANTA FE, NEW MEXICO 87501

DRAFT

GMH/esr

ASD

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

RECORDS CENTER

CASE No. 4457

Order No. R-
R-4084-A

JMH

APPLICATION OF TENNECO OIL COMPANY
FOR THE CREATION OF A NEW POOL,
ASSIGNMENT OF A DISCOVERY ALLOWABLE,
AND PROMULGATION OF SPECIAL POOL
RULES, MCKINLEY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing de novo at 9 a.m. on February 17, 1971, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission,"
and was continued to 9 a.m. on February 23, 1971

NOW, on this _____ day of _____, 1971, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That after an examiner hearing, Commission Order No. R-4084, dated December 22, 1970, was entered creating the Lone Pine-Dakota "D" Oil Pool in McKinley County, New Mexico, assigning an oil discovery allowable to the discovery well, and denying the applicant's request for the promulgation of special pool rules governing said pool.

(3) That the applicant, Tenneco Oil Company, requested and was granted a hearing de novo before the Oil Conservation Commission.

(4) ~~7~~ That the applicant, Tenneco Oil Company, seeks the creation of a new pool for the production of oil from the "D" zone of the Dakota formation, and the assignment of an oil discovery allowable to the discovery well.

(5) ~~8~~ That the applicant further seeks the promulgation of special rules and regulations governing said pool, including a provision for 80-acre spacing units, with wells to be drilled in either ~~the northwest or southeast~~ quarter-quarter sections.

(6) ~~9~~ That the evidence presently available indicates that the Tenneco Oil Company Don Ne Pah Well No. 1, located in Unit D

of Section 18, Township 17 North, Range 8 West, NMPM, McKinley County, New Mexico, having its top perforations at 2827 feet, has discovered a separate common source of supply which should be designated the Lone Pine-Dakota "D" Oil Pool; that the vertical limits of said pool should be the "D" zone of the Dakota formation as found in the interval from 2792 feet to 2834 feet on the log of the aforesaid Don Ne Pah Well No. 1, and that the horizontal limits of said pool should comprise the following-described lands:

McKINLEY COUNTY, NEW MEXICO
TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM
 Section 18: N/2, SW/4, and W/2 SE/4

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM
 Section 13: NE/4 and S/2
 Section 24: N/2 NE/4

(7) ~~10~~ That the above-described discovery is the deepest oil production in McKinley County.

(8) ~~11~~ That the discovery well for said pool, the aforesaid Tenneco Oil Company's Don Ne Pah Well No. 1, is entitled to and should receive a bonus discovery oil allowable in the amount of 28,270 barrels, based upon the top perforations in said well at 2827 feet, to be assigned over a two-year period.

(9) That the applicant has established that one well in the Lone Pine - Dakota "D" Oil Pool can efficiently and economically drain and develop 80 acres.

(10) That in order to prevent the economic loss caused by the drilling of an excessive number of wells, to prevent reduced recovery which might result from the drilling of too few wells, and to otherwise prevent waste and protect correlative rights, special rules and regulations

providing for 80-acre spacing units and the assignment of should be promulgated for the Lone Pine - Dakota "D" Oil Pool; that the rules should provide that a well may be drilled in either or both of the quarter-quarter sections; that and that a 40-acre proportional of 1.00 should remain in effect in the pool until such time as the pool has a gas gathering facility or the gas is being reinjected and thereafter an 80-acre proportional factor of 2.00.

- (11) That the special rules and regulations should provide for limited well location in order to assure orderly development of the pool and protect correlated rights.
(12) That Order No. 3-4084 should be superseded.

IT IS THEREFORE ORDERED:

(1) That a new pool in McKinley County, New Mexico, classified as an oil pool for the production of oil from the "D" zone

of the Dakota formation, is hereby created and designated the Lone Pine-Dakota "D" Oil Pool, with vertical limits comprising the "D" zone of the Dakota formation as found in the interval from 2792 feet to 2834 feet on the log of the Tenneco Oil Company Don Ne Pah Well No. 1, located in Unit D of Section 18, Township 17 North, Range 8 West, NMPM, McKinley County, New Mexico, and horizontal limits comprising the following-described area:

McKINLEY COUNTY, NEW MEXICO
TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM
Section 18: N/2, SW/4, and W/2 SE/4

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM
Section 13: NE/4 and S/2
Section 24: N/2 NE/4

(2) That the discovery well, the aforesaid Tenneco Oil Company Don Ne Pah Well No. 1, is hereby authorized an oil discovery allowable of 28,270 barrels to be assigned to said well at the rate of 39 barrels per day in accordance with Rule 509 of the Commission Rules and Regulations.

~~IT IS THEREFORE ORDERED~~

(3) That Special Rules and Regulations for the Lone Pine-Dakota "D" Oil Pool, McKinley County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
LONE PINE-DAKOTA "D" OIL POOL

RULE 1. Each well completed or recompleting in the Lone Pine-Dakota "D" Oil Pool or in the zone of the Dakota formation within one mile thereof, and not nearer to or within the limits of another designated Dakota "D" zone oil pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well shall be located on a standard unit containing 80 acres, more or less, consisting of the N/2, S/2, E/2, or W/2 of a governmental quarter section; provided, however, that nothing contained herein shall be construed as prohibiting the drilling of a well on each of the quarter-quarter sections in the unit.

RULE 3. The Secretary-Director of the Commission may grant an exception to the requirements of Rule 2 without notice and hearing when an application has been filed for a non-standard unit comprising a governmental quarter-quarter section or lot, or the unorthodox size or shape of the tract is due to a variation in the legal subdivision of the United States Public Land Surveys. All operators offsetting the proposed non-standard unit shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all offset operators or if no offset operator has entered an objection to the formation of the non-standard unit within 30 days after the Secretary-Director has received the application.

RULE 4. ~~Each well shall be located within 150 feet of the center of a governmental quarter-quarter section or lot.~~

RULE 5. The Secretary-Director may grant an exception to the requirements of Rule 4 without notice and hearing when an application has been filed for an unorthodox location necessitated by topographical conditions or the recompletion of a well previously drilled to another horizon. All operators offsetting the proposed location shall be notified of the application by registered or certified mail, and the application shall state that such notice has been furnished. The Secretary-Director may approve the application upon receipt of written waivers from all operators offsetting the proposed location or if no objection to the unorthodox location has been entered within 20 days after the Secretary-Director has received the application.

RULE 6. A standard proration unit (79 through 81 acres) shall be assigned a 80-acre proportional factor of 1.00 for allowable purposes, and in the event there is more than one well on an 80-acre proration unit, the operator may produce the allowable assigned to the unit from the wells on the unit in any proportion.

The allowable assigned to a non-standard proration unit shall bear the same ratio to a standard allowable as the acreage in such non-standard unit bears to 80 acres.

Rule 4. Each well shall be located no closer than 330 feet to a quarter-quarter section line nor closer than 660 feet to the nearest well drilling to or caprock of producing from the same pool.

Rule 6. If you are being reworked and therefore an 80-acre proportional factor of 2.00.

IT IS FURTHER ORDERED:

(1) That the locations of all wells presently drilling to or completed in the Lone Pine-Dakota "D" Oil Pool or in the "D" zone of the Dakota formation within one mile thereof are hereby approved; that the operator of any well having an unorthodox location shall notify the Aztec District Office of the Commission in writing of the name and location of the well on or before April 1, 1971.

(2) That, pursuant to Paragraph A. of Section 65-3-14.5, NMSA 1953, contained in Chapter 271, Laws of 1969, existing wells in the Lone Pine-Dakota "D" Oil Pool shall have dedicated thereto 80 acres in accordance with the foregoing pool rules; or, pursuant to Paragraph C. of said Section 65-3-14.5, existing wells may have non-standard spacing or proration units established by the Commission and dedicated thereto.

Failure to file new Forms C-102 with the Commission dedicating 80 acres to a well or to obtain a non-standard unit approved by the Commission within 60 days from the effective date of this order shall subject the well to cancellation of allowable. Until said Form C-102 has been filed or until a non-standard unit has been approved, and subject to said 60-day limitation, each well presently drilling to or completed in the Lone Pine-Dakota "D" Oil Pool or in the "D" zone of the Dakota formation within one mile thereof shall receive no more than one-half of a standard allowable for the pool.

(4) That Order No. R-4084, dated ~~and~~ December 22, 1970, is hereby superseded.

(5) ~~(3)~~ That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

BRUCE KING, Chairman

ALEX J. ARMIJO, Member

S E A L

A. L. PORTER, Jr., Member & Secretary

DRAFT

GMH/esr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

RECORDS CENTER

CASE No. 4457

Order No. R- 4084

NOMENCLATURE

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

ORDER OF THE COMMISSION

BY THE COMMISSION:

9:30

This cause came on for hearing at 9 a.m. on December 16, 1970,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this _____ day of December, 1970, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

(1) That due public notice having been given as required by
law, the Commission has jurisdiction of this cause and the subject
matter thereof.

(2) That the applicant, Tenneco Oil Company, seeks the
creation of a new pool for the production of oil from the "D"
zone of the Dakota formation, and the assignment of an oil
discovery allowable to the discovery well.

(3) That the applicant further seeks the promulgation of
special rules and regulations governing said pool, including
a provision for 80-acre spacing units, with wells to be drilled
in either the northwest or southeast quarter-quarter sections.

(4) That the evidence presently available indicates that
the Tenneco Oil Company Don Na Pah Well No. 1, located in Unit D

of Section 18, Township 17 North, Range 8 West, NMPM, McKinley County, New Mexico, having its top perforations at 2827 feet, has discovered a separate common source of supply which should be designated the Don Ne Pah - Dakota Pool; that the vertical limits of said pool should be the "D" zone of the Dakota formation as found in the interval from 2792 feet to 2834 feet on the log of the aforesaid Don Ne Pah Well No. 1, and that the horizontal limits of said pool should comprise the following-described lands:

McKINLEY COUNTY, NEW MEXICO
TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM

~~Section 7: S/2~~

~~Section 17: W/2~~

~~Section 18: N/2~~

~~Section 19: N/2~~

N/2, SW/4, W/2 SE/4

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM

~~Section 12: S/2 SE/4~~

~~Section 13: NW/4~~

~~Section 24: NE/4~~

NE/4 and S/2

(5) That the above-described discovery is the deepest oil production in McKinley County.

(6) (5) That the discovery well for said pool, the aforesaid Tenneco Oil Company's Don Ne Pah Well No. 1, is entitled to and should receive a bonus discovery oil allowable in the amount of 28270 barrels, based upon the top perforations in said well at 2827 feet, to be assigned over a two-year period.

(5) That the applicant has not established that the wells in the subject pool can efficiently and economically drain and develop 80 acres or that the establishment of special rules and regulations, even on a temporary basis, would prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, prevent reduced recovery which might result from the drilling of too few wells, or otherwise prevent waste or protect correlative rights.

(6) That the applicant's request for the promulgation of special rules for the subject pool should be denied.

IT IS THEREFORE ORDERED:

(1) That a new pool in McKinley County, New Mexico, classified as an oil pool for the production of oil from the "D" zone of the Dakota formation, is hereby created and designated the Rough Run - Dakota Oil Pool, with vertical limits comprising the "D" zone of the Dakota formation, ^{as found} in the interval from 2792 feet to 2834 feet ~~as found~~ on the log of the Tenneco Oil Company Don Ne Pah Well No. 1, located in Unit D of Section 18, Township 17 North, Range 8 West, NMPM, McKinley County, New Mexico, and horizontal limits comprising the following-described area:

McKINLEY COUNTY, NEW MEXICO
TOWNSHIP 17 NORTH, RANGE 8 WEST, NMPM

Section ~~7~~ ^{8/2}

Section ~~17~~ ^{11/2}

Section 18: ~~NE 1/4~~ ^{NE 1/4, SE 1/4, and NW 1/4 SE 1/4}

Section ~~19~~ ^{20/2}

TOWNSHIP 17 NORTH, RANGE 9 WEST, NMPM

Section ~~12~~ ^{13/2}

Section 13: ~~NE 1/4~~ ^{NE 1/4 and SE 1/4}

Section 24: ~~NE 1/4~~ ^{NE 1/4}

(2) That the discovery well, the aforesaid Tenneco Oil Company Don Ne Pah Well No. 1, is hereby authorized an oil discovery allowable of 28270 barrels to be assigned to said well at the rate of 39 barrels per day in accordance with Rule 509 of the Commission Rules and Regulations.

(3) That the applicant's request for the promulgation of special rules for the above-described pool is hereby denied.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove.