

Case No.

728

Application, Transcript,
Small Exhibits, Etc.

OIL CONSERVATION COMMISSION

P. O. BOX 871
SANTA FE, NEW MEXICO

November 18, 1958

C
O
P
Y

Mr. Garrett C. Whitworth
El Paso Natural Gas Company
P.O. Box 1492
El Paso, Texas

Dear Mr. Whitworth:

We enclose two copies of Order R-586-D, Order of Dismissal, issued November 18, 1958, by the Oil Conservation Commission in Case 728.

Very truly yours,

A. L. Porter, Jr.
Secretary - Director

bp
Encls.

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. 728
Order No. R-586-D

APPLICATION OF EL PASO NATURAL GAS
COMPANY FOR AN ORDER EXTENDING THE
VERTICAL LIMITS OF THE JUSTIS GAS
POOL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on
November 13, 1958, at Santa Fe, New Mexico, before the Oil
Conservation Commission of New Mexico, hereinafter referred to
as the "Commission."

NOW, on this 18th day of November, 1958, the Commission,
a quorum being present, having considered the application, the
evidence adduced 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, El Paso Natural Gas Company,
requested that Case No. 728 be dismissed without prejudice.


IT IS THEREFORE ORDERED:

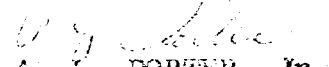
That Case No. 728 be and the same is hereby dismissed
without prejudice.

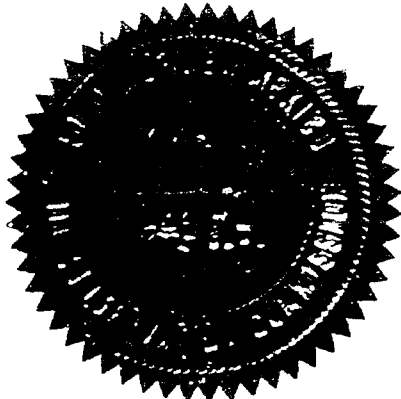
DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


EDWIN L. MCCREM, Chairman


MURRAY E. MORGAN, Member


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



El Paso Natural Gas Company
El Paso, Texas

November 6, 1958

case file

Mr. A. L. Porter, Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Re: Case No. 728 - Regular
Hearing November 13, 1958

Dear Mr. Porter:

This case is our application to extend the vertical limits of the Justis Gas Pool to a datum 270 feet below the top of the Glorietta Formation. Our geologists are now of the opinion that this description of the proposed vertical limits is inadequate. In view of that, I hereby request that this case be dismissed without prejudice. El Paso Natural Gas Company will refile this application to extend the vertical limits of the Justis Gas Pool when an adequate description of such vertical limits has been determined.

Yours very truly,

Garrett C. Whitworth
Garrett C. Whitworth
Attorney

GCM:hsw

DOCKET: REGULAR HEARING NOVEMBER 13, 1958

Oil Conservation Commission 9 a.m. Mabry Hall, State Capitol, Santa Fe, NM

- ALLOWABLE: (1) Consideration of the oil allowable for December, 1958.
- (2) Consideration of the allowable production of gas for December, 1958, for six prorated pools in Lea County, New Mexico, and also presentation of purchasers' nominations for the six-month period beginning January 1, 1959; consideration of the allowable production of gas for seven prorated pools in San Juan and Rio Arriba Counties, New Mexico, for December, 1958.

NEW CASES

CASE 728: Application of El Paso Natural Gas Company for an order extending the vertical limits of the Justis Gas Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order extending the vertical limits of the Justis Gas Pool in Lea County, New Mexico, to a datum 270 feet below the top of the Glorieta formation. The vertical limits of the Justis Gas Pool, as presently designated, extend from the top of the Glorieta formation to a point 200 feet below the top of said formation.

CASES 1253 & 1254:

In the matter of the hearing ordered to be held by Order No. R-1011 to permit the operators in the Kemnitz-Wolfcamp Pool in Lea County, New Mexico, to appear and show cause why the Special Rules and Regulations set forth in said order should be continued in effect beyond December 31, 1958.

CASE 1544: In the matter of the hearing called on the motion of the Oil Conservation Commission at the request of certain operators in the Gallegos-Gallup Oil Pool in San Juan County, New Mexico, to permit any operator to appear and show cause why any well or wells in the Gallegos-Gallup Oil Pool should be granted an exception to the daily tolerance provisions of Rule 502 I (a) of the Commission Rules and Regulations.

CASE 1545: In the matter of the hearing called on the motion of the Oil Conservation Commission at the request of certain operators in the Verde-Gallup Oil Pool in San Juan County, New Mexico, to permit any operator to appear and show cause why any well or wells in the Verde-Gallup Oil Pool should be granted an exception to the daily tolerance provisions of Rule 502 I (a) of the Commission Rules and Regulations.

CASE 1499: Application of Sinclair Oil & Gas Company for a hearing de novo before the Oil Conservation Commission of New Mexico on its application for a non-standard gas proration unit. Applicant, in the above-styled cause, seeks an order authorizing a 240-acre non-standard gas proration unit in the Tubb Gas Pool comprising the SW/4 and the S/2 SE/4 Section 26, Township 21 South, Range 37 East, Lea County, New Mexico, said unit

CASE 1499 continued:

to be dedicated to applicant's J. R. Cone "A" Well No. 1 located 660 feet from the South and West lines of said Section 26.

CASE 1500: Application of Sinclair Oil & Gas Company for a hearing de novo before the Oil Conservation Commission of New Mexico on its application for a non-standard gas proration unit. Applicant, in the above-styled cause, seeks an order authorizing a 200-acre non-standard gas proration unit in the Blinebry Gas Pool comprising the SW/4 and SW/4 SE/4 Section 26, Township 21 South, Range 37 East, Lea County, New Mexico, said unit to be dedicated to applicant's J. R. Cone "A" Well No. 2 located 1980 feet from the South line and 660 feet from the West line of said Section 26.

CASE 1546: Southeastern New Mexico nomenclature case calling for an order for the creation of new pools and extension of existing pools in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico.

(a) Create a new gas pool for Seven Rivers production, designated as the Laguna-Seven Rivers Gas Pool, and described as:

TOWNSHIP 20 SOUTH, RANGE 35 EAST, NMPM
Section 11: NE/4

(b) Create a new oil pool for Pennsylvanian production, designated as the North Shoe Bar-Pennsylvanian Pool, and described as:

TOWNSHIP 16 SOUTH, RANGE 35 EAST, NMPM
Section 15: SE/4

(c) Extend the Acme Pool to include:

TOWNSHIP 8 SOUTH, RANGE 27 EAST, NMPM
Section 5: N/2

(d) Extend the Artesia Pool to include:

TOWNSHIP 18 SOUTH, RANGE 28 EAST, NMPM
Section 23: SE/4

(e) Extend the Blinebry Gas Pool to include:

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM
Section 32: SE/4

(f) Extend the Hare Pool to include:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
Section 1: S/2

- (g) Extend the Hump-Queen Pool to include:

TOWNSHIP 16 SOUTH, RANGE 34 EAST, NMPM
Section 8: S/2 NW/4

- (h) Extend the Jalmat Gas Pool to include:

TOWNSHIP 22 SOUTH, RANGE 35 EAST, NMPM
Section 3: SE/4
Section 10: SE/4

- (i) Extend the Kemnitz-Wolfcamp Pool to include:

TOWNSHIP 16 SOUTH, RANGE 34 EAST, NMPM
Section 22: NW/4

- (j) Extend the Milnesand-San Andres Pool to include therein:

TOWNSHIP 8 SOUTH, RANGE 34 EAST, NMPM
Section 23: NE/4

- (k) Extend the Tubb Gas Pool to include:

TOWNSHIP 22 SOUTH, RANGE 38 EAST, NMPM
Section 31: NE/4 & NE/4 SE/4

CASE 1547: Northwestern New Mexico nomenclature case calling for an order for the extension of existing pools in Rio Arriba and San Juan Counties, New Mexico.

- (a) Extend the Aztec-Pictured Cliffs Pool to include:

TOWNSHIP 30 NORTH, RANGE 10 WEST, NMPM
Section 36: W/2

- (b) Extend the South Blanco-Pictured Cliffs Pool to include:

TOWNSHIP 25 NORTH, RANGE 3 WEST, NMPM
Section 20: S/2
Section 21: N/2

TOWNSHIP 25 NORTH, RANGE 4 WEST, NMPM
All of Sections 9, 10 and 11
Section 14: All
Section 15: N/2 and SE/4
Section 18: N/2

- (c) Extend the Tapacito-Pictured Cliffs Pool to include:

TOWNSHIP 25 NORTH, RANGE 3 WEST, NMPM
Section 14: W/2

- (d) Extend the West Kutz-Pictured Cliffs Pool to include:

TOWNSHIP 29 NORTH, RANGE 13 WEST, NMPM

Section 20: SE/4

Section 21: SW/4

- (e) Extend the Angels Peak-Dakota Pool to include:

TOWNSHIP 26 NORTH, RANGE 10 WEST, NMPM

Section 2: NW/4

TOWNSHIP 27 NORTH, RANGE 10 WEST, NMPM

Section 35: SW/4

TOWNSHIP 28 NORTH, RANGE 10 WEST, NMPM

Section 27: W/2

Section 28: E/2

- (f) Extend the North Los Pinos-Dakota Pool to include:

TOWNSHIP 32 NORTH, RANGE 7 WEST, NMPM

Section 12: SW/4

- (g) Extend the Horseshoe-Gallup Oil Pool to include:

TOWNSHIP 31 NORTH, RANGE 16 WEST, NMPM

Section 32: SE/4

Section 33: SW/4 SW/4

- (h) Extend the Otero-Gallup Oil Pool to include:

TOWNSHIP 25 NORTH, RANGE 5 WEST, NMPM

Section 32: NW/4 NE/4

- (i) Extend the Verde-Gallup Oil Pool to include:

TOWNSHIP 31 NORTH, RANGE 15 WEST, NMPM

Section 26: SW/4

Section 27: SE/4

Section 35: NW/4

CONTINUED CASES

CASE 1522: Application of Lea County Drip Company, Inc. for the revision of certain of the Commission Statewide Rules and Regulations and for the revision of certain of the Commission forms. Applicant, in the above-styled cause, seeks an order to revise Rules 311, 312, 1116 and 1117 of the Commission Rules and Regulations, to replace the present Commission Form C-117 with two forms to be designated as C-117-A and C-117-B, and to revise Commission Form C-118.

CASE 1526: Northwestern New Mexico nomenclature case calling for an order for the extension of an existing pool in San Juan County, New Mexico.

-5-
Docket No. 31-58

(h) Extend the Angels Peak-Dakota Pool to include:

TOWNSHIP 26 NORTH, RANGE 10 WEST, NMPM

Section 2: NW/4

TOWNSHIP 27 NORTH, RANGE 10 WEST, NMPM

Section 35: SW/4

TOWNSHIP 28 NORTH, RANGE 10 WEST, NMPM

Section 27: W/2

Section 28: E/2

ir/

El Paso Natural Gas Company

El Paso, Texas. 11 1:19

October 13, 1953

Nov. Reg
Administrative
Topic

Mr. A. L. Porter, Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Dear Mr. Porter:

I have enclosed three copies of El Paso Natural Gas Company's application for an order revising and amending Order No. R-586 to provide for an extension of the vertical limits of the Justis Gas Pool, Lea County, New Mexico. We request that this matter be filed with the Commission and set for hearing.

Very truly yours,

Garrett C. Whitworth
Garrett C. Whitworth
Attorney

hsw

Encl.

last per.
at request of E.P.N.C.

Docket 11-3-53
11-3-53
BP

BEFORE THE OLD CONSERVATION COMMISSION OF THE
STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF EL PASO NATURAL GAS COMPANY
FOR AN ORDER REVISING AND AMENDING
ORDER NO. R-585 TO PROVIDE FOR AN
EXTENSION OF THE VERTICAL LIMITS OF
THE JUSTIS GAS POOL, LEA COUNTY,
NEW MEXICO

Case No. _____

A P P L I C A T I O N

TO THE HONORABLE COMMISSION:

COMES NOW El Paso Natural Gas Company, hereinafter
referred to as "Applicant", and alleges and represents:

I

That it is a Delaware corporation with a permit to
do business in the State of New Mexico;

II

That heretofore this Commission by Paragraph (3),
Order No. R-585, has established the vertical limits of the
Justis Gas Pool as extending from the top of the Glorieta
Formation to a point 200 feet immediately below the Glorieta
datum;

III

That it has drilled Carlson Federal No. 1-A and
No. 1-B wells in Section 25, Township 25 South, Range 37 East,
Lea County, New Mexico, and such wells are producing from and
below the vertical limits of the Justis Gas Pool although they
are bottomed in the Glorieta Formation;

IV

That all presently known Glorieta gas productive
sands should be within the vertical limits of the Justis Gas
Pool and the vertical limits of said Justis Gas Pool should be
extended from the top of the Glorieta Formation to a point 270

feet immediately below the Glorieta datum occurring at -1,055 feet in Applicant's said Carlson Federal No. 1-B Well to include all of such Glorieta gas productive sands;

V

That the granting of this application will prevent waste and will not prejudice or violate correlative rights; and

VI

That the Commission has jurisdiction to hear and determine this cause and the granting of such proposed amendment should be authorized.

WHEREFORE, Applicant respectfully requests that this matter be set for hearing before an examiner or, if an examiner hearing is not approved, then before this Commission as prescribed by law and that upon notice and hearing, the Commission issue its order extending the vertical limits of the Justis Gas Pool, Lea County, New Mexico, from the top of the Glorieta Formation to a point 270 feet immediately below the Glorieta datum occurring in Applicant's said Carlson Federal No. 1-B Well and such other and further relief to which Applicant may show itself justly entitled and the Commission deems advisable and appropriate in the premises.

Garrett C. Whitworth
Attorney for Applicant

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. 728
Order No. R-586

THE APPLICATION OF THE OIL
CONSERVATION COMMISSION UPON
ITS OWN MOTION FOR AN ORDER
AMENDING, REVISING OR ABROGATING
EXISTING RULES AND REGULATIONS OF
THE OIL CONSERVATION COMMISSION,
AND/OR PROMULGATING RULES AND
REGULATIONS, RELATING TO GAS POOL
DELINEATION, GAS PRORATION, AND
OTHER RELATED MATTERS, AFFECTING
OR CONCERNING THE TUBB, BYERS-
QUEEN, AND JUSTIS GAS POOLS, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on June 16, 1954, July 15, 1954, August 18, 1954 and September 16, 1954, at Santa Fe, New Mexico, and on October 20, 1954 at Hobbs, New Mexico, before the Oil Conservation Commission, hereinafter referred to as the "Commission".

NOW, on this 11th., day of April, 1955, the Commission, a quorum being present, having considered the records, evidence and testimony adduced and being fully advised in the premises,

FINDS:

(1) That due notice of the time and place of hearing and the purpose thereof having been given as required by law, the Commission has jurisdiction of this case and the subject matter thereof.

(2) That under date of January 1, 1950, the Commission issued its Order No. 850 creating the Justis Gas Pool, and that said Order No. 850 defined the horizontal and vertical limits thereof. That on February 17, 1953, the Commission issued Order No. R-264 creating the Tubb and Byers-Queen Gas Pools, and defining the horizontal and vertical limits of said gas pools. That by Order No. R-264 and subsequent orders the Commission extended the horizontal and vertical limits of the Justis Gas Pool. That by Order R-407 the vertical limits of the Tubb Gas Pool were extended.

(3) That under date of September 28, 1953, the Commission issued its Orders Nos. R-373, R-375, and R-376 and under date of November 10, 1953, the Commission issued its Orders Nos. R-373-A, R-375-A and R-376-A, providing rules, definitions and procedures to be followed in prorating gas in the Tubb, Justis, and Byers-Queen gas pools, respectively; and by subsequent orders issued after due notice and hearing, the Commission allocated production of gas in said pools commencing January 1, 1954.

(4) That the Tubb, Byers-Queen and Justis Gas Pools are separate gas reservoirs and should be defined vertically and horizontally as set forth in this order.

(5) That the producing capacity of the gas wells in the Tubb, Byers-Queen and Justis Gas Pools is greater than the market demand for gas from each of such pools.

(6) That in order to prevent waste it is necessary to allocate and prorate the gas production among the gas wells in the Tubb, Byers-Queen, and Justis Gas Pools in accordance with provisions of this order.

(7) That the protection and proper recognition of correlative rights as such rights are defined by Section 26 (h) Chapter 168, New Mexico Session Laws of 1949, require that the gas production from the Tubb, Byers-Queen and Justis Gas Pools be prorated, in accordance with the terms and provisions of this order.

(8) That the Rules and Regulations hereinafter set forth in this order are in all respects in the interests of conservation and provide for the allocation of the allowable production among the gas wells in the Tubb, Byers-Queen and Justis Gas Pools upon a reasonable basis and give appropriate recognition to correlative rights.

(9) That no evidence was presented to justify a change in the size of the standard gas well unit in the Tubb, Byers-Queen, or Justis Gas Pools from 160-acres.

(10) That in order to prevent waste and protect correlative rights, the special rules contained in this order should be adopted to govern the production from wells completed or recompleted in such a manner that the bore hole of the well is open in more than one common source of supply.

(11) That in order to prevent waste a "no-flare" rule should be adopted to prohibit the flaring, venting, or wasting of natural gas or any other type of gas in any of the gas pools referred to and affected by this order.

IT IS THEREFORE ORDERED:

(1) That the Tubb Gas Pool heretofore created, shall have vertical limits which extend from a point 100 feet above the "Tubb Marker" to a point 225 feet below the "Tubb Marker", as said marker is designated in Order R-464. The horizontal limits of the Tubb Gas Pool shall be the area as described in Exhibit "A", attached hereto and made a part hereof.

(2) That the Byers-Queen Gas Pool, heretofore created, shall have vertical limits which include all of the Queen formation. The horizontal limits of the Byers-Queen Gas Pool shall be the area as described in Exhibit "B", attached hereto and made a part hereof.

(3) That the Justis Gas Pool, heretofore created, shall have vertical limits which extend from the top of the Glorieta formation to a point 200 feet immediately below the Glorieta datum. The horizontal limits of the Justis Gas Pool shall be the area as described in Exhibit "C", attached hereto and made a part hereof.

(4) That special pool rules applicable to the Tubb Gas Pool be, and the same hereby are promulgated as follows:

**SPECIAL RULES AND REGULATIONS
FOR THE TUBB GAS POOL**

Well Spacing and Acreage Requirements for Drilling Tracts.

RULE 1. Any well drilled a distance of one mile or more outside the boundary of the Tubb Gas Pool shall be classified as a wildcat well. Any well drilled less than one mile outside the boundary of the Tubb Gas Pool shall be spaced, drilled, operated and prorated in accordance with the regulations in effect in the Tubb Gas Pool.

RULE 2. Each well drilled or recompleted within the Tubb Gas Pool on a standard proration unit after the effective date of this rule shall be drilled not closer than 660 feet to any boundary line of the tract nor closer than 330 feet to a quarter-quarter section line or subdivision inner boundary line. Any well drilled to and producing from the Tubb Gas Pool prior to the effective date of this order at a location conforming to the spacing requirements effective at the time said well was drilled shall be considered to be located in conformance with this rule.

RULE 3. The Secretary-Director of the Commission shall have authority to grant exception to the requirements of Rule 2 without notice and hearing where a verified application therefor has been filed in due form and the necessity for the unorthodox location is based on topographical conditions or is occasioned by the recompletion of a well previously drilled to another horizon.

Applicants shall furnish all operators within a 1980-foot radius of the subject well a copy of the application to the Commission, and applicant shall include with his application a list of names and addresses of all operators within such radius, together with a stipulation that proper notice has been given said operators at the addresses given. The Secretary-Director of the Commission shall wait at least 20 days before approving any such unorthodox location, and shall approve such unorthodox location only in the absence of objection of any offset operators. In the event an operator objects to the unorthodox location the Commission shall consider the matter only after proper notice and hearing.

RULE 4. The provisions of Statewide Rule 104, Paragraph (k), shall not apply to the Tubb Gas Pool located in Lea County, New Mexico.

GAS PRORATION

RULE 5. (a) The acreage allocated to a gas well for proration purposes shall be known as the gas proration unit for that well. For the purpose of gas allocation in the Tubb Gas Pool, a standard proration unit shall consist of between 158 and 162 contiguous surface acres substantially in the form of a square which shall be a legal subdivision (quarter-section) of the U. S. Public Land Surveys with a well located at least 660 feet from the nearest property lines;

(b) The allowable production from any non-standard gas proration unit as compared with the allowable production therefrom if such tract were a standard unit shall be in the ratio of the area of such non-standard proration unit expressed in acres to the area of 160 acres. Any gas proration unit containing between 158 and 162 acres shall be considered to contain 160 acres for the purpose of computing allowables.

(c) A non-standard gas proration unit of less than 160 acres may be formed after notice and hearing by the Commission, or by administrative approval under the provisions of Paragraph (d) of this Rule. Non-standard gas proration units of more than 160 acres may be formed only after notice and hearing by the Commission.

(d) The Secretary-Director of the Commission shall have authority to grant an exception to Rule 5 (a) without Notice and Hearing where a verified application has been filed in due form and where the following facts exist and the following provisions are complied with;

1. The non-standard gas proration unit consists of contiguous quarter-quarter sections and/or lots.

2. The non-standard gas proration unit lies wholly within a single governmental section.

3. The entire non-standard gas proration unit may reasonably be presumed to be productive of gas from the Tubb Gas Pool.

4. The length or width of the non-standard gas proration unit does not exceed 2640 feet.

5. The applicant presents written consent in the form of waivers from (a) all operators owning interests in the quarter section in which any part of the non-standard gas proration unit is situated and which acreage is not included in said non-standard gas proration unit, and (b) all operators owning interests within 1500 feet of the well to which such gas proration unit is proposed to be allocated.

6. In lieu of sub-paragraph 5 of this rule, the applicant may furnish proof of the fact that said offset operators were notified by registered mail of his intent to form such non-standard gas proration unit. The Secretary-Director of the Commission may approve the application if, after a period of 30 days following the mailing of said notice, no operator has made objection to formation of such non-standard gas proration unit.

RULE 6. (a) The Commission after notice and hearing, shall consider the nominations of gas purchasers from the Tubb Gas Pool and other relevant data and shall fix the allowable production of the Tubb Gas Pool.

RULE 7. At least 30 days prior to the beginning of each gas proration period the Commission shall hold a hearing after due notice has been given. The Commission shall cause to be submitted by each gas purchaser its "Preliminary Nominations" of the amount of gas which each in good faith actually desires to purchase within the ensuing proration period, by months, from the Tubb Gas Pool. The Commission shall consider the "Preliminary Nominations" of purchasers, actual production, and such other factors as may be deemed applicable in determining the amount of gas that may be produced without waste within the ensuing proration period. "Preliminary Nominations" shall be submitted on a form prescribed by the Commission.

RULE 8. In the event a gas purchaser's market shall have increased or decreased, he may file with the Commission prior to the 10th day of the month a "supplemental" nomination, showing the amount of gas he actually in good faith desires to purchase during the ensuing proration month from the Tubb Gas Pool. The Commission shall hold a public hearing between the 13th and 20th days of each month to determine the reasonable market demand for gas for the ensuing proration month, and shall issue a proration schedule setting out the amount of gas which each well may produce during the ensuing proration month.

"Supplemental Nominations" shall be submitted on a form prescribed by the Commission.

Included in the monthly proration schedule shall be:

- (a) A summary of the total pool allocation for that month showing nominations, and adjustments made for underage or overage applied from a previous month,
- (b) A tabulation of the net allowable, and production for the second preceding month together with a cumulative overage or underage computation,
- (c) A tabulation of the current and net allowables for the preceding month,

- (d) A tabulation of current monthly allowables for the ensuing proration month,
- (e) A tabulation of the acreage assigned each well together with a tabulation of the acreage factor assigned each well. For the purpose of allocation a proration unit of 160 acres shall be assigned an acreage factor of 1.00; a proration unit of 80 acres a factor of 0.50, etc.

The allowable assigned to any well capable of producing its normal gas allowable in the Tubb Gas Pool shall be the same proportion of the total remaining allowable allocated to said pool after deducting allowables of marginal wells that the number of acres contained in the gas proration unit for that well bears to the acreage contained in all gas proration units assigned to non-marginal wells in the Tubb Gas Pool.

The Commission shall include in the proration schedule the gas wells in the Tubb Gas Pool delivering to a gas transportation facility, or lease gathering system, and shall include in the proration schedule of the Tubb Gas Pool any well which it finds is being unreasonably discriminated against through denial of access to a gas transportation facility, which is reasonably capable of handling the type of gas produced by such well. The total allowable to be allocated to the pool each month shall be equal to the sum of the preliminary or supplemental nominations (whichever is applicable), together with any adjustment which the Commission deems advisable.

If during a proration month the acreage assigned a well is increased by Commission order or as otherwise provided in this order the increased allowable assigned the gas proration unit for the well shall be effective on the first day of the month following approval of such increase by the Commission.

BALANCING OF PRODUCTION

RULE 9. Underproduction: The dates 7:00 a.m., January 1, and 7:00 a.m., July 1, shall be known as balancing dates and the periods of time bounded by these dates shall be known as gas proration periods. The amount of current gas allowable remaining unproduced at the end of each proration period shall be carried forward to and may be produced during the next succeeding proration period in addition to the normal gas allowable for such succeeding period; but whatever amount thereof is not made up within the first succeeding proration period shall be cancelled.

If it appears that such continued underproduction has resulted from inability of the well to produce its allowable, it may be classified as a marginal well and its allowable reduced to the well's ability to produce.

If at the end of a proration period a marginal well has produced more than the total allowable assigned a non-marginal unit of corresponding size, the marginal

-7-

Case No. 728

Order No. R-586

well shall be reclassified as a non-marginal well and its allowable adjusted accordingly.

If during a proration period a marginal well is reworked or recompleted in such a manner that its productive capacity is increased to the extent that it should be reclassified as a non-marginal well, the reclassification shall be effective on the first day of the proration month following the date of recompletion.

The Proration Manager may reclassify a well at any time if production data or deliverability tests reflect the need for such a reclassification.

RULE 10. Overproduction: A well which has produced a greater amount of gas than was allowed during a given proration period shall have its allowable for the first succeeding proration period reduced by the amount of such overproduction and such overproduction shall be made up within the first succeeding proration period. If, at any time, a well is overproduced an amount equaling six times its current monthly allowable, it shall be shut-in until it is in balance.

The Commission may allow overproduction to be made up at a lesser rate than would be the case if the well were completely shut-in upon a showing at public hearing after due notice that complete shut-in of the well would result in material damage to the well.

GRANTING OF ALLOWABLES

RULE 11. No gas well shall be given an allowable until Form C-104 and Form C-110 have been filed together with a plat showing acreage attributed to said well and the locations of all wells on the lease.

RULE 12. Allowables to newly completed gas wells shall commence on the date of connection to a gas transportation facility, as determined from an affidavit furnished to the Commission (Box 2045, Hobbs, New Mexico) by the purchaser, or the date of filing of Form C-104, Form C-110 and the plat described above, or the date of application for a non-standard gas proration unit as provided in Rule 5, whichever date is the later.

RULE 13. The monthly gas production from each well shall be metered separately and the gas production therefrom shall be reported to the Commission on Form C-115 so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the gas produced.

Each purchaser or taker of gas in the Tubb Gas Pool shall submit a report to the Commission so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was purchased or taken.

-8-

Case No. 728
Order No. R-586

Such report shall be filed on either Form C-111 or Form C-114 (whichever is applicable) with the wells being listed in approximately the same order as they are listed on the proration schedule.

Forms C-111 and C-114 referred to herein shall be submitted in duplicate, the original being sent to the Commission at Box 871, Santa Fe, New Mexico, the other copy being sent to Box 2045, Hobbs, New Mexico.

Form C-115 shall be submitted in accordance with Rule 1114 of the Commission's Rules and Regulations.

The full production of gas from each well shall be charged against the well's allowable regardless of what disposition has been made of the gas; provided, however, that gas used on the lease for consumption in lease houses, treaters, compressors, combustion engines and other similar lease equipment shall not be charged against the well's allowable; further, the production of intermediate or low-pressure gas derived from the staging of the well fluids need not be charged against the well's gas allowable, provided that said intermediate or low-pressure gas is utilized in accordance with the provisions of Order R-464.

RULE 14. The term "gas purchaser" as used in these rules, shall mean any "taker" of gas either at the wellhead or at any point on the lease where connection is made for gas transportation or utilization. It shall be the responsibility of said "taker" to submit a nomination.

RULE 15. No gas, either dry gas or casinghead gas, produced from the Tubb Gas Pool shall be flared or vented.

PROVIDED FURTHER, After the effective date of this order no well shall be completed or recompleted in such a manner that the producing zone of the Tubb Gas Pool and the producing zone of any other common source of supply are both open in the same well bore unless specifically authorized by order of the Commission after notice and hearing. Dual completions may be effected in accordance with the provisions of Rule 112-A of the Commission's Rules and Regulations.

Any well presently completed in such a manner that the well bore is open to more than one common source of supply shall be assigned to the applicable pool by the Commission staff. Any operator of any well completed in such a manner shall submit to the Commission office at Hobbs, New Mexico, all pertinent well completion data on Form C-105, together with electric logs, sample logs, drill stem test records, etc. All data shall be submitted in duplicate on or before May 15, 1955. Failure of any operator to submit the required data will result in cancellation of Form C-110 and subsequent cancellation of allowables.

If the operator is not satisfied with the well's assignment he may apply for a hearing on the matter in accordance with Commission Rule 1203.

Case No. 728
Order No. R-586

PROVIDED FURTHER, That in filing Form C-101 "Notice of Intention to Drill or Recomplete" all operators shall strictly comply with the provisions of Rule 104, paragraph (e).

PROVIDED FURTHER, That failure to comply with the provisions of this order or the rules contained herein shall result in the cancellation of allowable assigned to the affected well. No further allowable shall be assigned to the affected well until all rules and regulations are complied with. The Proration Manager shall notify the operator of the well and the purchaser in writing of the date of allowable cancellation and the reason therefor.

PROVIDED FURTHER, That special pool rules applicable to the Byers-Queen Gas Pool be, and the same hereby are promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE BYERS-QUEEN GAS POOL

Well Spacing and Acreage Requirements for Drilling Tracts.

RULE 1. Any well drilled a distance of one mile or more outside the boundary of the Byers-Queen Gas Pool shall be classified as a wildcat well. Any well drilled less than one mile outside the boundary of the Byers-Queen Gas Pool shall be spaced, drilled, operated and prorated in accordance with the regulations in effect in the Byers-Queen Gas Pool.

RULE 2. Each well drilled or recompleted within the Byers-Queen Gas Pool on a standard proration unit after the effective date of this rule shall be drilled not closer than 660 feet to any boundary line of the tract nor closer than 330 feet to a quarter-quarter section line or sub-division inner boundary line. Any well drilled to and producing from the Byers-Queen Gas Pool prior to the effective date of this order at a location conforming to the spacing requirements effective at the time said well was drilled shall be considered to be located in conformance with this rule.

RULE 3. The Secretary-Director of the Commission shall have authority to grant exception to the requirements of Rule 2 without notice and hearing where a verified application therefor has been filed in due form and the necessity for the unorthodox location is based on topographical conditions or is occasioned by the recompletion of a well previously drilled to another horizon.

Applicants shall furnish all operators within a 1980-foot radius of the subject well a copy of the application to the Commission, and applicant shall include with his application a list of names and addresses of all operators within such radius, together with a stipulation that proper notice has been given said operators at the addresses given. The Secretary-Director of the Commission shall wait at least 20 days before approving any such unorthodox location, and shall approve such unorthodox location only in the absence of objection of any offset operators. In the event an operator objects to the unorthodox location the Commission shall consider the matter only after proper notice and hearing.

RULE 4. The provisions of Statewide Rule 104, Paragraph (k), shall not apply to the Byers-Queen Gas Pool located in Lea County, New Mexico.

GAS PRORATION

RULE 5. (a) The acreage allocated to a gas well for proration purposes shall be known as the gas proration unit for that well. For the purpose of gas allocation in the Byers-Queen Gas Pool, a standard proration unit shall consist of between 158 and 162 contiguous surface acres substantially in the form of a square which shall be a legal subdivision (quarter section) of the U. S. Public Land Surveys with a well located at least 660 feet from the nearest property lines;

(b) The allowable production from any non-standard gas proration unit as compared with the allowable production therefrom if such tract were a standard unit shall be in the ratio of the area of such non-standard proration unit expressed in acres to the area of 160 acres. Any gas proration unit containing between 158 and 162 acres shall be considered to contain 160 acres for the purpose of computing allowables.

(c) A non-standard gas proration unit of less than 160 acres may be formed after notice and hearing by the Commission, or by administrative approval under the provisions of Paragraph (b) of this Rule. Non-standard gas proration units of more than 160 acres may be formed only after notice and hearing by the Commission.

(d) The Secretary-Director of the Commission shall have authority to grant an exception to Rule 5 (a) without Notice and Hearing where a verified application has been filed in due form and where the following facts exist and the following provisions are complied with;

1. The non-standard gas proration unit consists of contiguous quarter-quarter sections and/or lots.

2. The non-standard gas proration unit lies wholly within a single governmental section.

3. The entire non-standard gas proration unit may reasonably be presumed to be productive of gas from the Byers-Queen Gas Pool.

4. The length or width of the non-standard gas proration unit does not exceed 2640 feet.

5. The applicant presents written consent in the form of waivers from (a) all operators owning interests in the quarter section in which any part of the non-standard gas proration unit is situated and which acreage is not included in said non-standard gas proration unit, and (b) all operators owning interests within 1500 feet of the well to which such gas proration unit is proposed to be allocated.

-11-

Case No. 728

Order No. R-586

6. In lieu of sub-paragraph 5 of this rule, the applicant may furnish proof of the fact that said offset operators were notified by registered mail of his intent to form such non-standard gas proration unit. The Secretary-Director of the Commission may approve the application if, after a period of 30 days following the mailing of said notice, no operator has made objection to formation of such non-standard gas proration unit.

RULE 6. (a) The Commission after notice and hearing, shall consider the nominations of gas purchasers from the Byers-Queen Gas Pool and other relevant data and shall fix the allowable production of the Byers-Queen Gas Pool.

RULE 7. At least 30 days prior to the beginning of each gas proration period the Commission shall hold a hearing after due notice has been given. The Commission shall cause to be submitted by each gas purchaser its "Preliminary Nominations" of the amount of gas which each in good faith actually desires to purchase within the ensuing proration period, by months, from the Byers-Queen Gas Pool. The Commission shall consider the "Preliminary Nominations" of purchasers, actual production, and such other factors as may be deemed applicable in determining the amount of gas that may be produced without waste within the ensuing proration period. "Preliminary Nominations" shall be submitted on a form prescribed by the Commission.

RULE 8. In the event a gas purchaser's market shall have increased or decreased, he may file with the Commission prior to the 10th day of the month a "supplemental" nomination, showing the amount of gas he actually in good faith desires to purchase during the ensuing proration month from the Byers-Queen Gas Pool. The Commission shall hold a public hearing between the 13th and 20th days of each month to determine the reasonable market demand for gas for the ensuing proration month, and shall issue a proration schedule setting out the amount of gas which each well may produce during the ensuing proration month.

"Supplemental Nominations" shall be submitted on a form prescribed by the Commission.

Included in the monthly proration schedule shall be:

- (a) A summary of the total pool allocation for that month showing nominations, and adjustments made for underage or overage applied from a previous month,
- (b) A tabulation of the net allowable, and production for the second preceding month together with a cumulative overage or underage computation,
- (c) A tabulation of the current and net allowables for the preceding month,

- (d) A tabulation of current monthly allowables for the ensuing proration month,
- (e) A tabulation of the acreage assigned each well together with a tabulation of the acreage factor assigned each well. For the purpose of allocation a proration unit of 160 acres shall be assigned an acreage factor of 1.00; a proration unit of 80 acres a factor of 0.50, etc.

The allowable assigned to any well capable of producing its normal gas allowable in the Byers-Queen Gas Pool shall be the same proportion of the total remaining allowable allocated to said pool after deducting allowables of marginal wells that the number of acres contained in the gas proration unit for that well bears to the acreage contained in all gas proration units assigned to non-marginal wells in the Byers-Queen Gas Pool.

The Commission shall include in the proration schedule the gas wells in the Byers-Queen Gas Pool delivering to a gas transportation facility, or lease gathering system, and shall include in the proration schedule of the Byers-Queen Gas Pool any well which it finds is being unreasonably discriminated against through denial of access to a gas transportation facility, which is reasonably capable of handling the type of gas produced by such well. The total allowable to be allocated to the pool each month shall be equal to the sum of the preliminary or supplemental nominations (whichever is applicable), together with any adjustment which the Commission deems advisable.

If during a proration month the acreage assigned a well is increased by Commission order or as otherwise provided in this order the increased allowable assigned the gas proration unit for the well shall be effective on the first day of the month following approval of such increase by the Commission.

BALANCING OF PRODUCTION

RULE 9. Underproduction: The dates 7:00 a.m., January 1, and 7:00 a.m., July 1, shall be known as balancing dates and the periods of time bounded by these dates shall be known as gas proration periods. The amount of current gas allowable remaining unproduced at the end of each proration period shall be carried forward to and may be produced during the next succeeding proration period in addition to the normal gas allowable for such succeeding period; but whatever amount thereof is not made up within the first succeeding proration period shall be cancelled.

If it appears that such continued underproduction has resulted from inability of the well to produce its allowable, it may be classified as a marginal well and its allowable reduced to the well's ability to produce.

-13-

Case No. 728

Order No. R-596

If at the end of a proration period a marginal well has produced more than the total allowable assigned a non-marginal unit of corresponding size, the marginal well shall be reclassified as a non-marginal well and its allowable adjusted accordingly.

If during a proration period a marginal well is reworked or recompleted in such a manner that its productive capacity is increased to the extent that it should be reclassified as a non-marginal well, the reclassification shall be effective on the first day of the proration month following the date of recompletion.

The Proration Manager may reclassify a well at any time if production data or deliverability tests reflect the need for such a reclassification.

RULE 10. Overproduction: A well which has produced a greater amount of gas than was allowed during a given proration period shall have its allowable for the first succeeding proration period reduced by the amount of such overproduction and such overproduction shall be made up within the first succeeding proration period. If, at any time, a well is overproduced an amount equaling six times its current monthly allowable, it shall be shut-in until it is in balance.

The Commission may allow overproduction to be made up at a lesser rate than would be the case if the well were completely shut-in upon a showing at public hearing after due notice that complete shut-in of the well would result in material damage to the well.

GRANTING OF ALLOWABLES

RULE 11. No gas well shall be given an allowable until Form C-104 and Form C-110 have been filed together with a plat showing acreage attributed to said well and the locations of all wells on the lease.

RULE 12. Allowables to newly completed gas wells shall commence on the date of connection to a gas transportation facility, as determined from an affidavit furnished to the Commission (Box 2045, Hobbs, New Mexico) by the purchaser, or the date of filing of Form C-104, Form C-110 and the plat described above, or the date of application for a non-standard gas proration unit as provided in Rule 5.

RULE 13. The monthly gas production from each well shall be metered separately and the gas production therefrom shall be reported to the Commission on Form C-115 so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the gas produced.

Each purchaser or taker of gas in the Byers-Queen Gas Pool shall submit a report to the Commission so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was purchased or taken.

-14-

Case No. 728
Order No. R-586

Such report shall be filed on either Form C-111 or Form C-114 (whichever is applicable) with the wells being listed in approximately the same order as they are listed on the proration schedule.

Forms C-111 and C-114 referred to herein shall be submitted in duplicate, the original being sent to the Commission at Box 871, Santa Fe, New Mexico, the other copy being sent to Box 2045, Hobbs, New Mexico.

Form C-115 shall be submitted in accordance with Rule 1114 of the Commission's Rules and Regulations.

The full production of gas from each well shall be charged against the well's allowable regardless of what disposition has been made of the gas; provided, however, that gas used in the lease for consumption in lease houses, treaters, compressors, combustion engines and other similar lease equipment shall not be charged against the well's allowable.

DEFINITIONS

RULE 14. The term "gas purchaser" as used in these rules, shall mean any "taker" of gas either at the wellhead or at any point on the lease where connection is made for gas transportation or utilization. It shall be the responsibility of said "taker" to submit a nomination.

RULE 15. No gas, either dry gas or casinghead gas, produced from the Byers-Queen Gas Pool shall be flared or vented.

PROVIDED FURTHER, After the effective date of this order no well shall be completed or recompleted in such a manner that the producing zone of the Byers-Queen Gas Pool and the producing zone of any other common source of supply are both open in the same well bore unless specifically authorized by order of the Commission after notice and hearing. Dual completions may be effected in accordance with the provisions of Rule 112-A of the Commission's Rules and Regulations.

Any well presently completed in such a manner that the well bore is open to more than one common source of supply shall be assigned to the applicable pool by the Commission staff. Any operator of any well completed in such a manner shall submit to the Commission office at Hobbs, New Mexico, all pertinent well completion data on Form C-105, together with electric logs, sample logs, drill stem test records, etc. All data shall be submitted in duplicate on or before May 15, 1955. Failure of any operator to submit the required data will result in cancellation of Form C-110 and subsequent cancellation of allowables.

If the operator is not satisfied with the well's assignment he may apply for a hearing on the matter in accordance with Commission Rule 1203.

-15-

Case No. 728

Order No. R-586

PROVIDED FURTHER, That in filing Form C-101 "Notice of Intention to Drill or Recomplete" all operators shall strictly comply with the provisions of Rule 104, paragraph (e).

PROVIDED FURTHER, That failure to comply with the provisions of this order or the rules contained herein shall result in the cancellation of allowable assigned to the affected well. No further allowable shall be assigned to the affected well until all rules and regulations are complied with. The Proration Manager shall notify the operator of the well and the purchaser in writing of the date of allowable cancellation and the reason therefor.

PROVIDED FURTHER, That special pool rules applicable to the Justis Gas Pool be, and the same hereby are promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE JUSTIS GAS POOL

Well Spacing and Acreage Requirements for Drilling Tracts.

RULE 1. Any well drilled a distance of one mile or more outside the boundary of the Justis Gas Pool shall be classified as a wildcat well. Any well drilled less than one mile outside the boundary of the Justis Gas Pool shall be spaced, drilled, operated and prorated in accordance with the regulations in effect in the Justis Gas Pool.

RULE 2. Each well drilled or recompleted within the Justis Gas Pool on a standard proration unit after the effective date of this rule shall be drilled not closer than 660 feet to any boundary line of the tract nor closer than 330 feet to a quarter-quarter section line or subdivision inner boundary line. Any well drilled to and producing from the Justis Gas Pool prior to the effective date of this order at a location conforming to the spacing requirements effective at the time said well was drilled shall be considered to be located in conformance with this rule.

RULE 3. The Secretary-Director of the Commission shall have authority to grant exception to the requirements of Rule 2 without notice and hearing where a verified application therefor has been filed in due form and the necessity for the unorthodox location is based on topographical conditions or is occasioned by the recompletion of a well previously drilled to another horizon.

Applicants shall furnish all operators within a 1980-foot radius of the subject well a copy of the application to the Commission, and applicant shall include with his application a list of names and addresses of all operators within such radius, together with a stipulation that proper notice has been given said operators at the addresses given. The Secretary-Director of the Commission shall wait at least 20 days before approving any such unorthodox location, and shall approve such unorthodox location only in the absence of objection of any offset operators. In the event an operator objects to the unorthodox location the Commission shall consider the matter only after proper notice and hearing.

-16-

Case No. 728

Order No. R-586

RULE 4. The provisions of Statewide Rule 104, Paragraph (k), shall not apply to the Justis Gas Pool located in Lea County, New Mexico.

GAS PRORATION

RULE 5. (a) The acreage allocated to a gas well for proration purposes shall be known as the gas proration unit for that well. For the purpose of gas allocation in the Justis Gas Pool, a standard proration unit shall consist of between 158 and 162 contiguous surface acres substantially in the form of a square which shall be a legal subdivision (quarter section) of the U. S. Public Land Surveys with a well located at least 660 feet from the nearest property lines;

(b) The allowable production from any non-standard gas proration unit as compared with the allowable production therefrom if such tract were a standard unit shall be in the ratio of the area of such non-standard proration unit expressed in acres to the area of 160 acres. Any gas proration unit containing between 158 and 162 acres shall be considered to contain 160 acres for the purpose of computing allowables.

(c) A non-standard gas proration unit of less than 160 acres may be formed after notice and hearing by the Commission, or by administrative approval under the provisions of Paragraph (d) of this Rule. Non-standard gas proration units of more than 160 acres may be formed after notice and hearing by the Commission.

(d) The Secretary-Director of the Commission shall have authority to grant an exception to Rule 5 (a) without Notice and Hearing where a verified application has been filed in due form and where the following facts exist and the following provisions are complied with;

1. The non-standard gas proration unit consists of contiguous quarter-quarter sections and/or lots.

2. The non-standard gas proration unit lies wholly within a single governmental section.

3. The entire non-standard gas proration unit may reasonably be presumed to be productive of gas from the Justis Gas Pool.

4. The length or width of the non-standard gas proration unit does not exceed 2640 feet.

5. The applicant presents written consent in the form of waivers from (a) all operators owning interests in the quarter-section in which any part of the non-standard gas proration unit is situated and which acreage is not included in said non-standard gas proration unit, and (b) all operators owning interests within 1500 feet of the well to which such gas proration unit is proposed to be allocated.

6. In lieu of sub-paragraph 5 of this rule, the applicant may furnish proof of the fact that said offset operators were notified by registered mail of his intent to form such non-standard gas proration unit. The Secretary of the Commission may approve the application if, after a period of 30 days following the mailing of said notice, no operator has made objection to formation of such non-standard gas proration unit.

RULE 6. (a) The Commission after notice and hearing, shall consider the nominations of gas purchasers from the Justis Gas Pool and other relevant data and shall fix the allowable production of the Justis Gas Pool.

RULE 7. At least 30 days prior to the beginning of each gas proration period the Commission shall hold a hearing after due notice has been given. The Commission shall cause to be submitted by each gas purchaser its "Preliminary Nominations" of the amount of gas which each in good faith actually desires to purchase within the ensuing proration period, by months, from the Justis Gas Pool. The Commission shall consider the "Preliminary Nominations" of purchasers, actual production, and such other factors as may be deemed applicable in determining the amount of gas that may be produced without waste within the ensuing proration period. "Preliminary Nominations" shall be submitted on a form prescribed by the Commission.

RULE 8. In the event a gas purchaser's market shall have increased or decreased, he may file with the Commission prior to the 10th day of the month a supplemental nomination, showing the amount of gas he actually in good faith desires to purchase during the ensuing proration month from the Justis Gas Pool. The Commission shall hold a public hearing between the 13th and 20th days of each month to determine the reasonable market demand for gas for the ensuing proration month, and shall issue a proration schedule setting out the amount of gas which each well may produce during the ensuing proration month.

"Supplemental Nominations" shall be submitted on a form prescribed by the Commission.

Included in the monthly proration schedule shall be:

- (a) A summary of the total pool allocation for that month showing nominations, and adjustments made for under- or overage applied from a previous month,
- (b) A tabulation of the net allowable, and production for the second preceding month together with a cumulative overage or underage computation,
- (c) A tabulation of the current and net allowables for the preceding month,

- (d) A tabulation of current monthly allowables for the ensuing proration month,
- (e) A tabulation of the acreage assigned each well together with a tabulation of the acreage factor assigned each well. For the purpose of allocation a proration unit of 160 acres shall be assigned an acreage factor of 1.00; a proration unit of 80 acres a factor of 0.50, etc.

The allowable assigned to any well capable of producing its normal gas allowable in the Justis Gas Pool shall be the same proportion of the total remaining allowable allocated to said pool after deducting allowables of marginal wells that the number of acres contained in the gas proration unit for that well bears to the acreage contained in all gas proration units assigned to non-marginal wells in the Justis Gas Pool.

The Commission shall include in the proration schedule the gas wells in the Justis Gas Pool delivering to a gas transportation facility, or lease gathering system, and shall include in the proration schedule of the Justis Gas Pool any well which it finds is being unreasonably discriminated against through denial of access to a gas transportation facility, which is reasonably capable of handling the type of gas produced by such well. The total allowable to be allocated to the pool each month shall be equal to the sum of the preliminary or supplemental nominations (whichever is applicable), together with any adjustment which the Commission deems advisable.

If during a proration month the acreage assigned a well is increased by Commission order or as otherwise provided in this order the increased allowable assigned the gas proration unit for the well shall be effective on the first day of the month following approval of such increase by the Commission.

BALANCING OF PRODUCTION

RULE 9. Underproduction: The dates 7:00 a.m., January 1, and 7:00 a.m., July 1, shall be known as balancing dates and the periods of time bounded by these dates shall be known as gas proration periods. The amount of current gas allowable remaining unproduced at the end of each proration period shall be carried forward to and may be produced during the next succeeding proration period in addition to the normal gas allowable for such succeeding period; but whatever amount thereof is not made up within the first succeeding proration period shall be cancelled.

If it appears that such continued underproduction has resulted from inability of the well to produce its allowable, it may be classified as a marginal well and its allowable reduced to the well's ability to produce.

-19-

Case No. 728

Order No. R-586

If at the end of a proration period a marginal well has produced more than the total allowable assigned a non-marginal unit of corresponding size, the marginal well shall be reclassified as a non-marginal well and its allowable adjusted accordingly.

If during a proration period a marginal well is reworked or recompleted in such a manner that its productive capacity is increased to the extent that it should be reclassified as a non-marginal well, the reclassification shall be effective on the first day of the proration month following the date of recompletion.

The Proration Manager may reclassify a well at any time if production data or deliverability tests reflect the need for such a reclassification.

RULE 10. Overproduction: A well which has produced a greater amount of gas than was allowed during a given proration period shall have its allowable for the first succeeding proration period reduced by the amount of such overproduction and such overproduction shall be made up within the first succeeding proration period. If, at any time, a well is overproduced an amount equaling six times its current monthly allowable, it shall be shut-in until it is in balance.

The Commission may allow overproduction to be made up at a lesser rate than would be the case if the well were completely shut-in upon a showing at public hearing after due notice that complete shut-in of the well would result in material damage to the well.

GRANTING OF ALLOWABLES

RULE 11. No gas well shall be given an allowable until Form C-104 and Form C-110 have been filed together with a plat showing acreage attributed to said well and the locations of all wells on the lease.

RULE 12. Allowables to newly completed gas wells shall commence on the date of connection to a gas transportation facility, as determined from an affidavit furnished to the Commission (Box 2045, Hobbs, New Mexico) by the purchaser, or the date of filing of Form C-104, Form C-110 and the plat described above, or the date of application for a non-standard gas proration unit as provided in Rule 5.

RULE 13. The monthly gas production from each well shall be metered separately and the gas production therefrom shall be reported to the Commission on Form C-115 so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the gas produced.

Each purchaser or taker of gas in the Justis Gas Pool shall submit a report to the Commission so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was purchased or taken.

-20-

Case No. 728
Order No. R-586

Such report shall be filed on either Form C-111 or Form C-114 (whichever is applicable) with the wells being listed in approximately the same order as they are listed on the proration schedule.

Forms C-111 and C-114 referred to herein shall be submitted in duplicate, the original being sent to the Commission at Box 871, Santa Fe, New Mexico, the other copy being sent to Box 2045, Hobbs, New Mexico.

Form C-115 shall be submitted in accordance with Rule 1114 of the Commission's Rules and Regulations.

The full production of gas from each well shall be charged against the well's allowable regardless of what disposition has been made of the gas; provided, however, that gas used on the lease for consumption in lease houses, treaters, compressors, combustion engines and other similar lease equipment shall not be charged against the well's allowable.

RULE 14. The term "gas purchaser" as used in these rules, shall mean any "taker" of gas either at the wellhead or at any point on the lease where connection is made for gas transportation or utilization. It shall be the responsibility of said "taker" to submit a nomination.

RULE 15. No gas, either dry gas or casinghead gas, produced from the Justis Gas Pool shall be flared or vented.

PROVIDED FURTHER, After the effective date of this order no well shall be completed or recompleted in such a manner that the producing zone of the Justis Gas Pool and the producing zone of any other common source of supply are both open in the same well bore unless specifically authorized by order of the Commission after notice and hearing. Dual completions may be effected in accordance with the provisions of Rule 112-A of the Commission's Rules and Regulations.

Any well presently completed in such a manner that the well bore is open to more than one common source of supply shall be assigned to the applicable pool by the Commission staff. Any operator of any well completed in such a manner shall submit to the Commission office at Hobbs, New Mexico, all pertinent well completion data on Form C-105, together with electric logs, sample logs, drill stem test records, etc. All data shall be submitted in duplicate on or before May 15, 1955. Failure of any operator to submit the required data will result in cancellation of Form C-110 and subsequent cancellation of allowables.

If the operator is not satisfied with the well's assignment he may apply for a hearing on the matter in accordance with Commission Rule 1203.

PROVIDED FURTHER, That in filing Form C-101 "Notice of Intention to Drill or Recomplete" all operators shall strictly comply with the provisions of Rule 104, paragraph (e).

-21-

Case No. 728

Order No. R-586

PROVIDED FURTHER, That failure to comply with the provisions of this order or the rules contained herein shall result in the cancellation of allowable assigned to the affected well. No further allowable shall be assigned to the affected well until all rules and regulations are complied with. The Proration Manager shall notify the operator of the well and the purchaser in writing of the date of allowable cancellation and the reason therefor.

EXHIBIT "A"

Horizontal limits of the Tubb Gas Pool

TOWNSHIP 21 SOUTH, RANGE 37 EAST

All of Secs. 3, 9, 10, 15, 16, 17
All of Secs. 20 to 23, and 26 to 29 incl.
SW/4, & Lots 3, 4, 5, 6, 11, 12, 13, 14 of Sec. 2
SE/4, & Lots 1, 2, 7, 8, 9, 10, 15, 16 of Sec. 4
E/2 of Sec. 8
W/2 of Sec. 11
W/2 of Sec. 14
E/2 of Sec. 19
W/2 of Sec. 25
E/2 of Sec. 30
E/2 of Sec. 31
All of Secs. 32 to 36 incl.

TOWNSHIP 22 SOUTH, RANGE 37 EAST

All of Secs. 1 to 5 incl.
E/2 Sec. 6
All Secs. 8 to 16 incl.
E/2 Sec. 21
All Secs. 22 to 25 incl.

TOWNSHIP 22 SOUTH, RANGE 38 EAST

W/2 Sec. 6
W/2 Sec. 7
W/2 Sec. 18
All Secs. 19 & 30

EXHIBIT "B"

Horizontal limits of the Byers-Queen Gas Pool

TOWNSHIP 18 SOUTH, RANGE 38 EAST

All Secs. 29 to 32 incl.

-22-
Case No. 728
Order No. R-586

EXHIBIT "C"

Horizontal limits of the Justis Gas Pool

TOWNSHIP 25 SOUTH, RANGE 37 EAST

SW/4 Sec. 1
SE/4 Sec. 2
E/2 Sec. 11
W/2 Sec. 12
All Sec. 13
E/2 Sec. 14
E/2 Sec. 23
W/2 Sec. 24

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JOHN F. SIMMS, Chairman

E. S. WALKER, Member

W. B. MACEY, Member and Secretary

S E A L

ir

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE 723

TRANSCRIPT OF HEARING

November 13, 1958

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE NEW MEXICO
Phone CHapel 3-6691

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE 728 Application of El Paso Natural Gas Company
for an order extending the vertical limits
of the Justis Gas Pool, Lea County, New Mex-
ico. Applicant, in the above-styled cause,
seeks an order extending the vertical limits
of the Justis Gas Pool in Lea County, New
Mexico, to a datum 200 feet below the top of
the Glorieta formation. The vertical limits
of the Justis Gas Pool, as presently desig-
nated, extend from the top of the Glorieta
formation to a point 200 feet below the top
of said formation.

BEFORE:

Mr. Edwin L. Mechem
Mr. Murray Morgan
Mr. A. D. Porter

T R A N S C R I P T O F P R O C E E D I N G S

MR. PORTER: The Commission will call next Case 728.

MR. PAYNE: Case 728. Application of El Paso Natural
Gas Company for an order extending the vertical limits of the Justis
Gas Pool, Lea County, New Mexico.

MR. WHITWORTH: I am Jack Whitworth representing
El Paso Natural Gas Company. El Paso requests that this case
be dismissed without prejudice. El Paso will refile the matter
later on with a more accurate description of the vertical limits,
when the vertical limits of the Justis Gas Pool have been determined.

3

MR. PORTER: Any objection to counsel's motion? Case
728 will be dismissed.

C E R T I F I C A T E

STATE OF NEW MEXICO)
 : ss
COUNTY OF BERNALILLO)

I, J. A. TRUJILLO, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in stenotype and reduced to typewritten transcript by me and/or under my personal supervision, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal, this, the 17th day of November 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Joseph A. Trujillo
Notary Public

My Commission Expires:
October 5, 1960.

Casa No.

728

Application, Transcript,
Small Exhibits, Etc.

CASE 728: Revision of Tubb, Byers-Queen and
Justis Gas Pool regulations (upon motion
of CCC)

DCC Exhibit
**BEHAVIOR OF
GAS CONDENSATE RESERVOIRS**

by

M. R. Dean and F. H. Poettmann

Research Division Report 102-51-54R

January 26, 1954

PHILLIPS PETROLEUM COMPANY
RESEARCH AND DEVELOPMENT DEPARTMENT
BARTLESVILLE, OKLAHOMA



PHILLIPS PETROLEUM COMPANY
RESEARCH DIVISION
BARTLESVILLE, OKLAHOMA

BEHAVIOR OF GAS CONDENSATE RESERVOIRS

The purpose of this talk is to discuss the fundamental behavior of gas-condensate reservoir fluids with particular attention given to explanations of the changes in the producing characteristics observed in the field, and thereby provide a basis for a better understanding of gas-condensate reservoir behavior and to permit more reliable predictions of such changes as will occur in a particular reservoir.

How is the production from a gas-condensate reservoir recognized? Figure 1 lists the identifying characteristics. Items 1, 2, and 3 are those commonly observed in the field. They are not always sufficient for positive identification. Test No. 4 will be of value also. It can be made by sampling the separator gas and liquid, analyzing them and calculating the composite composition when they are recombined in the producing gas-oil ratio. Test No. 5 will furnish additional proof. Test No. 6, which can be made only in the laboratory, is the final proof.

Figure 2 shows the compositions of two typical gas-condensate fluids compared with a "dark oil" reservoir fluid.

Field experience has shown that the physical properties of gas-condensate production undergoes certain characteristic changes as the reservoir pressure declines. For example Figure 10 shows that the gas-oil ratio rises steadily, goes through a maximum then, if the pressure goes low enough, declines somewhat. Simultaneously the API gravity can be expected to rise somewhat.

These observations, however, do not explain what happens in the reservoir to cause such changes.

APR 5 1954

A major portion of this talk will be devoted to giving an explanation of what happens in the reservoir, how such events can be predicted by laboratory experiments and how the information so obtained can be helpful in finding the most desirable method for exploiting the reservoir reserves. In order to proceed in an orderly manner it is desirable to discuss briefly the basic science involved. For the moment let us discuss three simple terms which all of you use frequently. They are "gas", "liquid", and "critical temperature."

These terms were not coined, nor were the phenomena they describe first discovered by the petroleum engineer. The classical researches of physicists of the nineteenth century on the laws governing the behavior of pure liquids and of mixtures of liquids under pressure described the behavior which is observed in gas-condensate reservoir fluids today. It was not until the early 1930's with the advent of higher pressure reservoirs that the petroleum industry "rediscovered" the work of these nineteenth century scientists.

The terms "gas" and "liquid" as commonly used are only relative. "Gas" is normally thought of as a substance which can expand indefinitely to fill completely its container and a "liquid" as a substance adapting itself to the shape of its container but not capable of indefinite expansion. However, under the conditions of temperature and pressure found in gas-condensate reservoirs these definitions of gas and liquid are inadequate.

Figure 3 shows a typical pressure-temperature diagram. This one happens to be for propane. The diagram is shaded according to the density of propane for various conditions of temperature and pressure. It shows that only the paths which cross the vapor pressure curve show abrupt changes in density and that these changes become less as the temperature is increased and finally disappear at a certain temperature. This temperature is called the "critical temperature". Thus, we define the critical temperature as that temperature at which the density of the vapor becomes equal to the density of the liquid. It is possible to vary the

temperature and pressure such that one can start in the gaseous region and proceed to a normally liquid state without passing through two-phase region. Thus, the terms "vapor" and "liquid" have significance only when they are in the presence of each other.

Figure 4 is the phase diagram of a mixture of two hydrocarbons, ethane and hexane. Note that this mixture has a critical temperature. However, in this case the transition from all gas to all liquid takes place over a range of pressure, for a given temperature, instead of at a single pressure value as is the case for a pure material, propane for example. Again note that it is possible, by varying the temperature and pressure properly, to cause the mixture to go from a gas-like material to a liquid-like material without going through the two-phase (gas-liquid) region.

Figure 5 shows the phase diagram of a complex mixture (a mixture composed of many different hydrocarbons). This diagram is similar in its general shape to the preceding diagram for the two-component mixture. It will serve as a model of the phase diagram of a gas-condensate mixture because such a mixture is composed of many different hydrocarbons. Note that again there is a critical temperature, a gaseous zone and a liquid zone. Figure 5 serves to show the important features of the phase behavior of a gas-condensate reservoir fluid.

A complete description, however, requires the explanation of one more effect. That effect is called "retrograde condensation". This phenomenon was first observed by J. P. Kuenen at the University of Leiden in Holland during the year 1892. He was the first to use the term "retrograde condensation". The term implies a reversal in the normal behavior or the direction of the condensation process. Thus, retrograde condensation refers to condensation of a liquid from a gas upon the constant temperature expansion of the gas. Conversely, "retrograde vaporization", would refer to the vaporization of a liquid by constant temperature compression of the mixture.

Again referring to Figure 5, if the pressure were dropped isothermally from point A to point B, the retrograde dew-point, liquid would start to appear. Further reduction in pressure causes continued condensation until point D is reached at which pressure the liquid volume becomes maximum. Further pressure reduction results in vaporization of the liquid until at point E, the entire quantity of liquid formed from B to D has been vaporized and the mixture is at its lower dew-point. The condensation from B to D is retrograde. From D to E normal vaporization occurs.

If the temperature of the mixture were increased sufficiently the pressure can be changed from very low to very high values without the appearance of a liquid phase. That is the relationship between reservoir temperature and the phase diagram of the gas comprising a dry gas field. On the other hand, if the temperature of this mixture were dropped to a value less than the critical temperature, and the pressure raised high enough to move into the single-phase region, where only liquid will be observed, the following events will occur as the pressure is progressively reduced at constant temperature. When the pressure reaches the upper curve a bubble of vapor will appear. This is called the "bubble-point pressure" or "saturation pressure". As the pressure is further reduced more vapor appears and the volume of liquid decreases until at the lower curve only vapor will be found with a trace of liquid. This is the relationship between the reservoir temperature and a mixture comprising a dark-oil reservoir.

Thus, the phase behavior of a given reservoir fluid is governed by the relationship between its phase diagram and the reservoir temperature (Test No. 6).

Let us return our attention to the case of the gas-condensate reservoir. The entire phase-behavior history during the production of fluid from an actual reservoir will take place over only that part of the diagram included along the line from B toward E, but usually stopping slightly below D.

The task of predicting the properties of the production at various stages during the producing life of an actual reservoir involves the use of a mathematical or a laboratory method which, in effect, vastly magnifies the changes taking place along the line BD.

We have tested the usefulness of the mathematical method and found that in order to obtain a result of requisite accuracy experimental data would first have to be obtained to feed into the equations since the necessary data do not exist. The task of obtaining those data would be greater than the task of performing a laboratory experiment which would give the answer directly. We prefer to use the laboratory method. It is that method which will be described briefly.

Figure 6 shows a cut-away drawing of the steel pressure vessel which is the "heart" of the laboratory equipment. It is referred to as the "equilibrium cell". The cell has a volume of about seven-tenths gallon. It is equipped with a pair of glass windows through which the hydrocarbon contents can be seen. The contents can be compressed to the desired pressure by injecting mercury above the piston forcing it downward. Samples of gas and liquid are obtained from a field separator through which production from the reservoir to be studied is flowing. The samples are obtained preferably as soon as possible after the reservoir is discovered and the production has stabilized. The separator liquid and gas are charged into the cell in their producing ratio. In most cases this operation reconstitutes the flowing vapor phase in the reservoir. The pressure and temperature are adjusted to be the same as exist in the reservoir. The contents are viewed through the windows to see if any liquid phase exists. Usually there is none. The absence of liquid indicates that only the vapor phase is flowing to the well bore. A sample of the vapor phase is withdrawn for analysis with consequent reduction in pressure. This procedure is repeated from 8 to 15 times until the cell is depleted. Each time a sample is withdrawn the volume of the liquid phase created by virtue of the retrograde condensation effect is measured by viewing it through the windows while injecting a measured volume of mercury into the base of the cell thus floating the hydrocarbon liquid past them.

The laboratory procedure does not constitute a scale model of the reservoir. The reservoir fluids in the cell go through the same phase changes that they undergo in the natural reservoir.

Figures 7, 8, and 9 show the types of data obtained in the laboratory study. Figure 7 shows how the concentrations of the various components of the vapor phase in the reservoir change as the pressure declines. Note that the concentrations of the butanes and all the heavier components decrease steadily as the pressure declines. This is due to the retrograde condensation phenomenon. Figure 8 shows the volume percentage of the pore space occupied by the retrograde liquid phase for one reservoir. That reservoir can be classed as a "rich" reservoir. The average gas-condensate reservoir is "leaner" and the volume percentage will be less. The important point is that even for very rich reservoirs it is unlikely that the volume percentage will reach the 20 per cent or so that is needed for the liquid phase to flow toward the well bore. This brings us to the characteristic of the gas-condensate reservoir which makes it basically different from the dark-oil producing reservoir. That is, the stock tank liquid content of the reservoir is contained in the vapor phase, and all the liquid which retrogrades out in the reservoir will usually never be produced by the process of producing the gas. This is exactly

opposite from the dark-oil reservoir where the liquid is usually produced into the well bore concurrently with the gas. To use the scientist's terminology, the gas-condensate reservoir is unique because the characteristics of the production are controlled by the thermodynamic properties of the vapor phase whereas in the dark-oil producing reservoir it is the dynamics of the flowing fluids which control.

The laboratory results can be assembled to show the extent of the retrograde condensation losses. Figure 9 shows a typical example. In general the richer the reservoir fluid the greater will be the percentage loss.

It is appropriate to ask, "How dependable are these laboratory procedures for predicting gas-condensate reservoir behavior?"

The problem of proving the soundness of the laboratory technique requires a great deal of patience. Whereas only 10 to 15 days are required to complete a "production history" in the laboratory on a particular reservoir fluid, we must wait the usual period, measured in years, for the natural reservoir to complete the same degree of pressure depletion. However, the comparisons we have been able to make so far indicate that the laboratory method gives reliable results.

Figure 10 presents an example of another use of the laboratory method. A comparison was made between the actual gas-oil ratio history of a gas-condensate reservoir and the gas-oil history calculated from the results of a laboratory study of the type just described. Note that the laboratory study predicts a uniformly increasing gas-oil ratio resulting from retrograde condensation of the heavier hydrocarbons in the reservoir. The field history, by contrast, showed the gas-oil ratio history to follow a rising trend but at a much slower rate. This reservoir included an oil rim. Other information gave support to the idea that there was a liquid phase saturation present of just the right degree to give it an incipient mobility. Thus, the liquid which retrograded out of the gas, flowed to the well bore and helped to maintain the gas-oil ratio. However, as the pressure continued to drop the natural shrinkage of the liquid phase finally became large enough that it exceeded the additional liquid being contributed by retrograde condensation. This resulted in a decrease in the liquid phase mobility to nearly zero. It is now expected that the gas-oil ratio history will follow the laboratory prediction for the remainder of the reservoir's life. From the standpoint of the producing mechanism in this reservoir it can be said that during its early life the dynamic characteristics of the two flowing fluids, gas and liquid, controlled and during its later life the thermodynamic properties of the vapor phase will control. Time

Page 8

does not permit a discussion of the usefulness of such a study in making an economic-engineering appraisal of a particular reservoir with regard to the value of pressure maintainance. However, such use will be evident to you.

MRD/FHP/wlb

FIGURE 1 CHARACTERISTICS OF A GAS-CONDENSATE RESERVOIR

1. GOR GREATER THAN 10,000
2. TANK OIL GRAVITY ABOVE 48 API
3. TANK OIL COLOR, STRAW TO COLORLESS
4. COMPOSITION RICH IN METHANE
5. MOLECULAR WEIGHT OF HEPTANES + FRACTION BETWEEN 120 AND 170
6. PHASE STATE OF THE RESERVOIR FLUID IS AT THE RETROGRADE DEW-POINT PRESSURE OR ABOVE

FIGURE 2
TYPICAL COMPOSITIONS FOR
GAS-CONDENSATE AND
DARK-OIL

	COMPOSITIONS IN MOLE PERCENT		
	CONDENSATE RESERVOIR FLUID		DARK-OIL RESERVOIR LIQUID
	<u>RICH</u>	<u>LEAN</u>	
METHANE	72.4	82.4	18.1
ETHANE	9.6	10.7	11.8
PROPANE	5.4	3.1	12.7
BUTANES	3.7	1.3	9.2
PENTANES	2.1	0.7	6.0
HEXANES	1.8	0.6	5.8
HEPTANES +	<u>5.0</u>	<u>1.2</u>	<u>36.4</u>
	100.0	100.0	100.0
HEPTANES + MOLECULAR WEIGHT	150	130	220

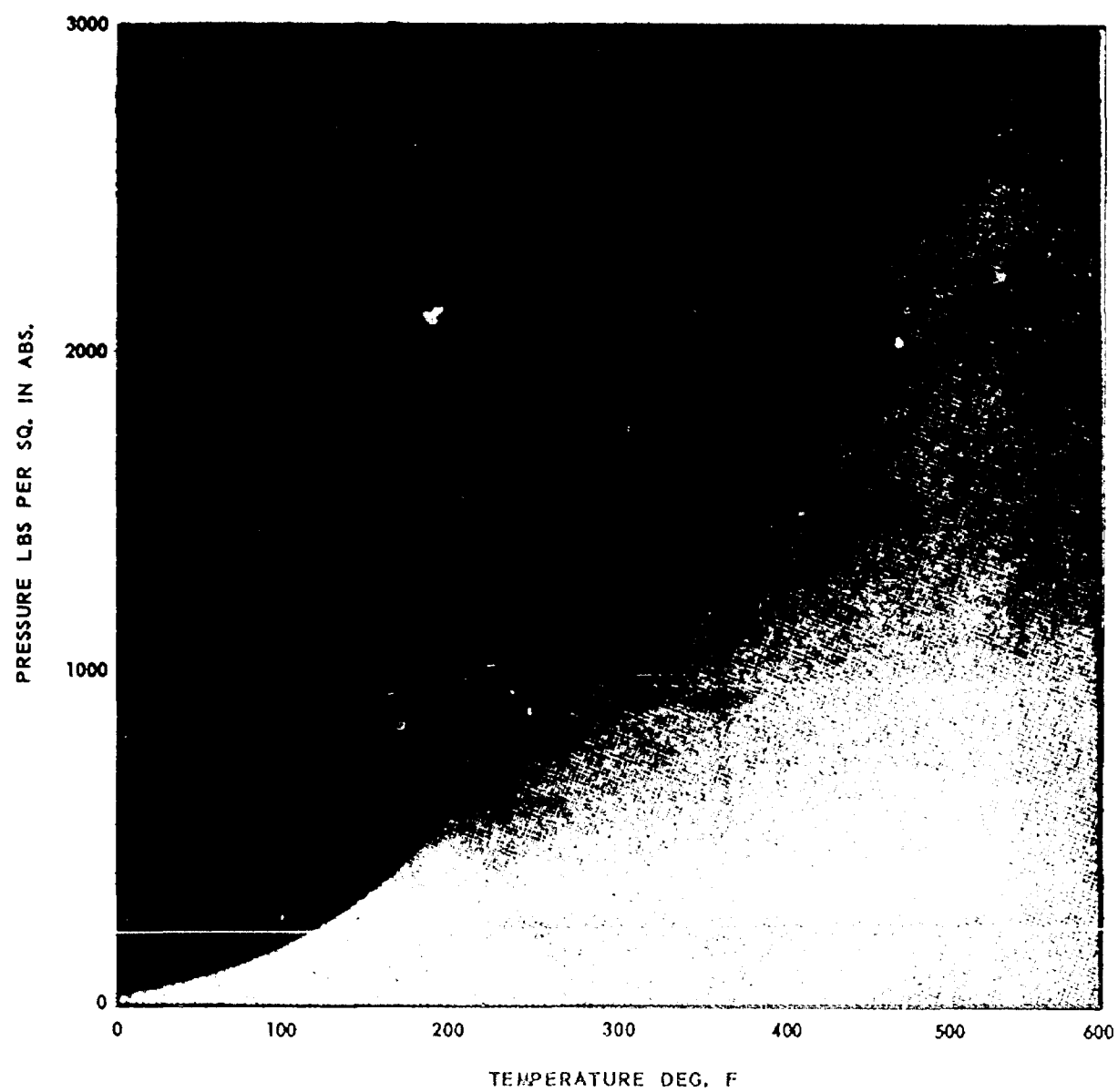


FIGURE 3 CONTINUITY OF GASEOUS AND LIQUID PHASES

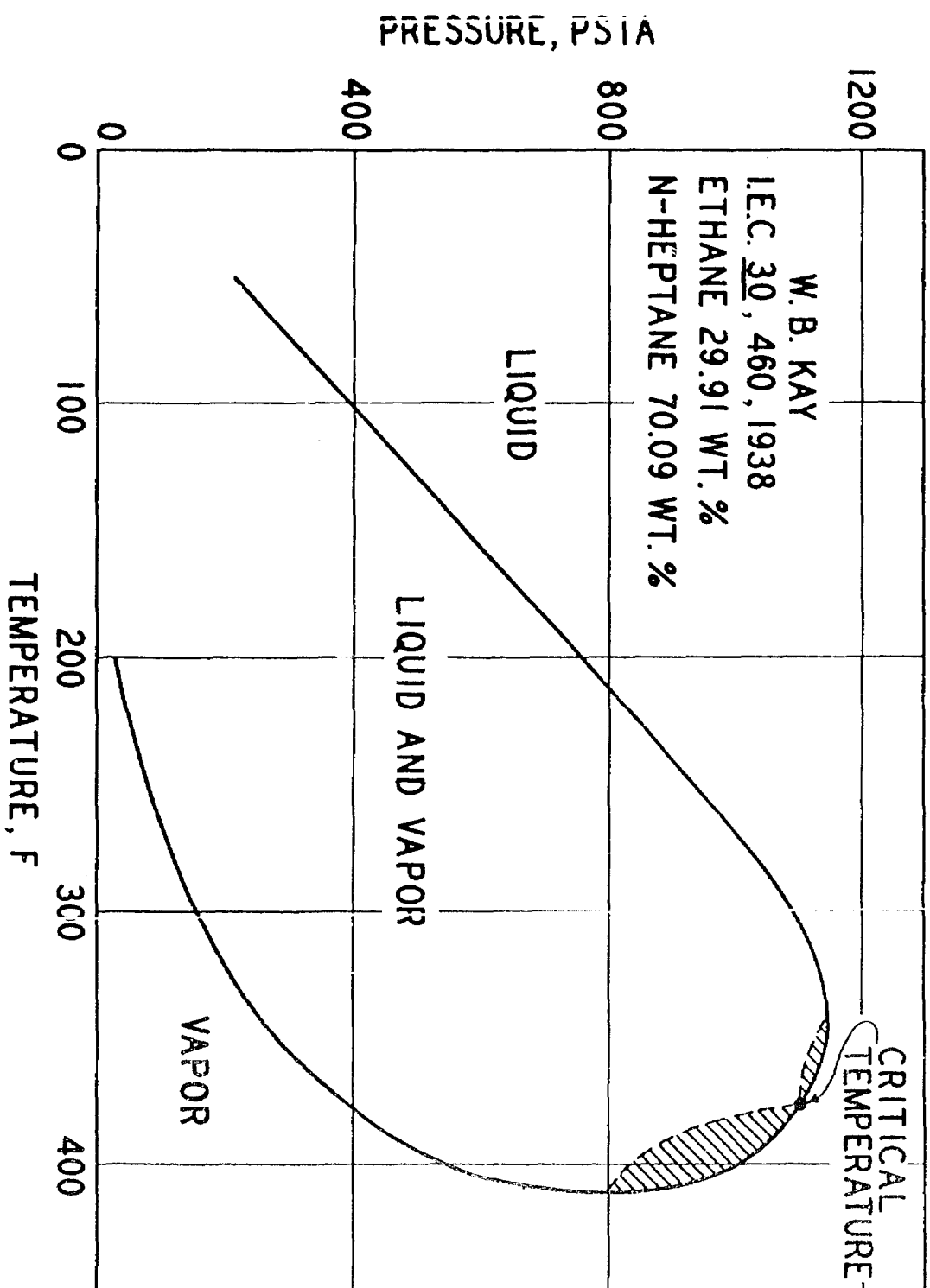


FIG. 4 PRESSURE-TEMPERATURE DIAGRAM FOR
ETHANE-N-HEPTANE MIXTURE

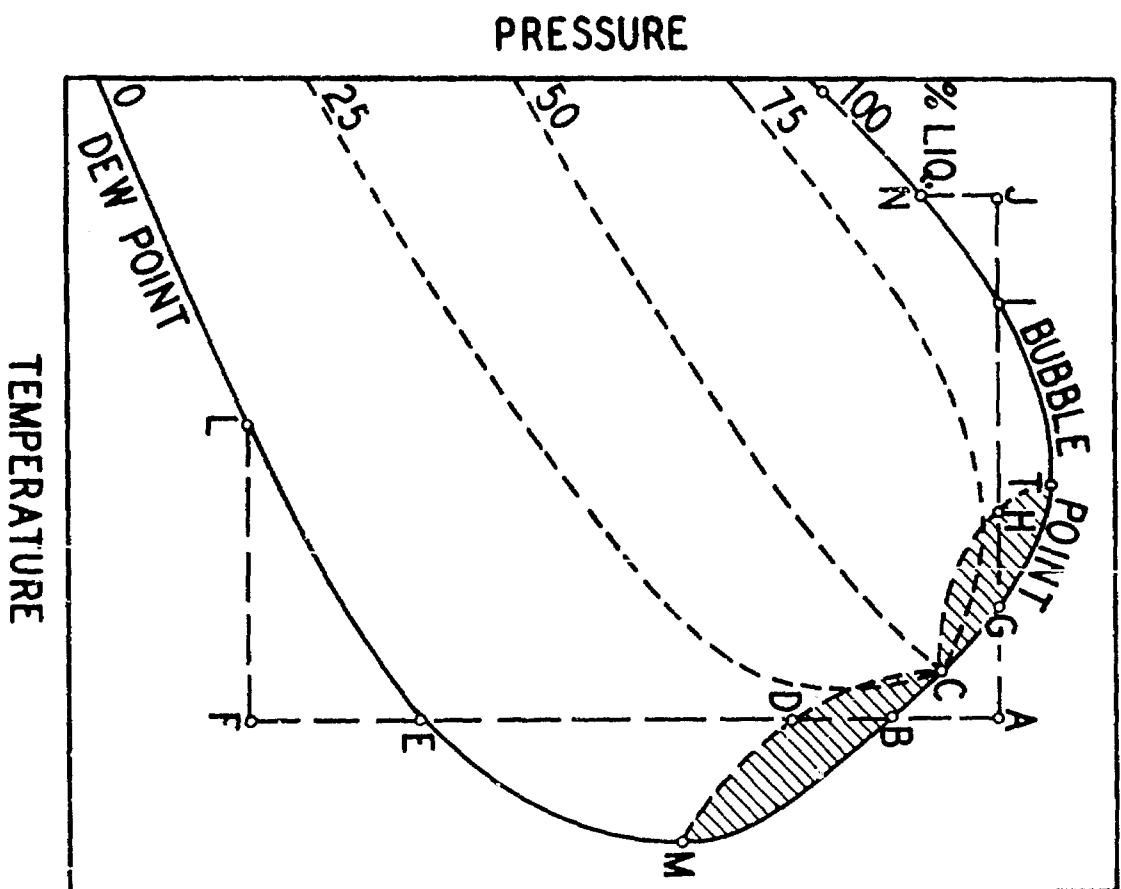


FIG. 5 PHASE DIAGRAM TO ILLUSTRATE
NOMENCLATURE OF RETROGRADE
CONDENSATION

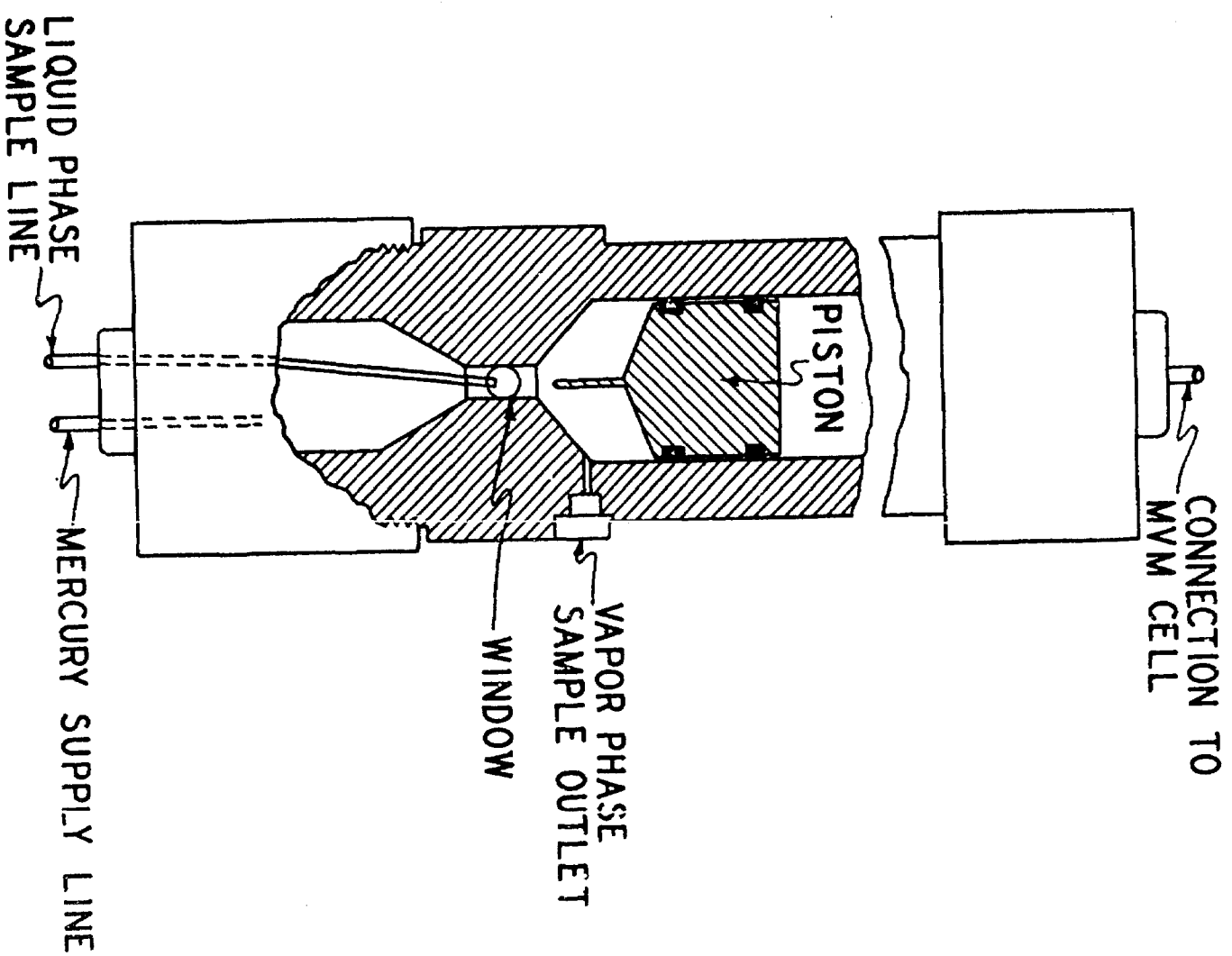


FIG. 6 PISTON CELL

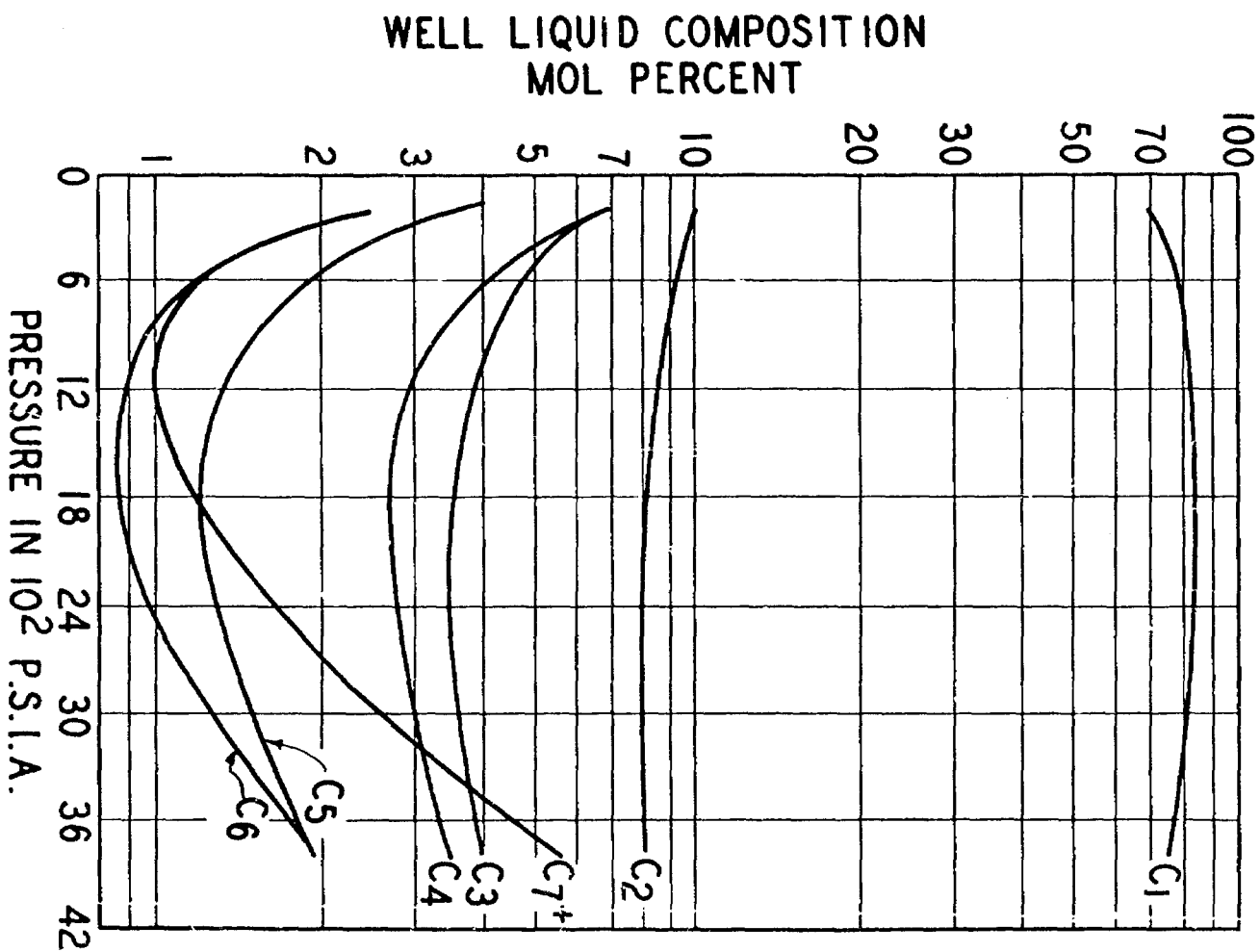


FIG. 7 COMPOSITION OF PRODUCED FLUID
AS A FUNCTION OF PRESSURE DURING
PRESSURE DEPLETION

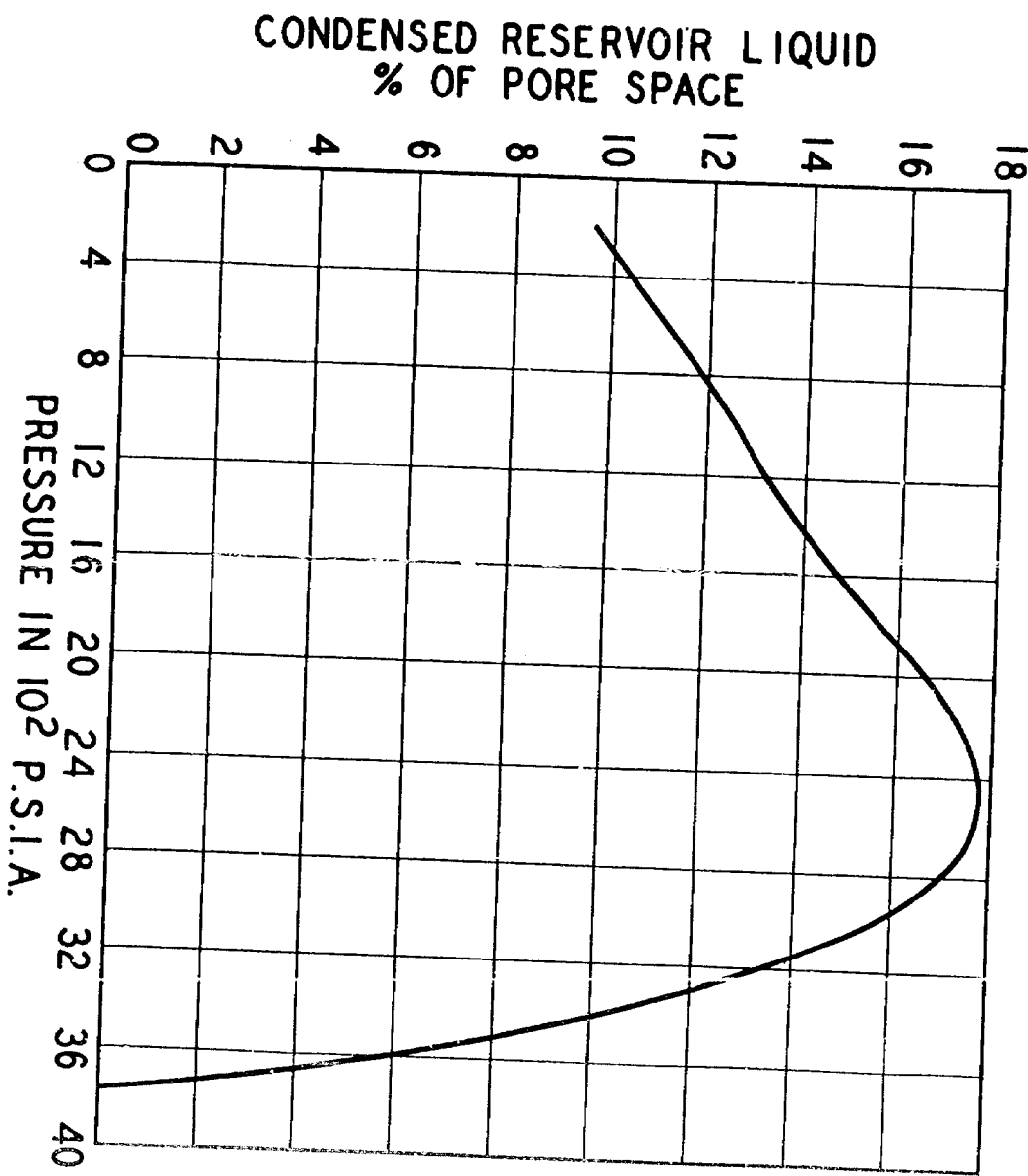


FIG. 8 CONDENSED LIQUID IN THE
RESERVOIR AS A FUNCTION
OF PRESSURE DURING
PRESSURE DEPLETION

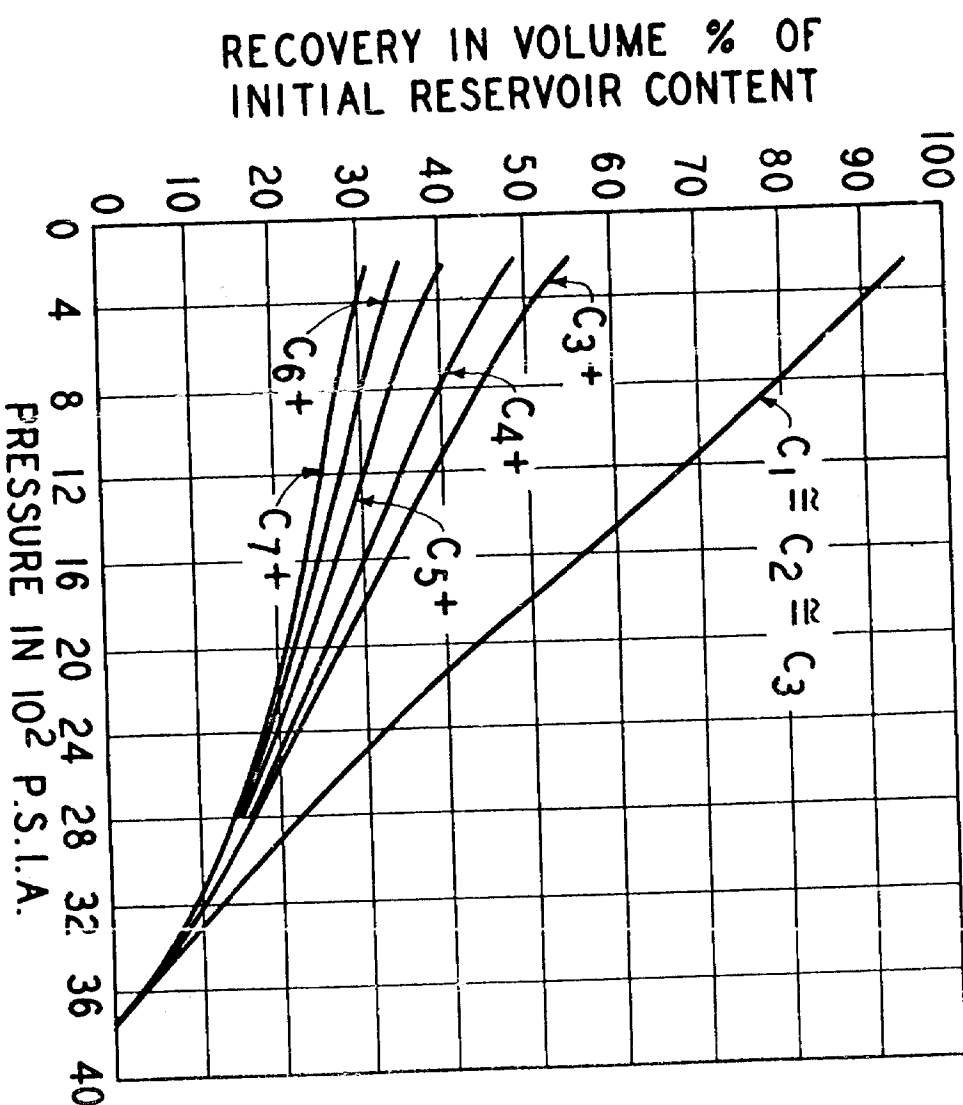


FIG. 9 CUMULATIVE RECOVERY BY
PRESSURE DEPLETION PER
UNIT OF RESERVOIR VOLUME
AS A PERCENTAGE OF
ORIGINAL CONTENT

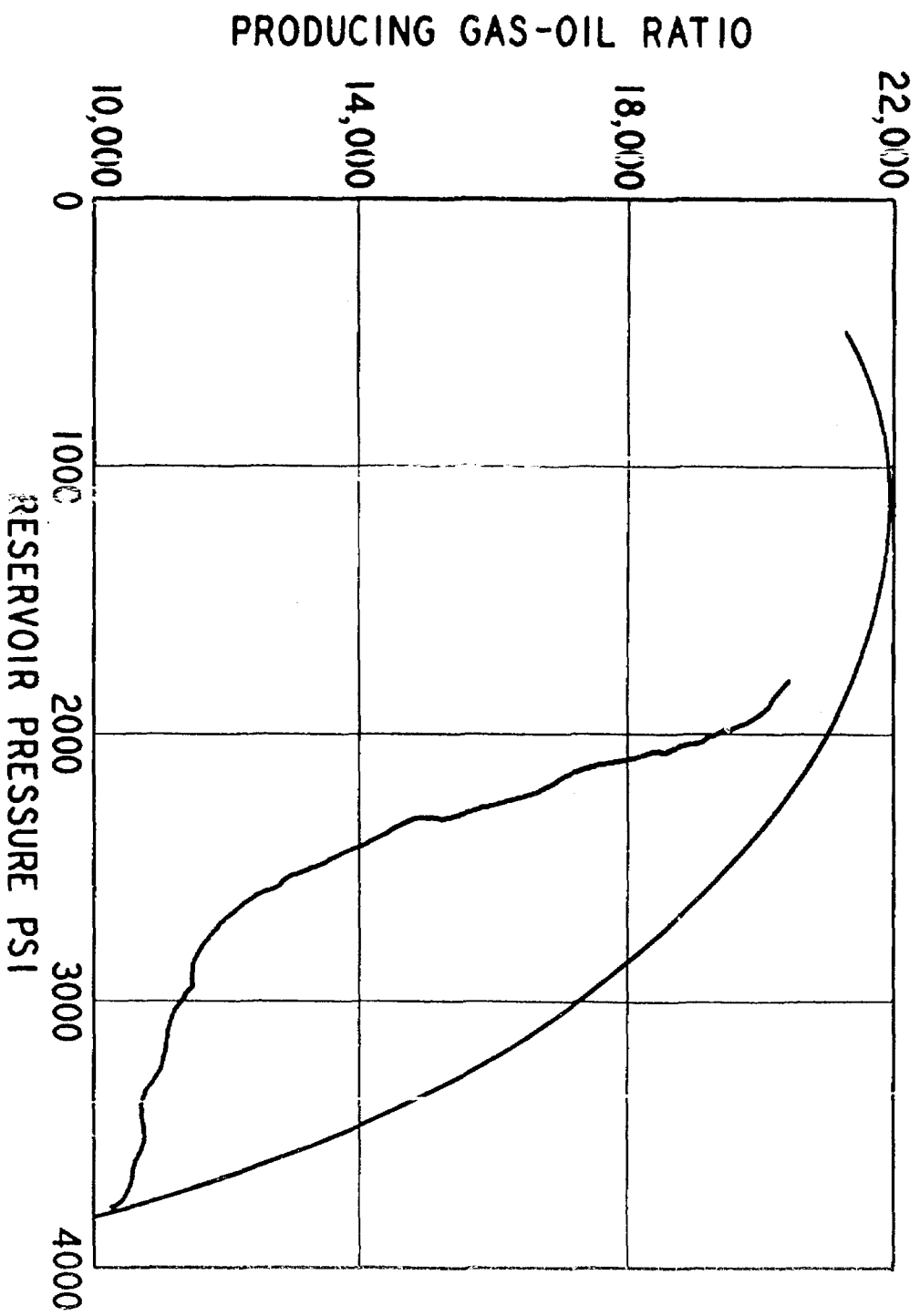


FIG. 10 COMPARISON BETWEEN LABORATORY PREDICTION
AND EXPERIENCE IN AN EXCEPTIONAL FIELD

BEFORE THE
Oil Conservation Commission
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 727

TRANSCRIPT OF PROCEEDINGS

ADA DEARNLEY AND ASSOCIATES
COURT REPORTERS
605 SIMMS BUILDING
TELEPHONE 3-6691
ALBUQUERQUE, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
December 14, 1955

IN THE MATTER OF:

CASE 727

In the matter of the application of the Oil Conservation Commission, upon its own motion to consider an order amending, revising, or abrogating existing rules and regulations of the Oil Conservation Commission and/or promulgating additional rules and regulations relating to gas pool delineation, gas proration, and other related matters affecting or concerning the Blinebry Gas Pool, Lea County, New Mexico.

The order contemplated will pertain to gas pool delineation, gas proration, gas well spacing, gas well allowable, gas proration units and related matters affecting the Blinebry Gas Pool situated in Lea County, New Mexico.

In considering the foregoing matter, notice is further given that the contemplated order may affect the Blinebry and/or Terry-Blinebry Oil Pools situated in Lea County, New Mexico.

BEFORE:

Honorable John F. Simms, Jr.,
Mr. E. S. (Johnny) Walker,
Mr. William B. Macey.

TRANSCRIPT OF HEARING

MR. MACKEY: The next case on the docket is Case 727, which was continued from last month. Does anyone have a statement or comment they wish to make in connection with this case, any testimony?

We had a motion from last month for a continuation to study this which I believe has been distributed among the members.

If there is no statements or testimony, we will take Case 727 under advisement.

C E R T I F I C A T E

STATE OF NEW MEXICO)
 : ss
COUNTY OF BERNALILLO)

I, THURMAN J. MOODY, Court Reporter, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF, I have affixed my hand, this, the 16th day of December, 1955.

Thurman J. Moody
Court Reporter.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 728

TRANSCRIPT OF HEARING

JANUARY 14, 1959

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
Phone CHapel 3-6691

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

Application of El Paso Natural Gas Company :
for an order revising and amending Order :
No. R-586. Applicant, in the above-styled : CASE NO.
cause, seeks an order amending Order No. : 728
R-586 to extend the vertical limits of the :
Justis Gas Pool in Lea County, New Mexico. :

BEFORE:

John Burroughs
Murray Morgan
A. L. Porter

T R A N S C R I P T O F P R O C E E D I N G S

MR. PORTER: We will take up next Case 723.

MR. PAYNE: Case 728. Application of El Paso Natural
Gas Company for an order revising and amending Order No. R-586.

MR. SETH: For the record, Garrett Whitworth and Oliver
Seth representing El Paso Natural Gas Company. We have one
witness, Charles Hollenshead, to be sworn.

(Witness sworn.)

CHARLES T. HOLLENSHEAD

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

DIRECT EXAMINATION

BY: MR. WHITWORTH:

Q State your full name, please.

MR. PORTER: Mr. Whitworth, let me ask for other appearances in this case at this time.

MR. KELLAHIN: Jason Kellahin of Kellahin and Fox, Santa Fe, New Mexico, representing Amerada Petroleum Corporation. I have associated with me Mr. H. D. Bushnell, a member of the Oklahoma bar, to handle the case for Amerada, with the permission of the Commission.

MR. PORTER: Any other appearances?

MR. KASTLER: Bill Kastler, representing Gulf Oil Corporation. I am not here to present any testimony, but just to concur.

Q (By Mr. Whitworth) State your full name, please.

A Charles T. Hollenshead.

Q Mr. Hollenshead, by whom and in what capacity are you employed?

A I am employed by the El Paso Natural Gas Company in the capacity of area geologist for southeastern New Mexico.

Q Have you previously qualified as an expert witness before this Commission?

A No.

Q Will you give a brief summary of your scholastic training and professional experience?

A I graduated from Texas Western College in June 1950 with a bachelor of science degree in geology. In May of this year

I will have been employed as a geologist for seven years by El Paso Natural Gas Company. Previous to employment by El Paso, I was employed by Baroid Well Logging Service as a logging engineer.

Q In your work with El Paso Natural Gas Company, have you had occasion to study and review the vertical limits of the Justis Gas Pool?

A Yes, sir.

Q And in this study, have you had occasion to study the zones immediately underlying the Justis Gas Pool in Lea County, New Mexico?

A Yes.

MR. WHITWORTH: We ask that the qualifications of the witness be accepted.

MR. PORTER: They are accepted.

Q (By Mr. Whitworth) Will you state to the Commission what the present vertical limits of the present gas --

A The present vertical limits, as defined by the Commission, extend from the Glorieta datum, or top of Glorieta, down to a distance of two hundred feet below the Glorieta.

Q Does this form a common reservoir of gas in the Justis Gas Pool?

A Yes.

Q Have you made studies indicating that there should be more interval included in the Justis Gas Pool than is presently defined?

A Yes, sir.

Q What interval do you propose as the vertical limits of the Justis Gas Pool?

A We propose that the vertical limits of the Justis Gas Pool be tied to correlative markers. The type well that has been chosen for the Justis Gas Pool is Gulf Oil Corporation's Number 8 McBuffington, located 1980 feet from the west line, 330 feet from the south line, in Section 13, Township 25 South, Range 37 East, in Lea County, New Mexico. The proposed top of the Justis Gas Zone, or the top of the Glorieta, lies at a depth of 4610 feet minus 1519 subsea in this well. The proposed base of the Justis Gas Pool lies forty feet above a correlative marker found at a depth of 4890 feet minus 1799 subsea in said well.

I believe that at this time that it would be wise to point out that the proposed vertical limits of the Justis Gas Zone vary from 221 feet below the top of the Glorieta in the Kewanie Number 5 Carlson "B" 13 Well on the east flank of the structure, to 280 feet in the Olsen Number 1 Wimberly on the west flank of the structure.

Q Now, with this extension that you have proposed to the vertical limits, would this gas pool still be a common reservoir of gas, in your opinion?

A Yes.

Q Have you prepared an exhibit showing all the wells in the Justis Gas Pool?

A Yes.

Q What is this exhibit?

A The first exhibit is El Paso Natural Gas Company's Exhibit No. 1. It is a structural map of the Justis Gas Pool.

Q How was this exhibit prepared?

A This exhibit was prepared by using correlative information from all available electric gamma ray logs in the pool.

Q And what does it show?

A The exhibit shows a structural interpretation of the Justis Gas Pool, and is drawn from Glorieta formation tops. It shows the locations of sections A, A prime; B, B prime; C, C prime, and D, D prime. In addition, it shows the location of the wells that are presently producing from the Justis Gas Pool. It also shows the location of oil wells that are presently producing below the vertical limits of the Justis Gas Pool and the formation from which they are producing, and in addition, it shows the location of four Justis Wells that are presently producing below the presently defined vertical limits.

Q Now, have you prepared exhibits of these cross sections that you mentioned?

A Yes.

Q What is the next exhibit?

A This next exhibit is El Paso Natural Gas Company's Exhibit No. 2, and it is a, generally, a north-south cross section through the Justis Gas Pool extending from Gulf Oil Corporation's

No. 6 "N" Ramsey Well on the south flank of the structure generally northward. It would be right here, generally northward, to Cities Service Oil Company's Number 1 "B" Hodges Well on the north flank of the structure.

Q How was this exhibit prepared?

A This exhibit was prepared by using standard correlating procedures with gamma ray neutron and electric logs, and by using available well completion information.

Q What does the exhibit show?

A This exhibit shows the correlation of the various formation tops. It shows the relative structural position of the wells used in the cross section. It shows Gulf Oil Corporation's Number 8 McBuffington Well, which is a typed log, and on the log it shows the Glorieta datum, or top of the Glorieta, which is shown at a depth of 4610 feet, minus 1519 subsea. It shows the correlative marker to which the base, the proposed base of the Justis Gas Pool is tied, and it shows the proposed base of the Justis Gas Pool being 40 feet above the correlative marker. In addition, it shows well completion information.

Q Now, you were pointing at the Gulf Oil Corporation's McBuffington Number 8 well, were you not?

A Right.

Q That's the well you mentioned previously?

A Yes. The cross section also shows a general north-south correlation of these various zones mentioned.

Q Would you point out to the Commission the marker in that well that you mentioned previously?

A The marker to which the proposed base of the Justis Gas Pool is tied, is located right here (indicating) at a depth of 4890 feet, a minus 1799 subsea.

Q Do you have an exhibit of another cross section?

A Yes. This exhibit is El Paso Natural Gas Company's Exhibit No. 3, and is a general east-west cross section of the Justis Gas Pool extending from Anderson Pritchard Oil Company's Number 5 Harrison Well on the east flank of the pool, generally northeastward, to El Paso Natural Gas Company's Number 1 Greenburg Well, and the farthest flank here, right here (indicating), from here to here on Exhibit 1.

Q How was this exhibit prepared?

A This exhibit was prepared by using standard correlating procedures, with gamma ray neutron and electric logs, and by using available well completion information.

Q What does this exhibit show?

A This exhibit shows the correlation of the various formation tops, shows the relative structural position of the wells on the exhibit, shows Gulf Oil Corporation's Number 8 McBuffington Well, and shows the Glorieta datum, and the proposed top of the Justis Gas Pool being at a depth of 4610 feet, a minus 1519 subsea. It shows the correlative marker at a depth of 4910 feet -- at 4890 feet minus 1799 subsea, to which the proposed base of the Justis

Gas Zone is tied. This proposed base being 40 feet above the correlative marker. In addition, it shows well completion information.

Q Do you have another exhibit of a cross section?

A Yes. This exhibit is El Paso Natural Gas Company's Exhibit No. 4. It is a, generally, a north-south porosity cross section extending from Gulf Oil Corporation's Number 6 Ramsey "B" Well on the south flank of the structure, generally northward, to the Kewanee Oil Company's Number 5 Carlson "N" 13 Well in the northeast flank of the structure, extending from here to here (indicating) on Exhibit No. 1.

Q How was this exhibit prepared?

A This exhibit was prepared by using standard correlating procedures, with micrologs where available, and in cases where they weren't available, whatever was available that would show porosity.

Q And what is the purpose of this exhibit?

A The purpose of this exhibit is -- This exhibit shows the proposed vertical limits of the Justis Gas Pool. It shows -- Shown on the exhibit are the porosity zones within the proposed vertical limits, represented by the green on the exhibit. Porosity zones below the proposed limits are also shown in green. It shows the relationship of these porosity zones within the proposed vertical limits, and it shows how these porosity zones are tied in with each other.. These are shown by the dark blue lines. And, in addition, it shows an impervious zone, as shown by this solid

red zone right here, shows an impervious red zone, which we believe separates the upper gas producing zone from the lower porosity zones, this zone right here from which the Kewanie Number 5 Carlson "N" 13 is presently producing oil.

Q Now, the base of the vertical limits that you have proposed is in that impervious zone that you mentioned?

A Yes, and all the wells drilled in the Justis Gas Pool. The proposed base of the Justis Gas Pool lies within this impervious barrier.

Q Is that impervious barrier common to all wells in the Justis Gas Pool?

A Yes.

Q And the impervious barrier is shown on that exhibit by the solid red, is that true?

A That is true. It is shown by the solid red zone across here (indicating). The proposed base being shown by this dark blue line within the impervious zone.

Q Now, based on this exhibit and those that you have shown previously, what conclusions do you have with respect to the vertical limits of the Justis Gas Pool?

A Well, that all of the porosity zones above the proposed base of the Justis Gas Pool form a common reservoir, and we believe that this reservoir is separated from any lower porosity or lower reservoir by this impervious barrier.

Q What is your next exhibit?

A This next exhibit is El Paso Natural Gas Company's Exhibit Number 5.

MR. PORTER: Can I ask you a question right at this point? What did you say the nature of the impervious barrier was?

A Beg pardon.

MR. PORTER: What did you say the nature of the impervious barrier was?

A It is a tight zone that covers the entire extent of the Justis Gas Pool. We believe it is an impervious barrier separating the upper gas producing zone, or lower producing zone.

MR. MORGAN: What is it, a tight shale?

A No, a tight dolomite. It is a tight dolomite.

MR. PORTER: Thank you.

Q (By Mr. Whitworth) Now, what is this exhibit?

A This is El Paso Natural Gas Company's Exhibit No. 5, and it is a, generally, a north-south cross section extending from Gulf Oil Corporation's Number 6 Ramsey "B" on the south flank of the structure, generally northward, to Kewanee Oil Company's Number 1 Carlson "B". It is the same location as here (indicating) on Exhibit No. 1.

Q What is the purpose of this exhibit?

A The principal purpose of this exhibit is to show the relationship of the proposed vertical limits of the Justis Gas Pool to the Blinbry oil production that exists below it.

Q And would you say that any part of the proposed vertical

limits of the Justis Gas Pool is included in the Blinebry production?

A No, it is not.

Q What are your red lines on that exhibit?

A The red lines are the proposed vertical limits of the Justis Gas Pool.

Q What are the blue lines?

A The upper blue line is the correlative marker to which the proposed base of the Justis Gas Pool is tied. The red, this lower limit, this lower suggested lower limit, being 40 feet below the marker in all cases, in all wells.

Q What is your next exhibit?

A Our next exhibit is El Paso Natural Gas Company's Exhibit No. 6, and it is a data sheet showing well completion information on the Justis Gas Wells. In addition, it shows the distance from the Glorieta datum to the base of the perforations on Justis Gas Wells, shows the distance from the Glorieta datum to the proposed base of the Justis Gas Pool. It shows drillstem tests in the Justis Gas Zone of the Justis Gas wells. It shows cumulative distillate and gas production figures to October the 1st, 1958.

Q How many gas wells are in the Justis Gas Pool?

A There are 11.

Q How many of these 11 wells have perforations to depths below the present vertical limits of the Justis Gas Pool?

A Four wells.

Q Four wells?

A Four wells.

Q Which four are these?

A First is El Paso Natural Gas Company's Number 1 "B" Carlson Federal, located in Section 25, Township 25 South, Range 37 East. This well has perforations, two hundred -- a distance of 207 feet below the Glorieta datum, or top of the Glorieta.

The next well is Gulf Oil Corporation's Number 3 McBuffington, located in Section 13, Township 25 South, Range 37 East, and this well has perforations 220 feet below the top of the Glorieta.

The next well is Gulf Oil Corporation's Number 3 "F" Ramsey, and this well had perforations to a distance of 253 feet below the top of the Glorieta, and the last well is Westates Number 1 "A" Carlson Federal, located in Section 25, Township 25 South, Range 37 East, and this well had perforations to a distance of 256 feet below the top of the Glorieta.

Q Could any of these four wells have perforations to depths below the proposed vertical limits of the Justis Gas Pool?

A Yes. Two of these wells will have short, perforations for a short distance below the proposed vertical limits.

Q Which are the two that you mentioned?

A The Gulf Oil Corporation's Number 3 "F" Ramsey has perforations 16 feet below the proposed vertical limits of the Justis Gas Pool.

Westates Number 1 "A" Carlson Federal has perforations 18

feet below the proposed vertical limits of the Justis Gas Pool.

Q In these two wells, is there any significant gas production?

A We believe there is no significant gas production from these perforations below the proposed vertical limits of the Justis Gas Pool.

Q Should the proposed vertical limits of the Justis Gas Pool be adopted, what do you suggest the Commission do with respect to these two wells that you mentioned?

A Well, sir, that, of course, would be up to the Commission. The Commission would either have to make exceptions to these two wells, or require that they be plugged back to the vertical limits of the Justis Gas Pool.

Q Do you have any particular reason for using Gulf Oil Corporation's Number 8 McBuffington Well?

A Yes, sir.

Q What is that reason?

A This well lies in both cross section AA prime and in cross section BB prime, and it lies near the center of the Justis Gas Pool.

Q I think you covered this before, but I want to make sure. In your opinion, would all of the zones included in the proposed vertical limits of the Justis Gas Pool form a common reservoir of gas?

A Yes, sir.

Q Could you tell why this is true?

A Well, sir, we believe that all of the porosity within the proposed vertical limits forms a common reservoir separated by lower reservoirs or lower zones of porosity by this impervious barrier in which our proposed lower limit lies.

Q Is that communication between these zones within the proposed vertical limits?

A Yes. If by no other reason, by perforations in the bore hole.

Q Why didn't you include a greater interval in your proposed vertical limits of the Justis Gas Pool?

A Well, we didn't include a greater interval because we feel all of the porosity zones within the proposed vertical limits form a common reservoir that is separated from any lower porosity reservoir by that impermeable barrier.

Q To your knowledge, would the granting of this application prevent waste?

A Yes.

Q And would the granting of this application, in your opinion, violate correlative rights?

A No.

Q Do you have anything further that you would like to add to your testimony?

A No, except, I believe, that the top of said gas pool should be the top of the Glorieta formation, which is found at a

depth of 4610 feet, minus 1519 feet subsea in Gulf Oil Corporation's Number 8 McBuffington Well located 1980 feet from the West line and 330 Feet from the South line of Section 13, Township 25 South, Range 37 East, Lea County, New Mexico. The base of said gas pool should be 40 feet above the marker, above the correlative marker in said well, found at 4890 feet, minus 1799 feet subsea.

Q Were El Paso Exhibits 1 through 6 prepared under your supervision?

A Yes.

MR. WHITWORTH: We ask these exhibits be admitted.

MR. PORTER: Any objection to the admission of El Paso's Exhibits 1 through 6? They will be admitted.

Any questions of the witness?

MR. BUSHNELL: Yes.

MR. PORTER: Mr. Bushnell.

CROSS EXAMINATION

BY: MR. BUSHNELL:

Q Mr. Hollenshead, is that correct?

A Yes, sir.

Q I understand now that you had picked your recommended base of the Justis Gas Pool from the Gulf McBuffington Number 8 Well at the interval 40 feet above the 4890 foot dip, is that correct?

A That's correct, 40 feet above the 4890 foot dip.

Q Now, you said, in preparing these exhibits, that you

had used both gamma ray and electric logs, is that right?

A Where available, yes, sir.

Q Were gamma ray logs always available on all of these wells?

A No, sir, not in all cases.

Q But you had electric logs in all instances?

A No, sir, not in all instances.

Q You had electric logs in all instances, except in those wells where you may have had gamma ray logs, is that correct?

A We had some type of log on all of the wells, yes, sir.

Q What I am getting at is, the pick that you have used in this Gulf McBuffington Number 8 well is such that it shows up in the electric log in contrast with the gamma ray --

A It is better developed on the gamma ray curving than anything else. It is not an excellent correlative marker on the electric log, it is a better marker on the gamma ray. However, it can be correlated on the electric logs, I believe.

Q Referring to your Gulf McBuffington Number 8 log on any one of your exhibits, can you pick the marker from an electric log? By the way, is it an electric log or gamma ray log that is used on this particular well?

A Gamma ray log.

Q I would like to ask if the marker at 4890 feet on Gulf's McBuffington Number 8 is a marker that could be more readily fixed on electric logs than other wells where a gamma ray log is not

available?

A What was the depth again, sir?

Q 4970 feet in the Gulf McBuffington Number 8.

A There is a well developed marker in the Gulf Number 8 Well on the gamma ray and neutron log. I do not have an electric log with me on the well.

Q Well, would you look at other wells there that are electric logs -- Excuse me, look at other logs which are electric logs and see if this marker is well shown.

A What was that depth again, sir?

Q 4970 feet, as picked in the McBuffington Number 8.

A Well, on this electric log cross section, our Exhibit No. 4, which is an electric cross section, we do not have the Gulf Number 8 McBuffington Well. I have several other Gulf wells. Gulf Number 3 --

Q Do you find --

A --and Number 5 McBuffington, which are fairly close to the Number 8.

Q All right. And what is that exhibit number, No. 4?

A Number 5.

Q Number 5?

A Yes.

Q And all of those logs shown there are electric logs?

A No, sir, where available there are electric logs. There were wells where electric logs were not available.

Q Referring only to the electric logs as shown on this Exhibit No. 5, do you find a correlative point that is well shown at that interval, correlative to the 4970 feet interval in the Gulf McBuffington?

A There is a marker at approximately that zone, yes, sir, fairly well developed.

Q Fairly well developed?

A It is fairly well developed, yes, sir.

Q Would you say it is better developed than those electric logs at the point that you have recommended?

A I believe that on the electric log it is possibly a little better developed than the proposed, than our marker to which the proposed base is tied.

Q Would you be able to say whether this marker that we have now, referred to as being better shown would, if that marker were used as a recommended base of the Justis Pool in this order, would there not be, would there be need for any exceptions, well exceptions?

A Well, sir, we believe that all of the porosity zones within our proposed limit form a reservoir that is separated from any lower porosity zones or lower reservoir zones.

Q Is there any porosity below this dense zone that is not in the Glorieta?

A Yes, sir Number 5 Carlson "B" 13 is producing oil from a zone, from a porosity zone immediately below where we are

STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO)

ss

I, J. A. Trujillo, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in Stenotype and reduced to typewritten transcript, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal, this the 16th day of January, 1959, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Joseph A. Trujillo
NOTARY PUBLIC

My Commission Expires:

October 5, 1960

suggesting the base of the Justis Gas Pool.

Q Is that in the Glorieta?

A That is in the Glorieta, probably in the base of the Glorieta. I am not familiar enough with exactly where the base of the Glorieta is. I don't know where the base of the Glorieta is.

Q Let me ask you another question. This is a repeat because I didn't get my answer. If you used the 4970 foot correlative pick we've talked about here --

A Yes, sir.

Q --would there not be less need for exceptions of this marker, the wells in this pool?

A Well, sir, I think we would be including more than one reservoir, we would be including a gas reservoir and possibly an oil reservoir, and possibly another gas reservoir, if gas exists below the oil reservoir.

Q Well, you are still not answering my question.

MR. PORTER: Mr. Bushnell, are you now -- the question was if they used--what was it, 4790?

MR. BUSHNELL: 4970 feet.

MR. PORTER: 4970 instead of 4890. I got a figure of 4890.

MR. BUSHNELL: He is using 40 feet above the correlative point.

Q (By Mr. Bushnell) As I understand your testimony, how many wells would have to be excepted, did you recommend?

A There would be two wells.

Q I thought you said four wells.

A No, there are four wells that are presently perforated below the present limits of the Justis Gas Pool. Of these four, two would still be below the recommended vertical limits.

MR. BUSHNELL: That is all.

MR. PORTER: Technically speaking, they got four wild-cat wells in the Justis Gas Pool. Let's take a five minute recess. Let's make it a very short one.

(Recess)

MR. PORTER: The hearing will come to order, please. Mr. Bushnell, I believe had concluded with his questions. Anyone else have a question of Mr. Hollenshead?

MR. NUTTER: I have some.

MR. PORTER: Mr. Nutter.

QUESTIONS BY MR. NUTTER:

Q Mr. Hollenshead, I believe you stated there were four wells shown on Exhibit 1 which were presently perforated below the vertical limits as now defined by the Commission, is that correct?

A That's correct, yes, sir.

Q Are those four wells shown on any of your cross sections?

A I don't believe all four of them are shown on any one cross section.

Q Are all four shown on one or more of the cross sections,

however?

A Let me check here and see. The El Paso Natural Gas Company's Number 1 "B" Carlson Federal is shown on the north-south cross section, or cross section AA prime.

MR. UTZ: What Exhibit is that?

A That is Exhibit No. 2.

Q (By Mr. Nutter) All right. The --

A The Gulf Number 3 Ramsey is shown also on Exhibit No. 2. Let me check the exhibit to make sure here.

Q All right, sir.

A I believe those are the only two wells shown on the cross section.

Q So we don't have cross sections or logs on the other two wells which are perforated below the present limits?

A No, sir. I have information on the data sheet explaining how far below the Glorieta they are perforated.

Q Mr. Hollenshead, referring to your Exhibit No. 4, I wonder if you would go through this just a little bit more for me. What are the blue lines on that exhibit, what do they represent?

A The green lines represent porosity as indicated by the micrologs, or gamma ray neutron, whichever is used in the section. The blue lines are suggested interconnectings of these various porosity zones indicating that all of the porosity zones within the proposed vertical limits form a common reservoir.

Q And what do the two red lines at the bottom of the

exhibit represent?

A The middle red line, or the first red line, the first red line under the solid dense zone is the location of the correlative marker to which the proposed base of the Justis Gas Zone is tied. In other words, this proposed base, or this purple line, is 40 feet above the correlative marker in all wells.

Q In other words, this upper red line is the line that indicates the point at 4890 in that Gulf Number 8 McBuffington Well?

A That is correct.

Q And the lower red line?

A The lower red line is just another correlative zone that I have put on the sections.

Q That is another marker that is readily picked up on all of the logs that you have available?

A That is correct, yes, sir.

Q If the lower limits of the pool were tied to this lower correlative marker, would it be possible that some of these exceptions which would otherwise be necessary, could be eliminated?

A Well, sir, we feel that if we did put that lower, that marker, that we would have two distinct reservoirs within the vertical limits of the Justis Gas Pool.

Q So your prime objective has been to try to define the lower gas limits of the Justis within the impermeable zone that you have picked up in all of the wells, is that correct?

A Our purpose is to have these proposed lower vertical

limits fall within this impervious zone every where.

Q Is there any indication in any well, whether by the logs of the well or by any cores that are available in the area, that there is any impermeability or any fractures existing in this impermeable barrier?

A It is impermeable.

Q Is there any indication that there may be impermeability or fractures in this impervious zone?

A Yes, sir, there is a slight indication in the southeastern part of Section 24 of some very thin stringers of porosity being present within the impervious zone. However, we feel that this porosity is negligible. We feel it is not well developed enough for either gas or oil to be produced from --

Q Is there any pressure information available to compare the zones below the impermeable zone and above the impermeable barrier?

A I don't have any of that information, no, sir.

Q Do you think that that impermeable barrier is sufficient that we could take a well, such as the Gulf Ramsey Number 6, which I believe has some perforations below, or some porosity below, as well as above the impermeable zone, and authorize a dual completion for a well there?

A You mean a dual completion of --

Q Yes, with a packer set in the impermeable zone?

A I believe that that lower porosity zone from which the

Kewanie is presently producing oil, I believe the operator should have an opportunity to attempt to produce oil from the zone.

Q In this Gulf Ramsey Number 6, which is the westernmost well on your Exhibit No. 4, there is quite a bit of porosity above as well as below the impermeable barrier. Would you feel that a dual completion would be justifiable in a well such as this?

A Yes, I believe so.

Q You don't happen to know where that well is perforated, do you, Mr. Hollenshead?

A Is it the Gulf Number 6 Ramsey? The Gulf Number 6 Ramsey "N" located in Section 36, Township 25 South, Range 37 East?

Q Yes, sir.

A This well has five and a half inch casing set at 5797 feet. It is completed as an oil well from the Blinbry.

Q So this well is not completed in the Justis Pool at all?

A No.

Q Are there any other wells within the Glorieta formation, as you know the Glorieta formation, which are producing oil with exception of the Kewanie well?

A There is some distillate produced along with the gas in the Justis Gas Pool, yes, sir.

Q Mr. Hollenshead, I believe you stated that you didn't know the exact lower limits of the Glorieta formation?

A That's correct. I've talked with geologists from several

companies operating in the field, and each company seems to pick the base of the Glorieta at a different place, so there is a lot of confusion as to where the base of the Glorieta is. I haven't been able to pick it.

Q What would be your suggestion, Mr. Hollenshead, as to what should be done with the two wells which remain outside the vertical limits of the pool that you have proposed as the vertical limits?

A Well, sir, as I pointed out previously, these wells are perforated 16 and 18 feet below the proposed vertical limits, and we feel that the production that is coming from these perforations is negligible. However, that would be up to the Commission. If the Commission feels that these two wells should be excepted, fine, if they feel that the wells should be plugged back to the proposed base of the Justis Gas Pool, I am sure that El Paso would be willing to go along with whatever the Commission decides..

Q How many wells, to your knowledge, are producing from below the heavy red band that you have indicated on Exhibit 4?

A Below this zone (indicating)?

Q Yes, sir.

A You mean in the field?

Q Yes, sir.

A Well, there are numerous wells producing from the Blinbry from the Kewanie.

Q I mean from within the Glorieta formation?

A Those two wells mentioned.

MR. PORTER: Are you talking about the 11 wells?

MR. NUTTER: I am talking about Justis Gas Pool wells which would be producing below the impermeable barrier.

A None would be producing below the impermeable barrier. There are two that would be producing below the proposed vertical limits of the Justis Gas Pool.

Q This Kewanie well would be producing from below --

A Yes, but that is not a Justis Gas well, that is a wildcat.

Q Do you think that we should create a Justis Gas Pool for this zone?

A Well, sir, the Commission has set the Kewanie Number 5, Carlson "N" Number 5 as a wildcat. It is producing from a zone that is equivalent to this porosity here.

MR. PORTER: And it is an oil well?

A It is an oil well.

MR. PORTER: Thank you.

MR. NUTTER: That's all.

MR. PORTER: Mr. Stamets.

QUESTIONS BY MR. STAMETS:

Q Mr. Hollenshead, I wonder if you would look on Exhibit 4 and above the solid red band there, starting on Kewanie Oil Company's Number 1 Carlson, at about 2840, I notice in there, on

the log a similarity between the log in that zone and the red zone. Also, in the next well, the Gulf Oil Company's Number 5 McBuffington, at about 4800, I notice a similar zone, and at about 4850 another zone similar to your red band.

A You are looking at Exhibit No. 4?

Q Yes, sir.

A All right, sir.

Q Are those on the logs similar?

A I don't see any similarity at all, as far as porosity is concerned. Now, this is a porosity cross section, these are micrologs, and of course, they are going to vary. The micrologs are going to vary according to how the porosity varies from well to well.

Q Well, you know the nature of the formation from 4800, this is in the Gulf Number 5 McBuffington, from 4830 to 4850.

A You mean from a lithologic standpoint?

Q Yes, sir.

A It is dolomite, possibly contains dense stringers of sandstone.

Q Is that essentially the red zone?

A Yes, sir.

Q That is what I was getting at. It would appear that a zone of the same character as your red zone goes across at least to the Amerada Number 4 Wimberly at a point approximately 30 feet above your indicated red zone, separating the proposed

extension of the vertical limits from the present vertical limits.

A Well, sir, I worked with all the gamma ray logs and the electric logs that are available on the field, and I couldn't find any correlative marker in that part of the section that would carry for any areal extent of the field.

Q However, on the wells that I have just mentioned, would that be a reasonable assumption?

A I am not sure I quite understand. Now, you are looking at Exhibit Number 4, and it looks like porosity is varying quite erratically in this zone that you are talking about from well to well.

Q Well, let's say the zone runs from 30 to 40 feet above, starting at 30 to 40 feet above.

A 40 to 30 feet above?

Q Above the top of the indicated red zone.

A Well now, let me point out one thing, the indicated red zone, the top and the base are not correlative markers, they were established on the basis of porosity above and below. In other words, there is an impervious barrier extending from right here to right here (indicating) based on this microlog. There is an impervious barrier from here to here based on this log, and so on down the line. They are not correlative markers. This down here, which is the correlative marker to which the proposed base of the Justis Gas Pool is tied, and the upper, or the top of the Glorieta, which would be the upper proposed limit of the Justis

Gas Pool, those are the only two correlative markers, other than this extra one down here that has been shown.

Q I realize that, I am not trying to indicate the same depth from the top of each well or from sea level in each of these. I was just trying to indicate a relative depth from the top of the indicated red zone.

That's all the questions I have.

MR. PORTER: Anyone else have a question of the witness? The witness may be excused.

(Witness excused.)

MR. WHITWORTH: That's all we have.

MR. PORTER: Anyone else have any more evidence to offer in this case? Any statements to make, any comments?

MR. KASTLER: Bill Kastler, representing Gulf Oil Corporation. Our gas reservoir engineer has studied this application, and the proposed exhibits, and Gulf Oil Corporation concurs with El Paso's application.

MR. BUSHNELL: If the Commission please, we would like to recommend that the Commission consider the 4970 feet pick, as shown in the Gulf McBuffington Number 8 as the, and I would like to recommend that this be used, as the correlative marker to the base of the Justis Gas Pool, since this marker, as shown on the electric logs, is the better marker suggested in this case.

MR. PORTER: Anyone else have a statement?

The Commission will take the case under advisement.

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

* * * * *

TRANSCRIPT OF PROCEEDINGS

CASE NO. 727

Regular Hearing

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 18, 1934

IN THE MATTER OF:

Application of the Oil Conservation Commission,
upon its own motion to consider an order amend-
ing, revising, or abrogating existing rules and
regulations of the Oil Conservation Commission,
and/or promulgating additional rules and regula-
tions relating to gas pool delineation, gas
proration, and other related matters affecting
or concerning the Blinbry Gas Pool, Lea County,
New Mexico.

Case No.
727

BEFORE:

Honorable Edwin L. Mechem
Mr. E. S. (Johnny) Walker
Mr. R. R. Spurrier

TRANSCRIPT OF HEARING

MR. SPURRIER: The next case on the docket is Case 727.
I would like for a moment to consider Case 727 and 728 and 729. I
think Mr. Macey of the staff has some comments and recommendations
in these three cases.

MR. MACEY: Mr. Spurrier, with particular reference to 727
and 728, I would like to move that the cases be continued to the
July hearing in order that the rules which we are now working on
to present to the Commission in Case 673 will be available for
presentation in possibly a modified form in these cases in July.

Another point is that in Case 727 we neglected to include the
Terry-Blinbry Oil Pool in the advertisement. There is no question

but what the Terry-Blinebry Oil Pool is effected just as much as the Blinebry Oil Pool. Therefore, I would like to move for a continuance of 727, 728 until the regular hearing in July.

MR. SPURNIER: Is there any one who would like to present testimony in either Case 727 or 728 at this time, particularly 727 at this moment? Is there objection to Mr. Macey's motion to continue until July? If not we will recommend to the Commission that the case be continued to the regular hearing, July 15th.

C E R T I F I C A T E

I, ADA DEARNLEY, do hereby certify that the above and foregoing transcript of proceedings before the New Mexico Oil Conservation Commission, in Mabry Hall, Santa Fe, New Mexico on June 16, 1954, is a true and correct record to the best of my knowledge, skill and ability.

Dated at Albuquerque, New Mexico, this 19th day of June, 1954.


Notary Public

My Commission Expires:
June 19, 1955

BEFORE THE
Oil Conservation Commission
SANTA FE, NEW MEXICO
January 2, 1951

IN THE MATTER OF:

CASE NO. 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

TRANSCRIPT OF PROCEEDINGS

ADA DEARNLEY AND ASSOCIATES
COURT REPORTERS
ROOMS 105, 106, 107 EL CORTEZ BUILDING
TELEPHONE 7-9546
ALBUQUERQUE, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
Albuquerque, New Mexico
October 20, 1954

IN THE MATTER OF:

Application of the Commission, upon its own motion to consider an order amending, revising, or abrogating existing rules and regulations of the Oil Conservation Commission, and/or promulgating additional rules and regulations relating to gas pool delineation, gas proration, and other related matters affecting or concerning the Blinebry Gas Pool, Lea County, New Mexico.

Case No. 727

The order contemplated will pertain to gas pool delineation, gas proration, gas well spacing, gas well allowable, gas proration units and related matters affecting the Blinebry Gas Pool.

Notice is further given that the contemplated order may affect the Terry Blinebry and Blinebry Oil Pools situated in Lea County.

Application of the Commission, upon its own motion, for an order amending, revising, or abrogating existing rules and regulations of the Oil Conservation Commission and promulgating additional rules and regulations relating to gas pool delineation, gas proration, and other related matters affecting or concerning the Tubb, Byers-Queen and Justis Gas Pools, Lea County, New Mexico.

Case No. 728

The order contemplated will pertain to gas pool delineation, gas proration, gas well spacing, gas well allowable, gas proration units and related matters affecting the following designated gas pools situated in Lea County: Byers-Queen Gas Pool, Justis Gas Pool, Tubb Gas Pool.

CONSOLIDATED

TRANSCRIPT OF HEARING

MR. MACEY: The next case on the docket is the consolidated cases, 727 and 728. In order to save time I would appreciate it if all the witnesses would stand to be sworn at this time.

(Witnesses sworn.)

MR. MACEY: Mr. Malone will you proceed, please?

MR. MALONE: May it please the Commission, Gulf Oil Corporation has caused certain studies to be made of the area involved in these consolidated cases, on the basis of which it will recommend to the Commission the retention of the Blinebry Gas Pool, the Terry-Blinebry as an oil pool, and the Blinebry Oil Pool, with certain minor modifications of the horizontal limits of those pools. We will now present testimony on the basis of which those recommendations will be made to the Commission. I will ask Mr. R. L. Boss, the first witness to take the podium and the microphone.

R. L. BOSS

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

DIRECT EXAMINATION

By MR. MALONE:

Q Will you state your name to the Commission?

A R. L. Boss.

Q Where do you live?

A Roswell, New Mexico.

Q By whom are you employed?

A Gulf Oil Corporation, Fort Worth Production Division.

Q You have testified before the Commission on previous occasions, have you not?

A I have.

Q And, have had a change of position since your last testimony?

A That is correct.

Q What is your present position with Gulf, Mr. Boss?

A I am an Assistant Zone Exploration Manager of Zone 8, which comprises the eastern half of New Mexico, and twelve adjacent counties in Texas.

Q How long have you been employed by Gulf Oil Corporation, Mr. Boss?

A Oh, slightly over 26 years.

Q What part of that time has been spent in New Mexico?

A Sixteen years.

Q You have been familiar with the development of the oil and gas pools in southeastern New Mexico during that period of time?

A Yes, sir.

MR. MALONE: Are the witness's qualifications satisfactory to the Commission?

MR. MACEY: Yes, they are.

Q Have you made a study of the geological conditions in the area of the Blinebry Gas Pool which is the subject of this hearing?

A I have.

Q What was the purpose of that study, Mr. Boss?

A The primary purpose was an attempt to resolve the possible discrepancies that might exist in the several pools now designated as the Blinebry Pools.

Q Have you prepared an Exhibit which delineates those present pools in the Blinebry?

A Yes, sir.

Q Will you refer to that Exhibit as Exhibit 1 and explain it to the Commission, please?

(Marked Gulf Oil Corporation's
Exhibit No. 1, for identification.)

A Exhibit 1 is merely a map showing the - on which are shown the Blinebry Gas Wells, the Tubb Gas Wells, The Blinebry Oil Wells, and the Terry-Blinebry Oil Wells.

Q Would you trace the delineation of those pools on the Exhibit?

A The pool boundaries are indicated in representative colors as indicated by the legend. The green area is the Terry-Blinebry Pool; the yellow boundary is the Tubb Gas Pool; the red boundary is the Blinebry Gas Pool; and the brown represents the Blinebry Oil Pool. In addition, we have a trace of the cross section that will be introduced as a subsequent exhibit, showing its course through the Blinebry area.

Q When, if you know, was the discovery well in the Blinebry Gas Pool drilled, Mr. Boss?

A I believe the Blinebry gas distillate pay was early in '45, was the first well completed in that pool.

Q When, if you know, was the discovery well in the Terry-Blinebry Oil Pool completed?

A It was completed in 1952.

Q Is Gulf Oil Corporation the owner of or interested in acreage in those pools?

A Yes.

Q Can you state approximately what percentage of the acreage

in the pools is owned by Gulf, or in which they are interested?

A Approximately 20 to 25 per cent.

Q You referred to a trace which is carried through Exhibit 1, of a cross section, will you refer now to Exhibit 2 which is the cross section?

(Marked Gulf Oil Corporation's
Exhibit No. 2, for identification.)

A Exhibit 2 is merely a north-south cross section through the Blinebry pools from the northern extremity in the Terry-Blinebry pool through the major gas pool and terminates at the southern extremity with a Blinebry oil well. It merely shows the correlation of diagnostic marker horizons through the area and shows the relation of the Blinebry zone to upper and lower markers. Also, on the Exhibit are shown the present vertical limits of the Blinebry zone as defined by the Commission Order 464.

Q What are the present defined vertical limits of that pool as defined by that Order, Mr. Boss.

A The limits are referred to horizon here, which on this cross section is indicated as top Blinebry, which corresponds to the Blinebry marker in the order and the zone, the vertical limits refer to this datum or 75 feet above this marker to 300 feet below it. The section shows the point at which this marker curves in the section. It is readily recognized throughout the field and offers an easily, an unquestioned horizon that nearly everyone can trace with no difficulty. It also represents the top of the major pay of the Blinebry zone. The upper hundred feet, or the hundred feet immediately below that horizon is generally the most porous and permeable of the entire section now

assigned to the Blinebry pay.

Q Is that up 100 feet the producing section, whether production of oil or gas is encountered?

A Generally so. The major gas distillate production through the Blinebry Gas Pool and the oil production in the Terry-Blinebry Oil Pool are found within that limit.

Q Before proceeding from Exhibit 2, Mr. Boss, would you state how the Blinebry marker is identified by the Order of the Commission?

A The Order refers to a specific point in a specific well. The Humble State well No. 20, located in Section 2 of 22 South, 37 East, is the key well and the Blinebry marker is referred to at a specific depth. I believe it is 5,947 feet. In order that you might have an exact point for your further reference to that horizon that specific well and location is used. That horizon here is the identical one as referred to in the order.

Q I understood you to say that the well at the north and south extremity of the cross section were both oil wells and the remaining wells gas wells, is that correct?

A That is not entirely correct. The northern most well is the Gulf No. 31, Harry Leonard, which is a Blinebry well. The remaining two, three, four, and five, are gas wells with the exception of four, which is a Drinkard well. We have used that because that section was cored entirely from the Glorietta into the Drinkard pay. We used that in subsequent exhibit and testimony.

Q Will you point out each of the six wells on Exhibit 1 on the trace.

A The northern-most well is the Gulf No. 3, Leonard A Blinebry producer in the Terry-Blinebry pool. Number 2 is the Gulf No. 4, Eubanks, a dually completed Blinebry producer in Section 22, 21-S, 37-E. Well number 3 is Gulf No. 6, Owen, a dual producer in Section 34, 21-S, 37-E, Blinebry gas. Number 4 is the Gulf No. 4, Hughes, located in Section 14, 22-S, 37-E. Number 5 is the Gulf No. 5, Vivian, in Section 30, 22-S, 38-E, Blinebry gas well, and number 6 is the Gulf No. 1, Pike, Section 0, 23-S- 38-E, a Blinebry oil well.

Q Does the information from which Exhibit 2 was prepared and the study which you have made of the geological conditions indicate that the producing zone is continuous through those five wells on the cross section?

A The zone can be correlated entirely through the field, yes; particularly this uppermost unit.

Q What is your opinion as to whether or not all of those wells are producing from a common reservoir?

A There seems to be little question that the wells in the Blinebry gas pool and the Terry-Blinebry oil pool are a common source of supply.

Q Will you now refer to Exhibit 3 and state what is portrayed by this exhibit?

(Marked Gulf Oil Corporation's
Exhibit No. 3, for identification)

A Exhibit 3 is a structure contour map, subsurface map contoured on the top of this Blinebry horizon Blinebry marker. It depicts the structure at that level throughout the Drinkard, throughout the Blinebry pools. In addition, we have outlined

certain other characteristics of these pools. The area encompassed by the dashed red line is the assumed productive limit of the Blinebry pay.

Q Will you outline that area as shown on the Exhibit?

A It is this area which rims the shaded area both the green and the pink in this Exhibit. This represents our interpretation of the productive limits of this Blinebry pay and it, in effect, represents a porosity pinch-out. This data from which this was obtained comes from nearly every type of information, from electric logs, from sample logs, from core data, and from drill stem test data, and from production records.

Q Mr. Boss, was that Exhibit and the other Exhibit from which you were testifying prepared by you or under your personal direction.

A It was.

Q Will you continue.

A While we say this is an assumed productive limit, it is still substantiated by considerable fact. There are a number of wells around the periphery here where we have evidence that the porosity in this uppermost zone was pinching out from core data, from well performance or from other drill stem tests and production data. We have wells that might show a slight indication of gas or oil in this zone, and immediately adjacent or within a reasonable distance, a well which either tested and failed to encounter any show in the zone, or was dry entirely. So that, in general, it might be said that while it isn't an exact, of course, does not represent the exact limits, it nevertheless is a reasonable conclusion based on the available evidence.

Q You referred to the manner in which the western boundary of the assumed producing area was delineated. What about the eastern boundary?

A We generally have more control along the eastern side. The control wells are closer spaced on more comprehensive data. Along the southwest margin we have relatively little control and that is the weakest part of this assumed limit.

Q What is the reason for that?

A There have been few wells drilled out here from which data was available.

Q You refer to the loss of porosity is there anything further that you care to testify to in that connection?

A In the Terry-Blinebry oil field we have some supporting data from oil-water relationships. Several of the wells here are making water, or have made water, which gives us a further check on this limit. From these data it appears that there is an oil-water contact approaching a minus 2,470 sub-sea, which is very close to this assumed porosity limit here which gives a double check more or less as to the productive limits of this pool.

Q Now I understand then that the delineation on Exhibit 3 of the north boundary of the Terry-Blinebry oil pool is on the basis of the oil-water contact point?

A Not entirely, but it substantiates it.

Q Will you refer now to the pink shaded portion of the Exhibit and state what it represents?

A The area shaded in pink represents the portion of this productive area in which the reservoir contains gas or gas distillate. The green area represents that portion which contains oil.

The boundary, the separating line, the heavy green line which you probably can't see, is the approximate gas-oil contact which was determined from data available in wells on both sides of that line. It separates, then, the fluids in this common reservoir with the oil being down dip at the lower structural position and the major portion of the reservoir containing the gas and gas distillate.

Q Is there any oil production in the pink shaded area which you have designated as the gas producing portion?

A Yes, the area shaded in pink includes what is now defined as the Blinebry Oil Pool. These wells are scattered through a considerable area here and represent erratic marginal producers. In nearly every instance they were drilled to a deeper objective and failing to find commercial production were plugged back and were salvage operations. In general they appear to be producing from possibly lower in the section. It could be interpreted as possibly a separate reservoir, but from the performance of these wells it appears that they are not closely related to this main Blinebry pay. In the original preparation of data for the gas pools in 1951 the Humble Oil and Refining Company compiled data with respect to the Blinebry pools. It was the result of their findings on which the original definition of the Blinebry Gas Pool and the Blinebry Oil Pool were set up. In this report they pointed out that, at that time in 1951, there were 12 of these erratic oil producers which had been completed, and that all were marginal as of that day, averaging approximately 11 barrels per day. It was their conclusion that it was unlikely that the Blinebry Gas Pool was a gas cap of this oil pool from which these scattered wells were producing, but pointed out further that if later information

should indicate that they were, it seemed highly improbable that the production of both the gas area and the oil as separate pools would not be detrimental to the recoveries of oil from the Blinebry oil wells. With the additional information we now have from the performance of the Blinebry pool it bears out the conclusions that Humble proposed or drew at that time, which rather pointedly assures us that there seems to be a little relationship between Blinebry oil wells and the Blinebry gas and gas distillate reservoir.

Q Based on information that was available at the time of that original Humble study and the reservoir performance since that date Mr. Boss, what is your opinion as to whether or not that the Blinebry gas pool is a producing gas cap of the Blinebry oil pool?

A It would be my opinion that, although the entire zone is called a common reservoir, that in all probability the uppermost permeable or porous unit from which this gas is produced is not a gas cap of the Blinebry oil wells, but definitely appears to have that relationship with the Terry-Blinebry oil pool.

Q Do I understand from Exhibit 3 that the areas of gas production are generally shown in pink and the areas of oil production other than the marginal Blinebry wells, are shown in green?

A That is correct.

Q And the relationship between those two areas then is as the green area relates to the pink area on Exhibit 3.

A That is true. It indicates graphically the considerably greater extent of the gas pool as compared to the oil pool.

Q With reference to the delineation of the boundary between the Blinebry gas pool as you have designated it and the Terry-

Blinebry oil pool, did you testify that that line was drawn on the basis of the gas-oil contact point?

A This line was drawn, yes.

Q Will you refer now to Exhibit 1 showing the boundaries of those pools as presently delineated by the Commission and state how the two compare?

A The Terry-Blinebry pool as shown in green here, and the Blinebry oil or gas distillate pool outlined in red, is shown to overlap here along the northern boundary. There is, as presently defined, a half mile overlap in those two pools. Since the pools can be fairly well defined on the basis of a gas-oil contact, it would seem more reasonable to change or modify the present limits so that they would not overlap, since they are the same reservoir. Possibly there should possibly be a gap between the two in order that future wells drilled in the intervening area, depending on the outcome of them, the limits of the pools could be adjusted accordingly. So it would be my recommendation that the upper limit of the gas pool be changed so that it would not overlap the present defined limits of the Terry-Blinebry oil field.

Q Is there anything further with reference to your study or the Exhibit concerning which you wish to testify, Mr. Boss?

A I believe that covers everything that I had prepared.

MR. MALONE: That concludes the direct examination of the witness.

MR. MACEY: Are there any questions of the witness?

CROSS EXAMINATION

By MR. STANLEY:

Q Could some of the distillate produced with the gas be

classified as a dark oil or that it is being produced from an oil reservoir that may be separate from the primary gas reservoir?

A Did you say can it, or does it?

Q Could some of that distillate, so called in your testimony, being produced with that gas be also classified as dark oil production?

A I would think it would be possible.

MR. STANLEY: That is all.

MR. MACEY: Anyone else have a question of the witness?

MR. DIPPEL: May it please the Commission we are not sure whether we want to ask this witness any question or not, and we will not be sure until we have an opportunity to examine the exhibits. For that reason we would like to reserve the privilege of cross examination until perhaps afternoon to give us an opportunity to look at them during the noon hour. We may not have any cross examination, but we just simply don't know at this time.

MR. MALONE: Mr. Boss will be available.

MR. MACEY: Immediately after noon you would have the right of cross examination of Mr. Boss if you so desire.

MR. DIPPEL: Thank you.

MR. MACEY: Anyone else have a question of the witness now or later? Mr. Boss, I want to make sure I understand your testimony. As I understand it you maintain that there are two distinct reservoirs. The pink and green, so called, area being one reservoir?

A That is correct.

MR. MACEY: The old Blinebry oil pool down on the Eunice trend being the second reservoir, is that correct?

A That is correct. The evidence to say that the old

Blinebry is a separate reservoir is not as conclusive as the evidence that these are the same reservoir. Let's put it that way.

MR. MACEY: In other words, you are virtually positive that this is a common reservoir, the oil and the gas zone on the north end is a common reservoir, but there is a possibility that the old oil pool is a distinct reservoir?

A That is true.

MR. MACEY: If these two zones are a common reservoir, why not the name, why retain the Terry-Blinebry name, why not call it the oil wells in the Blinebry Gas Pool and rename the other old Blinebry pool?

A If it would not affect the production as presently allotted in the Terry-Blinebry pool I do not believe there would be any objection to that.

MR. MACEY: We could provide for that in the pool rules with some system of allocation. I was thinking of the possibility of having two pools which we say are common sources of supply and they are, therefore, one pool and we probably ought to name them as such.

A In the studies that were made by the committees of which I was chairman, the Delineation Committee, it was our recommendation at that time that those be considered as a common pool, but consideration be given to the Blinebry wells.

MR. MACEY: I have one other question. You may have stated it and I probably missed it. Are the present vertical limits of the Blinebry Gas Pool, are they adequately defined by the Commission in this.

A Yes.

MR. MACEY: You think they are getting the job done?

A Yes, I think it more than inclusive. It wouldn't have needed to have extended as deep in the section as they are presently prescribed.

MR. MALONE: You also testified, did you not, that it was an arbitrary 75 feet above the Blinebry marker?

A That is true. I think that was a conciliatory gesture because some of the wells that had been producing had perforated a little above the marker and to make them legal they put that in. Actually, there seems to be little doubt that there is any production up there because it comes from a sandy sequence that has very little porosity or permeability, so that it did no harm to put it up there. Whereas, actually, the permeable and productive zone is approximately from the marker and beneath it.

MR. MACEY: One other question, Mr. Boss, in connection with what I call the old Blinebry Oil Pool, based on the information that you have right now, do you think that there is any possibility of the withdrawal from the Blinebry Gas Pool damaging the old Blinebry Oil Pool reservoir?

A No, I don't. Our next witness will point some very conclusive data with respect to that particular phase.

MR. MACEY: All right. Any other question of the witness? If not, the witness may be excused.

(Witness excused)

MR. MALONE: We will offer in evidence Gulf's Exhibits 1, 2 and 3, if the Commission pleases.

MR. MACEY: Is there any objection to the introduction of Gulf's Exhibits 1, 2 and 3? If not, they will be received in evidence.

MR. MALONE: The next witness will be Mr. John Ross.

J O H N R O S S

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

DIRECT EXAMINATION

By MR. MALONE:

Q Your name is John Ross?

A Yes.

Q Where do you live?

A Fort Worth, Texas.

Q By whom employed?

A Gulf Oil Corporation.

Q In what capacity?

A I am a reservoir engineer, in charge of the reservoir engineering activities of the Fort Worth Production Division of the Gulf Oil Corporation.

Q You have been employed by Gulf for how long?

A Approximately seven years.

Q You have testified before this Commission on previous occasions?

A I have.

MR. MALONE: Are the witness's qualifications satisfactory to the Commission?

MR. MACEY: They are.

Q Have you, in preparation for this hearing, Mr. Ross, caused an engineering study to be made of the Blinbry Gas Pool and the adjacent pools as delineated by the Commission?

A I have.

Q Based on that study will you state generally the history

ADA DEARNLEY & ASSOCIATES
STENOGRAPHIC REPORTERS
ALBUQUERQUE, NEW MEXICO
TELEPHONE 3-6691

of these several pools?

A I will sir. I would like prior to that to make one statement off the record.

(Discussion Off the Record.)

A First I would like to review with you very briefly a little bit of the history of the three reservoirs that are in question, the Blinebry Gas Reservoir, the Terry-Blinebry Oil Reservoir and the Blinebry Oil Reservoir. As of September 1, 1954, twenty-one billion, eight hundred million cubic feet of gas and three hundred fifty-five thousand barrels of distillate had been produced from the gas wells in the Blinebry Gas Pool. The distillate production that is associated with this oil at the surface has a gravity that varies considerably, but generally speaking, has a gravity of about 65 degrees API. During the past 20 months Commission records reflect that the weighted average gas-distillate ratio equaled 51,467 cubic feet per barrel. That is the ratio of distillate to gas. The October, 1954, proration schedule shows that there are 68 wells in the Blinebry Gas Pool, the greater percentage of which were completed during the year 1954. If I remember correctly there were 29 wells as of January 1, 1954, so the pool, the number of wells has increased from 29 to 68 during this year. During 1954, through October, 1954, the average 160 acre gas well allowable has been 535 MCF per day. The Blinebry Oil Pool was discovered, as Mr. Boss said, in December, 1945. During the month of August, 1954, there were only 10 producing wells in the Blinebry Oil Pool. For that month those wells averaged only $7\frac{1}{2}$ barrels of oil per well per day. All wells are marginal and four of the 10 wells require artificial lift. The average producing

gas-oil ratio for the month of August, 1954, was 9,750:1 cubic feet per barrel. The Blinebry Oil Pool as of September 1, 1954, had produced 306,647 barrels of oil and a total of 15 wells had been productive, making an average cumulative production per well of slightly in excess of 20,000 barrels. Here is a field that has been productive since 1945 and the average per well cumulative has been approximately 500 barrels per acre. All wells are marginal, the average current production being approximately $7\frac{1}{2}$ barrels a day. None of these wells were originally projected to the Blinebry formation as oil producers. In general, all were drilled to a deeper depth and, when the lower horizons were found to barren, they were plugged back to oil shows in the Blinebry pay. In general, again all production is obtained from the lower portion of the Blinebry formation or below the gas-oil contact. I want to stress now that all wells in the Blinebry Oil Pool are marginal, salvage operations. I further wish to stress that the Blinebry oil pay, as such, could not have been developed by the operators had it not been for the possibly deeper horizons for which the operators projected those particular wells. They are salvage operations.

The first production from the Terry-Blinebry Oil Pool was obtained in March, 1952, and the August Committee report shows that 309,277 barrels of oil had been produced as of September 1, 1954. Here is an oil pool within this so-called common reservoir that was discovered in March, 1952, that has already produced more oil than the Blinebry Oil Pool that was discovered in 1945, giving a relative gauge of the value of the two reservoirs. Sixteen wells were producing during the month of August from the Terry-Blinebry Oil Pool when the average per well per day production amounted to 46 barrels.

The weighted average gas-oil ratio for the month of August as taken from the Committee reports averaged 2,150 cubic feet per barrel. Our records reflect that as of October 15, 1954, there were 22 producing wells in this pool. Due to the fact that the rim oil found in the Terry-Blinebry Pool is now indicated to be considerably larger than first anticipated all the information available has been thoroughly reviewed to determine what effect the withdrawal of gas from the Blinebry Gas Pool would have on ultimate oil recoveries from this rim area.

Q Have you made a study, Mr. Ross, as to the relative values of the oil and gas reserves that exist in this reservoir?

A I have.

Q Will you state your conclusions in that regard.

A According to Mr. Boss's Exhibit No. 2, the shaded area in pink represents the Blinebry, the possible Blinebry gas pay. The shaded area in green represents the Terry-Blinebry oil pay. The Blinebry oil pay is not shown on that exhibit because we consider that to be negligible marginal salvage oil. Inside the porosity limits on Mr. Boss's Exhibit No. 2 there are 30,700 acres, of which 27,500 are estimated to be productive of gas and distillate from the Blinebry gas field; 3,200 are estimated to be productive of oil from the Terry-Blinebry oil field. Six hundred acres are estimated to be productive of oil from the Blinebry oil pool. Therefore, approximately nine times as much of the total acreage will be productive of gas and distillate as will be productive of oil itself or 90 per cent of the total acreage will be gas acreage. However, because an acre of oil has a greater value than does an acre of gas we do not feel that a relationship between acreage is a fair estimate

of whether you have primarily a gas reservoir or an oil reservoir. For that reason we determined recoverable reserves for the three pools in question. To those recoverable reserves we have assigned current day prices and have determined the total value and the ratio of the values between said reservoirs. As a result of that investigation we found that with respect to total revenue as of the first of October, 1954, 81 per cent of the money to be gained from the producing of these formations will be from the Blinebry gas and distillate field; 18 per cent will be from the Terry-Blinebry oil pool; one per cent will be from the Blinebry oil pool. This comparison of revenue establishes the fact that the Blinebry formation is primarily a gas reservoir, both regarding acreage and regarding revenue. However, it has always been Gulf's policy to conserve associated gas if the production of same will be detrimental to the associated oil ultimate recovery, regardless of the relative value between the associated gas and the oil. Since the geological evidence previously submitted definitely indicates that the Blinebry gas is in association with the oil around the rim of this structure the effect of withdrawing this gas cap on ultimate oil recovery has been investigated.

Q What would be the normal result of such a withdrawal, Mr. Ross?

A If oil is found in a reservoir, and we will talk now about an average reservoir, if oil is found in a reservoir having a gas cap and the pressure of the gas cap is reduced faster because of withdrawal rates than the pressure in the oil pay, expansion will occur so that the oil will migrate into the gas cap area. If this occurs only a very small portion of the oil that does migrate into

the gas cap area will be productive. This results in reduced recovery efficiency for the oil reservoir. In addition, gas caps may add reservoir energy and actually increase ultimate oil recovery if the gas cap is effective as the driving mechanism to aid the solution gas drive mechanism within the oil portion of the reservoir itself.

Q Have you prepared an exhibit showing comparable bottom hole pressures in the Blinebry formation?

(Marked Gulf Oil Corporation's
Exhibit No. 4, for identification.)

A Yes, Exhibit No. 4 is a map showing the current delineation or the current boundaries of each of the respective fields, in red representing Blinebry gas, brown representing Blinebry oil, green representing Terry-Blinebry. On this map are posted the latest bottom hole pressure information available from these three reservoirs. The figures shown in green represent Terry-Blinebry bottom hole pressures. The figures in red represent according to the field limits, represent Blinebry gas pool bottom hole pressures. The figures in brown represent Blinebry oil bottom hole pressures. These pressures were all taken during the months, I am speaking now of all pressures, were taken in general during the months of September and October, 1954. They were taken at a datum of minus 2400 feet sub-sea and they were all taken after approximately the same amount of shut-in time. Therefore, from a datum shut-in time, date viewpoint, these pressures, relatively speaking, can be compared. It is very interesting to note that on this Exhibit the arithmetic average of the 13 wells from which pressure measurements were made in the Terry-Blinebry oil pool, the arithmetic average

pressure was 1,512 pounds per square inch. The arithmetic average of five of the seven red gas bottom hole pressures was 2,201 pounds per square inch.

Q Will you indicate the location of the wells to which you just referred, please?

A The five wells in the Blinebry gas field are more or less scattered and we feel are scattered representatively throughout the field. Therefore, there is a pressure in the gas of 2,201 pounds per square inch, a pressure in the oil column of 1,512 pounds per square inch, or a delta P or A pressure differential of 684 pounds. This pressure differential exists according to Mr. Boss's statement in a common reservoir. Now, with such a pressure differential within the reservoir it would not be possible for the oil in the oil rim to expand into the high pressure area, or the gas area. Therefore, with the pressure differential in favor of the oil column there can be no expansion of oil, no waste of oil from the rim into the gas cap. Therefore, withdrawals from the gas cap to date have not permitted a pressure situation such that oil can migrate into the cap and be lost. This very definitely indicates poor communication between the oil rim and the gas area. If the communication between those areas were good with this oil field being a relatively new field with relatively little withdrawals from the gas field, hydrocarbons would have redistributed themselves throughout the area and pressure would have been maintained in the oil area. The reason the pressure differential has occurred, theoretical calculations show that the withdrawals per acre foot from the Terry-Blinebry oil pool have been greater than the withdrawals per acre foot within the gas reservoir.

Because of the greater withdrawals per acre foot, poor communication between, there is less pressure in the Terry-Blinebry oil. Now, by the same token, since such poor communication is indicated this huge gas cap hasn't been very effective in adding ultimate oil recovery here. Since it hasn't been in the past, we don't feel it will be in the future. Therefore, we think that the withdrawal of gas and distillate from the Blinebry gas field will not effect in any way the ultimate oil recovery from the Terry-Blinebry oil pool, and we see no reason then why they should be produced as a common reservoir, since evidently they are behaving as separate reservoirs. That is the basis of our recommendation that we maintain everything as is, with a few minor changes.

Q Have you made a study, Mr. Ross, of the pressure performance of the Blinebry formation during the period from '46 to '54?

A Yes. Before I go into that I would like to point out another thing on this particular exhibit, if I may?

Q Go right ahead.

A This Exhibit has, in brown, the bottom hole pressures of the Terry-Blinebry pool, the average of which is equal to 1,199 pounds. Therefore, there is a pressure differential between the Blinebry oil pressure of 1,199 and the Blinebry gas pressure of 2,201, there is a pressure differential there of approximately a thousand pounds. Now generally speaking, this oil in this area underlies the cap and, if that cap were very effective, certainly there couldn't be a 1,000 pound differential between the two. Furthermore, had this cap been the Blinebry oil it wouldn't, or couldn't be classified as marginal salvage, the recoveries would certainly have been greater than 500 barrels per acre during

a ten year producing life. Therefore, it is our contention that the pressure performance, or the current pressure information, indicates that the Blinebry cap or the Blinebry gas field isn't effective with respect to ultimate oil recovery in the Blinebry oil field. I want to point out one more thing on this Exhibit. We have on this Exhibit a Blinebry oil well pressure of 987 pounds, offset by a Blinebry gas-oil pressure of 2,041 pounds. I want to point out something else. This additional performance history verifies the conclusion reached by Humble in 1951, when at that time they said it was their opinion that the gas cap would not effect the ultimate oil recovery from the Terry-Blinebry oil pool. Additional performance still verifies the original assumption upon which the rules were based for this particular area.

Q Will you proceed then with your study of the pressure performance of the formation?

(Marked Gulf Oil Corporation's
Exhibit No. 5, for identification.)

A Exhibit No. 5 is another exhibit showing pressure information. Exhibit No. 5 shows the pressure performance within the Blinebry formation from the years 1946 through 1954. In other words, this is the history of the pressure performance, whereas this was the current status of the pressures within the reservoir.

Q Will you take the pointer and follow the curves because they are not visible to the audience?

A Again, we have used the same color scheme. Red refers to the Blinebry gas, green refers to Terry-Blinebry oil, brown refers to Blinebry oil. We have two type pressures shown for the Blinebry gas. The upper line, or the line connected with the

triangles, represents bottom hole pressures. The first pressure shown was the pressure taken on Gulf's Vivian No. 5 soon after that well was completed in the year 1949. That pressure was 2280 pounds per square inch. The next point on the bottom hole pressure curve for the Blinbry gas field represents bottom hole pressure measurements on seven wells, the same pressures that were shown on the previous exhibit and the arithmetic average of those pressures is 2201 pounds. This red line then has declined in pressure 179 pounds. So this Exhibit says that the bottom hole pressure in the Blinbry gas formation has dropped 179 pounds. In order to know whether or not any of that information is representative we have examined all surface pressures taken on gas wells. The reason we did that, we have so many more pressures to work with because normally that is the pressures that we have taken in the past on gas wells. For example, the last point on the lower red curve includes 53 surface pressures. Naturally it would be much more representative of the reservoir as a whole than the point of seven pressures. You will note that the two red lines have essentially the same slope. You will note that the indicated surface shut-in pressure has declined approximately the same rate as has this bottom hole pressure. That indicates to us then that the upper line, or the bottom hole pressure line, which we want to relate to the bottom hole pressures in the other fields, is a fairly representative curve. Theoretical calculations from this approximate 750 pound shut-in pressure converting that surface pressure to a datum of minus 2400 feet, puts that point almost exactly upon this point, calculating gas distillate, gradients, gravities, etc. Therefore, we show this lower curve only to show that we feel that

the upper curve is representative of the gas reservoir. As I stated, the bottom hole pressure, the gas reservoir has declined 179 pounds per square inch. By the same token, the bottom hole pressure in the Terry-Blinebry oil pool, and these pressures, generally speaking, represent all of the wells that were completed at that particular time, the bottom hole pressure in the Terry-Blinebry oil pool has declined 753 pounds per square inch. Therefore, while the bottom hole pressure in the gas pool has remained essentially level the bottom hole pressure in the Terry-Blinebry oil pool has declined, relatively speaking, very rapidly. It has declined very rapidly considering that there is a gas cap that could perhaps be effective.

Q That decline has occurred over what period of time in the Terry-Blinebry oil pool?

A Over a period of two years.

Q Go ahead.

A From this you draw the same conclusions that you could draw from this other curve, a pressure differential exists, the gas cap is not effective, withdrawals of gas from the gas cap will not hurt the recovery of the oil from the associated oil rim. Again the same comparison exists between the red and the brown, the brown being the salvage Blinebry oil well pressures. I want to explain an increase here in bottom hole pressure, if I may. All pressures except the last pressure were taken at a datum of minus 2200 feet, with close in times ranging from 24 to 48 hours. The final point has only five wells, was at a datum of 2400 feet, close in time, 72 hours, and that explains the reason that it is somewhat higher than some of the prior pressures, deeper, longer closing time.

Again you have a pressure differential between these two reservoirs which is approximately 1,000 pounds. The fact that the available pressure data indicates that this relatively large gas cap is having no effect on the associated oil would be very difficult to explain if core analysis were not available. However, we do have core analyses that reflect, relatively speaking, very low permeabilities throughout the Blinbry formation. Furthermore, the core analyses show that the permeabilities and porosities decrease as the edge or the rim of this reservoir is approached.

Q Have you made a study of available information on the porosity and permeability?

A Yes.

Q Which exhibit is devoted to that study?

A Exhibits 6, 7 and 8.

(Marked Gulf Oil Corporation's
Exhibits 6, 7 and 8 for identification)

Q Will you state what Exhibit 6 shows?

A It is a core graph of the Blinbry formation from the Gulf Oil Corporation Hugh Well No. 4, located in Section 14, Township 22-S, Range 37-E. That is shown by the yellow circle on Exhibit No. 4. This particular well is located, generally speaking, in the center and in the, what we might call, the fat portion of the gas reservoir. We feel that this particular core is fairly well representative of the good gas distillate zone. If you will recall on Mr. Boss's cross section, Hugh No. 4 was one of the top structural wells in the center of the cross section. This core graph gives the results of permeability and porosity measurements at every foot throughout the entire 471 feet of the Blinbry

section. The well was cored from the Blinebry marker Mr. Boss referred to in his previous testimony. It was cored from that marker to the base, or to the top of the Tubbs sandy section. As a matter of fact, this particular well was cored from the top of the Glorietta through the Vivian section of the Drinkard, a continuous core. Zone porosity measurements on this core graph are shown in blue. Can they be seen from the audience, the blue line? The permeability measurements are shown in yellow. The scales for the permeability goes from zero to 100 millidarcies. The porosity scale goes from zero to 40 per cent. The yellow line, or the yellow curve, represents permeability in millidarcies. The blue curve represents porosity in per cent. In addition, superimposed upon this core graph is a Schlumberger log, the same log that was used by Mr. Boss on his cross section. Zone 1, which Mr. Boss stated was the major zone or the prime zone, or the zone containing the best porosity within the Blinebry in this well exists from 5452 to 5557 feet, that was the only zone that during drill stem test throughout this whole interval, that was the only zone, or Zone 1, that tested any fluid on drill stem test. It produced gas to the surface in 12 minutes and I do not recall the drill stem test, but it was gas productive. Below that zone or from 5557 throughout the Blinebry section the core was stained with oil. However, on drill stem test the remainder of the section did not test any oil. Zone 1 then contains 100 gross feet, of which $52\frac{1}{2}$ feet had permeabilities that measured in excess of zero, so that we have what we might consider $52\frac{1}{2}$ feet of net pay. The average porosity for the Blinebry, the weighted average porosity for the next section equals 12.45 per cent. I might add that for dolomite

rock that is, relatively speaking, an average porosity. Perhaps you might say that is a good porosity, 12.45 per cent. The permeability, the weighted average permeability for the section, however, was only 2.76 millidarcies. That I consider to be a relatively tight rock, low permeability. With respect to what we can compare that with, that same well cored to Vivian section was made a Drinkard oil well, the average permeability for the Vivian zone, the average permeability for the net pay was 25 millidarcies as compared to the .76 millidarcy average for the gas pay. So it is, generally speaking, a tight reservoir. Zone 2 on the core graph had 84 feet gross section, 43 feet having permeabilities greater than zero. The average porosity for Zone 2 was 10.33 per cent, the average permeability was 0.82 millidarcies. That low permeability probably accounts for the marginal status of the Blinebry oil wells, most of which have produced oil from this lower zone. The rock is tight. The porosities are fairly good porosities, but it is, the permeabilities are relatively low. Also between these zones of the Blinebry there are very definite zones where there is no permeability at all and where the porosity is very, very small. Those particular zones, we feel, could act as vertical barriers so that gas above one zone with respect to oil below would not actually be in association because of the poor communication, the non-porous, non permeable section between, although that particular section is still dolomite, not a shale break, but porosity pinch-out vertically within the section. Those zones where we have no permeability, little porosity, might explain the fact that there is a thousand pound pressure differential between the Blinebry oil and the Blinebry gas.

Exhibit No. 7 is a core graph of Gulf, Nancy Stevens No. 2 Blinebry. The plotting of this core graph is identical with the plotting of this core graph, with the exception that this core graph has a gamma ray neutron rather than a Schlumberger. This particular well is located in Section 24, 21-S, 37-E. I would like to point out the location of that particular well with respect to Mr. Boss's porosity limits, located slightly to the west of the assumed porosity limit. This well is located near the edge of the field. As Mr. Boss pointed out the porosity limit near this location occurs. After perforating and treating the Blinebry section from 5675 to 5750 with 10,000 gallons of acid, this well tested 82.1 MCF of gas against 20 pounds back pressure. Therefore, it was treated very heavily, produced essentially no gas in commercial quantities. That potential in itself would verify Mr. Boss's porosity limit. However, the core graph also verifies that porosity limit. Examination of the core graph from 5652 to 5768 were still in that same major zone of the Blinebry that Mr. Boss referred to. The completion was attempted in this same major zone 1, shows 116 feet of gross pay of which 46 feet had permeabilities greater than zero. The porosity averages only 4 per cent, and you will remember that we had porosity in excess of 12 per cent. Therefore, porosity does decrease as the limits of the reservoir are approached. The weighted average permeability for the net pay equals only .74 millidarcies. That explains the very low potential for the well. You will also note that these permeabilities on all these core graphs, you never have breaks of large permeabilities like you have in Vivian up to 300 millidarcies, 250 millidarcies. The whole thing is tight all the way through. There aren't any one or two

foot zones of high permeabilities. This low porosity and permeability certainly verifies the assumed porosity limit as designated by Mr. Boss and explains the poor potential obtained on this well. As a matter of fact I don't know, I don't believe that we have completed this well. I think we have temporarily abandoned the gas zone. Bearing in mind that the average permeability of Zone 1 Hugh No. 4, was 2.6 millidarcies, a definite decrease in porosity and permeability occurs as the limits of the reservoir are approached.

Exhibit No. 8 is a core graph of the Blinebry formation from Gulf Oil Corporation's Harry Leonard-A, number 37 Blinebry, located in Section 2, 21-S, 37-E. That well is a producer from the Terry-Blinebry oil pool. It produces from the green area. It is shown by this yellow circle on Exhibit No. 4. So we have cores both in the gas - we have cores in the good portion of the gas field and on the edge of the gas field and in the oil field. We feel that we have representative core data on this reservoir. We have not shown as exhibits all the core data we have. We have shown that core data which we have for wells, complete core data and core data that we feel is representative of all conditions. Other core data we have verifies what we are giving the Commission today. Exhibit No. 8 has the identical method of outlining the core information as the two other core graphs. The core interval of this well represents again the Zone 1 of the Blinebry formation from 5837 to 5950 feet or 113 feet of gross pay. Sixty-two feet had permeabilities greater than zero and the average porosity for this section is 8.73 per cent, so this well has porosities greater than this well, but less than this well. It is approaching the edge

of the reservoir. Again porosities are decreasing. The net average permeability is 1.52 millidarcies. This well on completion required 12,000 gallons of acid and was potential for 63 barrels of oil per day. The core data in summary shows that the Blinebry formation throughout is relatively tight and, as the rim of the reservoir is approached, permeabilities and porosities decrease. Such low permeability evidently has prohibited the pressure equalization between the associated gas and oil, and the results from the core data indicate that the gas cap will have little effect as a driving mechanism upon the associated oil reservoirs. In addition, the core data showed definite zones within the Blinebry formation which are not connected, so that any oil found in the lower portion of the section will not be effected by the upper gas cap. The core data substantiates the assumptions arrived at from the pressure investigation and explains the reason for the pressure differentials that now exist within this reservoir. Because the Blinebry section, with respect to total value or total revenue, is primarily a gas distillate reservoir, and because the withdrawal of hydrocarbons from the gas cap will probably have no effect on the efficiency of the associated oil reservoirs, it is the recommendation of the Gulf Oil Corporation that field rules be established for the Blinebry Gas Pool as if this reservoir were not associated with the others. Such rules will permit the withdrawal of gas from this pool according to market demand, which will in no way decrease the ultimate recovery from the Terry-Blinebry Oil Pool and the Blinebry Oil Pool. It is recommended that these three pools be regulated and prorated, then as if they were single reservoirs.

Q You have heard Mr. Boss's recommendation with reference to the northern horizontal limit of the Blinebry Gas Pool. Do you concur in that recommendation, Mr. Ross?

A Yes, I concur with that recommendation.

Q You have referred to recommended field rules and you are familiar, are you not, with the rules which Gulf are presenting to the Commission at this hearing.

A Yes, I am.

Q Those rules differ primarily in two respects from the field rules heretofore established by the Commission, do they not?

A These field rules differ in two sections with respect to the field rules as a result of the order R-520.

Q The first respect in which they differ is the size of the proration unit, is it not?

A That is true.

Q Will you state the recommended proration unit which Gulf is suggesting?

A Gulf is recommending that the standard proration unit for the Blinebry Gas Pool be, or shall consist of 160 acres, or that 160 acres be the basic gas proration unit.

Q Provision is made in the rules for exceptions for larger units, is it not?

A That is true. Provisions are made in the rules for larger units.

Q Do you have any observations that you could offer with reference to the soundness of that recommendation as to 160 acre basic proration unit?

A As you know, Gulf recommended 160 acre proration units

for the shallow gas pools in Lea County, New Mexico. If we recommended 160 acre units for those particular reservoirs, we would certainly recommend no larger than that for this reservoir, being considerably tighter than the shallow gas pools.

Q With the lack of porosity and permeability you consider the smaller unit to be more desirable in this instance?

A I think one well would drain 160 acres, I don't have any doubts about that.

Q Are there, in your opinion, any portions of the Blinebry Gas Pool in which a well might drain in excess of 160 acres?

A There are, yes.

Q Provisions are made for exceptions in such cases?

A Yes.

Q Rule 14 which is included in the proposed rules relates to the definition of a gas well, does it not, Mr. Ross?

A Yes, it does.

Q What is the definition of a gas well which Gulf is recommending?

A The gas well in the Blinebry Gas Pool shall mean any well within the vertical and horizontal limits of the Blinebry Gas Pool producing gas and liquid hydrocarbons, the liquid hydrocarbons having a gravity of in excess of 45 degrees API or producing gas in liquid hydrocarbons, the liquid hydrocarbons having a gravity of less than 45 degrees API and a gas-oil ratio of in excess of 100,000:1.

Q On what basis was that recommendation arrived at?

A Well obviously, with respect to the Blinebry gas field and the Blinebry oil field, operators should be able to produce

what salvage oil can be obtained from the lower Blinebry section and perhaps there are wells already within the reservoir, perhaps there will be wells completed within the vertical limits of the Blinebry reservoir that will produce some crude oil. The gravity of the distillate in the Blinebry gas field varies considerably. We have tried then to define a gas well using a gravity so that if a well produces oil, black oil, having a gravity less than 45 degrees API, that well would be an oil well because it is essentially an oil well. From that point up in gravity, if a well is producing associated fluids having gravities in excess of 45 degrees API from the vertical limits, we feel it should be produced and prorated as a gas well.

Q Is there any particular sanctity to that 45 degree recommendation?

A No. From a fluid analysis in the Terry-Blinebry field we find that the gravity of the Blinebry oil -

Q (Interrupting) Would you speak a little louder?

A We found that the gravity of the Terry-Blinebry oil was 39.9 degrees API. Our records show that the Blinebry oil in general has a gravity of approximately 40 degrees API. Our records also reflect that the Blinebry gas distillate has a gravity of approximately 65 degrees API. Therefore, we just arbitrarily picked 45 degrees API as a limit between the two. It has no basis other than we feel that it is an equitable thing. It is as unfair to one operator as it is to another.

Q Any other further testimony that you are prepared to give in connection with this subject, Mr. Ross?

A No, sir.

MR. MALONE: I would like to correct one inadvertent statement which I think you made in referring to the Humble report. You referred to the possibility at that time of the Blinebry Gas Pool being a gas cap for the Terry-Blinebry Oil Pool.

A I am sorry.

Q You mean to refer to the Blinebry Oil Pool.

A Yes, there are so many Blinebry oil and gasses it is easy to get confused.

Q Were the Exhibits prepared by you, prepared under your direction?

A They were.

Q Have you examined the ones prepared under your direction?

A Yes.

MR. MALONE: We offer Gulf's Exhibits 4,5,6,7, and 8.

MR. MACEY: Any objection to the Exhibits being received in evidence? If not, they will be received.

MR. MALONE: That concludes the direct examination of the witness.

MR. MACEY: We will adjourn until 1 o'clock.

AFTERNOON SESSION
WEDNESDAY, OCTOBER 20, 1954

MR. MACEY: The hearing will come to order, please. Are there any questions of Mr. Ross, the last witness for Gulf Oil Corporation. Mr. Ross, I want to talk to you about something. Did you have some question, Mr. Dippel?

MR. DIPPEL: Go ahead.

CROSS EXAMINATION

By MR. MACEY:

MR. MACEY: Do I understand you correctly when you say that you think there ought to be a buffer zone between the so-called Terry-Blinebry Oil Pool and the Blinebry Gas Pool in this area here?

A Not a buffer zone.

MR. MACEY: A blank area is what I really mean?

A No, sir. I think there shouldn't be an overlapping of horizontal limit there. I think when the field is completely developed the 160 acre gas well unit will be offset with three to four offsetting oil wells at approximately the gas-oil contact.

MR. MACEY: That is what I was concerned about.

A In other words, if you brought down the Blinebry gas limits now to include only that area that is developed there would be a buffer zone between the two, that will be by development the buffer zone itself will be destroyed.

MR. MACEY: I was thinking mainly in terms of the fact that some operators might have fairly large proration units that might extend into what you have got delineated as the oil area. You follow me?

A That is a possibility.

MR. MACEY: You dedicate oil acreage to a gas well?

A That is a possibility.

MR. MACEY: That is all I have.

A If that existed though, you see, that would be the operator's choice of stepping up near the oil pool and drilling his oil well. If he didn't want to do that, that is his business. I mean he would have that privilege if he thought that the oil was there and he wanted to drill it, that would be fine, but that would cut down his gas unit.

MR. MACEY: In other words, an adjacent well on the unit that proved to be an oil well would reduce the size of his pro-
ration unit?

A That is right.

MR. MACEY: Mr. Dippel do you have a question?

MR. DIPPEL: Mr. Kellahin will have some questions.

MR. KELLAHIN: Kellahin representing Continental Oil
Company.

By MR. KELLAHIN:

Q Mr. Ross, as I understood your testimony it was to the effect that as you go off the structure you tend to lose permeability and porosity?

A The permeability and porosity are indicated to be decreasing as the limits of the reservoir approach.

Q The converse would be true, as you go up structure it would tend to increase?

A That is true.

Q In the lower Blinebry I believe on your core graphs you

~~saturation~~
indicated an oil separation zone which will not be produced, if I understand your testimony correctly, due to the low permeability, is that right?

A I wouldn't say entirely due to low permeability, no, sir. It would be a combination perhaps of oil (storage) and permeability.

Q You do have an oil saturation zone indicated?

A That is true.

Q Is it unreasonable then, do you think, to assume that due to an increase in permeability or porosity, as you have testified, and the fact that oil saturation is present in the lower Blinebry, there may be an oil producing zone on the crest of the structure below the gas?

A Yes, that is very possible.

Q You think that is quite possible?

A Yes.

Q Could it, in your opinion, be increased by fracture methods or other.--

A Could what be increased?

Q Sir?

A Could what be increased?

Q Could the possibility of oil production be improved?

A Ultimate oil production?

Q Yes.

A That is a question that is controversial. It would depend entirely upon whether by remedial work you could connect porosity or whether you just improved permeability as already connected porosity as whether you would increase ultimate oil recovery

Q You would not discount the possibility of improving that situation?

A I would neither discount it nor would I credit it. Experimentation would be required before you would know that answer.

Q Did I understand in your opinion there is a permeability barrier between the gas zone of the Blinebry and the lower oil saturated zone?

A The core graphs show zones of no permeability and zones of decreasing porosity and the pressure performance verifies that the vertical communication is poor between the two zones.

Q Can you trace that zone completely across the Blinebry?

A Yes, I think that it is fairly distinguishable on the logs and it is also evidenced on the cores that are available, and the pressure performance of the two reservoirs over the area bears it out also.

Q Do you have any recommendations to make to the Commission as to the method of handling as a proration matter oil wells which are completed in the center part of the pool, in the event there are such wells?

A Yes. I think that those oil wells should be prorated according to the same rules that have been in existence for the Blinebry oil wells through the years. I think the field rules that we have recommended, however, revise the gas, gas-oil ratio limit to be increased from 2,000:1 to 10,000.

Q Mr. Ross, have you established a gas-oil contact in the Blinebry?

A You mean between the Blinebry gas and the Blinebry oil pools?

Q Yes. Could you give it to us as a sub-sea datum?

A A gas-oil contact between the Blinebry oil and the Blinebry gas?

Q Yes.

A In the Blinebry Oil Pool?

Q What I am referring to, Mr. Ross, is this period of saturation which we were just discussing.

A All right. No, I could not. We were not able to establish that.

Q You have it for the Terry-Blinebry and the Blinebry?

A Yes.

Q Could you give us that in the sub-sea datum?

A That is at minus - may I look at the Exhibit? Do you know the exact contact, I believe it is 2260.

Q Does this zone 1 that you have referred to in your testimony include within it both oil and gas zones as fixed by that sub-sea data?

A Yes.

Q Do you have any reason for not restricting the gas limits of the gas zone to the gas-oil ratio, to the gas-oil contact?

A Would you ask that again?

Q Do you have any reason for not restricting the limits which you have defined as gas productive to the area above the gas-oil contact? The vertical limits I am referring to.

A The vertical limits?

Q Yes. What I am getting at, perhaps I do not make myself clear -

A Yes, I understand.

Q I am referring to the top of the productive formation down to the first barren zone, in effect.

A In other words, the vertical limits would be from a sub-sea depth to a sub-sea depth, equal to the gas-oil contact.

Q Something to that effect, yes. Do you have any reason for not restricting your zones to that area?

A That would then be designating reservoirs by a contact, which we, in general, just do not recommend.

Q In the case before us here, Mr. Ross, I believe, according to your testimony, it would not necessarily be a contact. I have misled you in that respect. It would be the dense zone which inter-lies between the two?

A No, sir, that dense zone you see goes, or the dense zone carries gas and then, as your formation in that dense zone dips down structure, it then carries oil.

Q Within the same zone?

A The permeable, porous zone as it dips down structure goes from gas to oil.

Q This dense zone you refer to is not productive?

A Probably not productive, with zero permeabilities.

Q Mr. Ross, one other question. Have you included anything in your proposed orders which would require periodic bottom hole pressure tests as a means of control in the event there is further oil development in this?

A No, sir, not in these proposed field rules, we have not. I do not object to that whatsoever. As a matter of fact, I would recommend that.

MR. KELLAHIN: Thank you very much.

MR. MACEY: Any further question of the witness?

By MR. STANLEY:

Q With reference to the bottom hole pressure data, Mr. Ross, aren't there 54 wells that are dualled in the Blinbry Gas Pool, and only four wells are individual wells producing from that zone?

A I am not sure of those numbers, Mr. Stanley.

Q I think you will find that is approximately correct and, therefore, with a larger majority of the wells being dualled, you would not be able to obtain this bottom hole pressure data accurately, is that right?

A That depends on the dual equipment installed, with which I am not familiar. There is nothing to preclude the bottom hole pressure measurements if the well is a dualled well, if the proper equipment is installed.

MR. MACEY: Any other question? Mr. Montgomery.

By MR. MONTGOMERY:

Q I wish you would explain to the Commission - your testimony recommended that we leave the pool rules and assume they are separate reservoirs and produce them as such, although we know that the development at this time does not approach the gas-oil contact. I wonder if you would explain to us what we might expect down the road as development continues and does approach the gas-oil contact?

A As development approaches this contact, if the operators drill immediately along that contact they will have wells that have both a gas column and oil column exposed in their wells. Depending on their completion methods, the success of their completion methods, they will either have gas or oil, and initially they might have an oil well which will go to very high ratios in the

future. Depending on what an operator gets by this development, he either will get an oil well or gas well by his drilling. It will either produce oil with the gravity of less than 45 API and ratio of less than 100,000:1 and have an oil well, or produce over to 100:000:1 and have an oil well.

Q Could we expect that this might cause oil to possibly migrate up structure?

A Not as long as there is a pressure differential between the two in favor of the gas reservoir.

Q But it is possible that down the road, as more gas wells are drilled near this contact, it is possible that we will not continue to have the pressure differential that we had today?

A My opinion there is that the Terry-Blinebry development has been so rapid, probably will continue at a fairly rapid pace, that withdrawals per acre foot to date have been more than from the Blinebry gas field. My opinion is that the withdrawals per acre foot in the Terry-Blinebry oil field will continue to be higher than in the Blinebry gas field. We have no pressure equalization to date. I would expect the pressures in the Terry-Blinebry oil pool to continue to climb according to the last pressure trend. I also expect the pressures in the Blinebry field, I expect that pressure performance in the Blinebry gas field will not decline radically.

MR. MONTGOMERY: Thank you.

MR. MACEY. Any other question of this witness? Mr. Ross, your qualification as to whether a well is an oil well or a gas well, depending on the gas-oil ratio, wouldn't the gas-oil ratio depend a lot on what the line pressure was at the time that you

took the gas-oil ratio test? You might have a gas well one month and an oil well the next month.

A Are you speaking about gas-oil ratios with respect to gas wells or oil wells?

MR. MACEY: I am talking about the establishment of whether a well is a gas well or an oil well by the use of a gas-oil ratio limit.

Q I see.

MR. MACEY: One month you may complete a well near the contact and you may have a well that is a gas well. If the line pressure drops and you get more oil coming into the bore hole, you may have an oil well the next month. Then you have got a question of withdrawals, of how much oil you are going to allow there. What are you going to do about that?

A I could foresee having an oil well originally, going to a gas well. It is very difficult for me to see having a gas well go into an oil well. The characteristic KG/KO are such that that would be most uncommon. With depletion your KG/KO characteristics become such that your ability for oil flow decreases with respect to your ability for gas flow. I can't see, right at this moment, any opportunity of a well initially producing gas and at a later date producing oil. I can see an oil well, completed as such, at a later date becoming a gas well. That, I think, has occurred in the area of the Terry-Blinebry pool already, but I can't see the possibility there that you question me about, no, sir.

MR. MACEY: Do I understand you correctly that you don't recommend any changes in the vertical limits of any of the existing reservoirs?

A No, sir. If I remember correctly, the Gulf Oil Corporation, when these rules were originally recommended, the Gulf Oil Corporation approved them. If I remember, when they were revised last spring, I forget the exact time, we had no objection and we have no objection now to the current vertical delineation within the pools.

MR. MACEY: Don't you recognize the fact that you have got the same vertical limits in the Blinebry Oil Pools, in the old Blinebry Oil Pools I call it, as the Blinebry Gas Pool?

A Yes.

MR. MACEY: What would you do with regard to allowing an operator to dually complete a well in those two zones?

A That is a problem.

MR. MACEY: We have already got the problem is the reason I brought it up.

A Yes. The reason we recognize these vertical limits as being all right is that you have also got the problem of many wells that have been perforated throughout the interval. Now then, if you go in and set your vertical limits at this date so that you include only 100 feet of the Blinebry, you are going to cause all the operators to go and, I think, work over 85 wells. As I said, the question is a problem. It is just which is the worst of two evils as far as I am concerned.

MR. MACEY: Let me ask you this. I think we both recognize the same problems?

A Yes.

MR. MACEY: Do you think it is advisable for this Commission to allow dual completion of the lower Blinebry zone of this

upper gas zone? Do you think it is equitable?

A No, sir, I do not.

MR. MACEY: Any other question of the witness? If not, the witness may be excused.

MR. SMITH: May I ask one question here?

By MR. SMITH:

Q For all practical purposes, the purposes of perforating under the entire interval will accomplish the same purpose as dual completions?

A That is true.

MR. SMITH: That is all.

(Witness excused)

MR. MACEY: Are there any questions of Mr. Boss?

MR. DIPPEL: No, sir, we have none.

MR. MACEY: Anyone else have any question of Mr. Boss.

In that event, Mr. Boss is excused. Do you have a statement you want to make, Mr. Malone, or prefer to wait until the end?

MR. MALONE: We will hold our statement until the conclusion of the evidence, if the Commission please.

MR. MACEY: Mr. Yost.

MR. YOST: We believe our testimony will be considerably shortened. The Commission's staff is substantially in agreement with Gulf. The points that are not in agreement will be brought out in the testimony. We will try not to be repetitious.

R A N D A L L M O N T G O M E R Y

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

DIRECT EXAMINATION

By MR. YOST:

Q State your name, please.

A Randall Montgomery.

Q By whom are you employed, Mr. Montgomery:

A The New Mexico Oil Commission.

Q In what capacity?

A Geologist.

Q You have testified before the Commission before?

A Yes, I have.

Q Have you had occasion to make a study of the area of the Blinebry Gas Pool?

A Yes, sir.

Q Would you relate, in general, of what that study has consisted?

A I have constructed a structure contour map on the Blinebry marker in the Blinebry, covering the Townships 22-South, 21-South, Range 37-East. I have also constructed four cross sections throughout the area and have examined numerous gamma ray and electric logs and sample logs in the area.

Q In connection with your studies have you prepared Commission Exhibits 1 to 5 inclusive?

A Yes, I did.

Q And are these Exhibits accurate to the best of your knowledge and belief?

A Yes, sir, they are.

(Marked New Mexico Oil Commission's Exhibits No. 1, 2, 3, 4, 5, for identification)

Q Would you please explain Exhibit No. 1?

A Exhibit 1 is a structure contour map on top of the Blinebry marker and is on the contour interval of 20 feet. The heavy red line in the northern portion of the map is the outline of the Terry-Blinebry Oil Pool. The heavy red outline on the eastern edge of the map is the outline of the Blinebry, old Blinebry Oil Pool. The small red line indicates the line of cross sections of Exhibit 2, 3, 4 and 5, and are represented on the map. The wells that are colored red represent oil that is being produced from the Blinebry formation, which is in the Terry-Blinebry area and the old Blinebry Oil Pool. Those circles that are colored with an orange color are the wells that are completed as gas distillate wells in the Blinebry formation.

Q Do you have anything further regarding Exhibit 1?

A I would like to point out the relative flatness of this structure. The contour interval, as I pointed out earlier, is 20 feet, but the over-all relief is only some 320 feet throughout the entire area. I would also like to point out the concentration of the oil wells in this area --

Q What area is that?

A The northern part of the area of the Terry Blinebry area. And also, the relative lack of Blinebry gas wells which border this Terry-Blinebry Oil Pool in this area. I would also like to point out that some of these wells in this area have tested oil of less than 45 degrees gravity API. We also have at least two wells in this area that have formerly been classified as oil wells.

Q Will you proceed to the cross section maps which are

Exhibits 2, 3, 4 and 5, and explain them?

A These cross sections, cutting it short, these cross sections illustrate the flatness of the structure and the interval of completion that the different operators have used. I would like to point out on Exhibit 2 that the two wells in the easterly direction are Terry-Blinebry oil wells, and then as we go west and up structure these wells become, this horizon becomes a gas-bearing horizon. The same thing is portrayed in Exhibit -

Q (Interrupting) Exhibit 2 is a west to east cross section?

A Yes.

Q Would you please point it out on Exhibit 1.

A That cross section runs from the western oil fields, Hill's No. 1, eastward into the Gulf Leonard 36-A. I would also like to point out on this Exhibit, Exhibit No. 2, drill stem tests and other completion data. The drill stem test almost invariably in this area indicate very little information. They are very poor. In fact, in some areas the operators have discontinued even drill stem testing because it is a waste of money. You get little or no information.

Going to Exhibit No. 3, it is also a west to east cross section, going into the Terry-Blinebry pool from the Blinebry Gas Pool proper. It begins with the Humble State B. No. 6, and goes north-eastward into the Humble, to the Fullerton, the Humble Federal Terry No. 2. It portrays more or less the same thing as Exhibit 2, the correlation and where the wells have been completed. I would also like to point out that on Exhibit 2 I have a small chart here of eight wells completed in the Terry-Blinebry Oil Pool, which have had bottom hole pressure surveys, in October, 1953, and also in

April of 1954. We have extremes from 2,227 pounds to 1,107, a difference of some 1,100 pounds in the bottom hole pressure in the Terry-Blinebry Pool. The arithmetical average for these eight wells in October, 1953, was 1,724 and in April of 1954, 1,578, or a decrease of 146 pounds. Cross sections, Exhibits 4 and 5, portray the general lithology of the area in correlation and manner of completion.

Q What is Exhibit 4?

A Exhibit 4 is the west-east cross section and is shown by this red line here going from Texas Company Henderson Well eastward into Shell Starky No. 2

Exhibit No. 5 is a north-south cross section starting with the Texas Company East Lake No. 1, and going southward into the Samedan, pardon me, Sinclair Boyd No. 4.

I would also like to go back to Exhibit No. 3 with reference to the bottom hole pressures. This information indicates that permeability is relatively low. There is quite a variation in pressures in those areas.

Q Where did you get that information on Exhibit 3?

A That information was secured from the Oil and Gas Engineering Committee.

Q Mr. Montgomery, have you reached any conclusions as a result of your study?

A Yes, I have. One will note from the cross sections and structure map that the Blinebry oil is produced on the flanks of the structure and while that dip, the same stratigraphic unit becomes productive of gas. Therefore, this is probably an oil rim of a gas pool. The gas-oil contact appears to vary from one stratigraphic

unit to another, but for the main, the Blinebry oil section has a gas-oil contact in the range of minus 2,260. The water-oil contact is found at minus 2,343 in the Continental Lockhart-B 26, in Section 12, 21-S, 35-E, which is in the boundaries of the Terry-Blinebry pool. In Western Oil Fields No. 1 Hill, has minus 2,464. It is a dry gas reservoir with an oil rim. When oil is found in such a reservoir, if pressure on the gas lowered faster than in the oil, the oil will migrate up structure and essentially all of the oil will be lost. In this particular reservoir, due to the low permeability, which is demonstrated by the bottom hole pressures in the Terry-Blinebry pool, and also by the drill stem test and, in its present stage of development, pressure in the oil pool is being lowered faster than that in the gas pool, indicating that oil probably is not migrating up structure. Since the Terry-Blinebry Oil Pool may become considerably larger and gas completions become more numerous near the gas-oil contact, I recommend that a semi-annual bottom hole pressure survey be made of all the Blinebry gas wells within one mile of the Terry-Blinebry Oil Pool, and that all Terry-Blinebry oil wells be included in that survey. If and when the pressure on the gas wells becomes lower than that of the oil wells, I further recommend that the Commission follow one or a combination of the following methods of preventing waste:

- (1) Limit gas production to the same reservoir space as oil.
- (2) Produce gas wells under present rules and raise the gas-oil ratio limitation to such a figure as to allow the oil wells to void one quarter reservoir space that would be voided by a gas well on 160 acres,
- (3) Remove the oil allowable from the oil wells and allow

the oil wells to void one quarter of the amount of reservoir space that will be allowed a gas well on 160 acre unit.

Also, I further recommend that a gas well be defined, in order that wells completed near or in the gas-oil contact can be classified, in order to prevent drainage and waste. This problem will become more pressing as development continues in the direction of the gas-oil contact. One example is a well that is not in the Terry-Blinebry pool, but actually was completed as an oil well in the same stratigraphic unit. Its initial potential flow was 110 barrels of oil a day, gravity of 41 degrees, no water on 2046 choke. The gas volume was 643 MCF, the GOR 5,645. This well is presently classified as a gas well, but was classified as an oil well from August, 1953, until December, 1953, at that time it was reclassified as a gas well. It is produced on the average of some 57 barrels of oil per day and half a million cubic feet of gas, that is an approximate figure, the gas. The closer figure would be 475 MCF per day. This is to be compared with the Terry-Blinebry oil well which is producing from the same horizon. In the Terry-Blinebry Oil Pool the allowable is 52 barrels a day, with gas-oil ratio of 2,000:1. For the month of October this particular well, the operator requested 70 barrels a day allowable which we are presently carrying in the schedule as a condensate, it is distillate produced with the gas. I am not just exactly sure on Gulf's recommendation of 100,000:2. I do think, I haven't had an opportunity to know what the extenuating circumstances would be from that, but I do believe that a combination of gravity of the oil and gas-oil ratio would be one way of handling this particular problem. I would also further recommend that Gulf's recommendation

as far as administrative purposes be concerned, that we do not have the Blinebry and the Terry-Blinebry Oil Pools overlapping one another.

MR. YOST: I believe that is all.

MR. MACEY: Any questions of the witness?

MR. STANLEY: I have no question, but I wish to clarify the record if and when, or should, the Commission require bottom hole pressure data in the Blinebry Gas Pool. There are 64 gas wells in the Blinebry Gas Pool, and of that number, 53 are dually completed, and dually completed in such a manner that the Blinebry gas zone and the Drinkard oil zone, or whatever the case may be, is separated by production type packer or retained in the absence of a side door choke to permit the blanking off of the bottom zone and taking the bottom hole pressure of the upper zone. Therefore, this would entail that the operator unseat the packer, run a production type packer with a cross-over tool, or perhaps a side door choke to facilitate the taking of bottom hole pressures.

MR. MACEY: Mr. Stanley, are you sure that all those wells can't have pressures taken on them?

MR. STANLEY: I didn't say all of them. I said many are completed in that manner.

MR. MACEY: If I am not mistaken, I think all the dual Commission orders that the Commission has approved require that they can take separate tests. If they can't take separate tests, maybe they ought to cancel the permit.

MR. STANLEY: That may be so, but I believe it would require investigation prior to the order being written.

MR. MACEY: Any question of the witness? Mr. Malone.

CROSS EXAMINATION

By MR. MALONE:

Q I would like to ask the witness one question. Mr. Montgomery, in your opinion would it be feasible to take shut-in pressures and convert them to bottom hole pressures for the purpose of the problem that you refer to.

A In gas wells?

Q Yes.

A In many cases, Mr. Malone, the surface pressures do not reflect the bottom hole pressure. The gradients vary. Oftentimes the wells are logged up. I am not sure whether that is the situation in this area or not. I feel sure this is the situation that will happen as development continues toward that contact.

Q It would be your view then that it would not be possible to effectively make that conversion taking into consideration the gravity of the distillate, and so forth, to arrive at any basis to be used in lieu of bottom hole pressure?

A I do not qualify as an engineer, but it is my opinion, Mr. Malone, that would not be satisfactory.

MR. MALONE: Thank you.

MR. MACEY: Any other question of the witness? If not, the witness may be excused.

(Witness excused.)

S. J. STALEY

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

DIRECT EXAMINATION

By MR. YOST:

Q State your name, please.

A S. J. Stanley.

Q What is your occupation, Mr. Stanley?

A I am an engineer for the Oil Commission.

Q You have testified before the Commission before, Mr. Stanley?

A Yes, I have.

Q Have you had occasion to make a study of the Blinebry Gas Pool area?

A Yes, I have.

Q Would you relate, in general, what that study consists of?

A I have studied bottom hole pressure data, well completion practices, throughout the Blinebry gas zone, the Terry-Blinebry oil pool, the Blinebry oil pool; gas-oil ratio data and other engineering data related to the pool.

Q In connection with your study have you prepared what has been marked Commission Exhibits 6 to 25 inclusive, with the exception of Exhibit No. 8?

(Marked New Mexico Oil Commission's Exhibits No. 6 to 25, for identification.)

A Yes, I have.

Q Is the information reflected thereon accurate and true to the best of your knowledge and belief?

A Yes, it is.

Q Before you comment on your Exhibits, do you have a statement that you care to make?

A Yes, I intend to shorten my testimony considerably in view of the fact that we fundamentally agree with the Gulf Oil Corporation. I would like to bring out those points in which we do not agree.

Q Directing your attention to Exhibits 6 and 7, would you please explain those exhibits?

A Yes. Exhibit No. 6 and 7 are actually a duplication of Mr. Boss's testimony in the presentation of his particular exhibits. I would like to point out a very important factor in what is marked as Exhibit No. 6, and relate a little further the condition that exists in the Blinebry pool. On this particular exhibit, marked number 6, you will note that we have many circles throughout the Blinebry gas pool, outlined in black coloration, and these circles indicate the wells that are located in the Drinkard oil pool which directly underlies the Blinebry gas pool. However, there is one more gas pool between the Blinebry gas pool and the Drinkard pool and that is the Top pool. There is another reservoir which underlies the Blinebry gas pool, that is the Juan Tabo. Therefore, the development of the Blinebry gas pool does not exactly necessitate the drilling of new wells, but the fact that many of these oil wells are as they are, depleted, can be plugged back or, if they are today of commercial value, they can be dually completed. Consequently of the 64 gas wells that we have at the present time, approximately 53 dual completions and eight plugged back, and the remainder of the original wells drilled to the Blinebry gas zone. It tends for a very profitable operation and it is important in my recommendation that I am going to make at the present time, in

composition is rich in methane; fifth, that the molecular weight of the heptanes plus fraction be between 130 and 170; and six that the phase state of the reservoir fluid is at the critical dew-point pressure or above.

Q Mr. Stanley, do you agree that those are substantially the characteristics of the reservoir described?

A Yes, I believe that generally that is accepted by the industry. I would like to state further that in this particular pamphlet and subsequent pamphlets written by the Condensate Research, there is an important fact that distinguishes a condensate reservoir, which we can refer to as a light oil reservoir, and the one that produces heavy oil is a dark oil and that is referred to as just an oil reservoir. In the first place, they produce with two different types of mechanism. That is, produced by thermal dynamic principles, that is the condensate reservoir is produced by the reduction of temperature in pressure and the oil reservoir itself is produced by dynamic principles, whereby the actual fluids or liquids occur into a reservoir, move into the well bore. The reason that I brought up this point, it is not clear to us that the entire Blinbry pool is a condensate reservoir. In some wells it may act as a condensate reservoir and in others it may not. Usually whenever you speak of a condensate reservoir you speak of one that is actually a gas reservoir. Whenever you run bottom hole pressures into that particular reservoir you will note that you have a gas column from the surface to the bottom however, that may not be true in all condensate reservoirs, but certainly in all the reservoirs, for example, let me say, in the majority of the pressures that we have taken in the Blinbry

was pool, we have encountered accidents which are of a character of an oil accident. In this connection, I would like to present a sample from what I consider, and I believe the industry considers, a true condensate reservoir, and that is the Skelly Oil Company Dow B, No. 21, located in the Wilcox pool in the Najamar area in Eddy County, and producing from Texasian production. The reason I would like to present the sample is that it does describe that in the Phillips pamphlet a sample from condensate reservoir should have a tank oil gravity of 18 API and the liquid should be either colorless or straw color. I would rather describe this sample than to present it as evidence. It is pretty dangerous and for the -

Q (Interrupting) Just describe it for the record.

Q The liquid encountered is colorless and has a heavy, or has a high gravity in the neighborhood of 70 degrees API. The reason that I say it is dangerous, when we were transporting this sample from Najamar it blew up in the car and we had to return to get another one.

Q Directing your attention to Exhibits 9, 10 and 11, will you please explain these Exhibits?

A Exhibits 9, 10 and 11 relate to certain wells which describe the completion program of these wells and which are actually distributed throughout the Wilcox pool. The first well that I would like to go ahead and describe, which does not appear on this particular exhibit, but does appear on Mr. Longmeyer's exhibit, is the Eastern Oil Well, known as 204, and well No. 1, located in Section 4, Township 21-South, Range 37-East.

The reason that I am particularly interested in this particular well is because I made a point to observe the entire completion program of this well from the time that it reached total depth, a drill stem test prior to reaching total depth, and I am familiar with the completion of that particular well. This well was completed on June 8, 1951. The elevation was 4881; total depth, 5971 with 5 1/2 inch oil string set at 5970.

In drilling this well, the operator drill stem tested in what was referred to by Mr. Boss and Mr. Montgomery as the main Blinbry gas zone, from 5652 to 5818, and recovered 250,000 cubic feet of gas per day, with some undetermined amounts of distillate. The operator then proceeded to drill to total depth and set his pipe as close to the bottom as possible, and then selectively perforated the oil string.

The operator had chosen to perforate the oil string in two different zones. The first zone from 5652 to 5818, and from 5861 to 5881, and included in that zone from 5926 to 5956. Those two perforation intervals I will indicate as Zone No. 2.

The operator proceeded to set a Baker packer retainer between these two zones at 5850. He acidized the upper zone which is marked Zone No. 1, with 3,000 gallons and the well produced, prior to cleaning up, 1,300,000 cubic feet per day at 680 pounds back pressure, and an undetermined amount of condensate. He proceeded with zone No. 2, stabbed it dry. The casing pressure above the packer on the uppermost zone was 1400 pounds. Since there might have been a bit of fluid above that packer in the upper zone, I would estimate that perhaps the pressure could have exceeded

1650 pounds and that there existed a differential of that total amount of pressure across the packer.

The operator then proceeded to acidize with 5,000 gallons of acid and produced 1.5 barrels per hour of oil, with an estimated 300 feet of fluid level in the hole while swabbing, and at no time did the casing pressure vary in Zone No. 1 from 1650 pounds observed. Therefore, in that particular well there was complete vertical separation between the main Blinbry gas zone and the underlying oil zone.

I would like, at this particular time, to show the position of the Western Oil Fields well which is located in Section 4, Township 21-South, Range 37-East, at the same time, subsequent gravity tests were conducted during the operation of the well and there existed some 15 degrees gravity difference between the so-called condensate above and the oil below. In proceeding to an exhibit here marked Exhibit No. 12, this well appearing on this particular exhibit, I would like to go ahead and describe a Stanolind Oil and Gas Company well, marked the T. A. Owen B-4, located in Section 31, Township 21-South, Range 37-East. This particular well structurally is located near the center of the pool and I would like to show its structural position with respect to Mr. Montgomery's contour map.

You will note that it is approximately in the center of the pool, that it is only a mile slightly north or slightly north, northwest from the highest point of the pool, and, for all practical purposes, we may state that this well is actually drilled structural favorable in the Blinbry Gas pool, and is very high

There is one more particular well that I would like to refer to and this is, I think, our problem child, the Rowen Oil Company Blinbry, the Federal B Elliott, B-13, No. 1-A. We decided after last month's hearing to test this well, that one of the Commission's representatives test the particular well in order to determine if there was vertical communication between the main gas zone and the lower oil zone. What we had done in this particular well is had the tubing and the casing shut in at approximately the same time, and, after 24 hours build up, we ran a bottom hole pressure inside the tubing at the sub-sea datum of minus 2400 approximately, which is the datum for the pool, and we found that the pressure in the tubing was 899 pounds. We found that by using a continuous time recording instrument, we found that the casing was 1,720 pounds. We proceeded to open up the well below the packer by opening up the tubing valve to test this well. I do not have the amount of oil that it made, but if I remember correctly it made approximately 25 barrels of oil per day, but its production through the tubing had no reflection, or no pressure drop on the continuous pressure time recorder on the casing, indicating again that there was no vertical communication between the upper Blinbry gas zone and the so-called Blinbry oil zone or the Torrey-Blinbry oil zone whatever may occur.

I would like at this particular time to show the Commission various samples that I had obtained in the Blinbry gas pool, to show the difference in their physical characteristics and the difference in the particular fluid gravities, to show that the fluid is very complex, that in some places we may have a con-

condensate reservoir, that in other places we may have an oil reservoir.

Q First, did you obtain these samples yourself?

A Yes, I did. I obtained every sample. I would at this particular time, since we were talking about the Rowen Oil Company, I would like to present the samples that were obtained above the packer and below the packer. For all practical purposes the coloration is the same, I think that you may define the sample that was obtained from the tubing below the packer as slightly different in color, if you observe them very closely. However, they do look alike. The main difference between this particular sample that was obtained above the packer in the Blinbry gas zone is the fact that it has a gravity of 52 degrees, but below the packer the particular gravity was 41 degrees. I might add that neither sample exactly conforms to the description as presented in this particular pamphlet written by the Phillips Oil Corporation, nor to samples described by Muscat in his study of condensate reservoirs.

In this particular sample which is also obtained from the Blinbry Gas Pool, that particular well is Sinclair Oil and Gas Company Sarkis No. 1. It has a gravity of 76 degrees API, is straw colored, and probably would fit the description of condensate fluid. I might add that that particular well and a study of its completion and gas-oil ratio, that the well itself flows on a very steady gas-oil ratio from one month to the other. That will be shown on subsequent testimony.

The reason that I have brought up these particular samples after an extensive search, is the fact that I would like to show the difference in the gravity of oils obtained from

three wells on the cross section that is relatively flat. One is the Stanolind Eva Owens which we described, and proceeding eastward to the Gulf Corporation Mark Owen No. 6, then the Ohio Oil Company Mark Owen No. 2.

These three wells are about the same on structure and yet they have entirely different characteristics whenever you test a sample. For instance, in the Stanolind Oil and Gas Company well, we had caught one sample from the Blinebry gas zone, which is the sample and which I lost part of it, here the second sample is a recombined sample of the Stanolind Oil and Gas Company, and recombined with their Eva Owen B-2, which is a Tubb gas well and actually produces a colorless fluid, but whenever you combine the Blinebry gas sample with the colorless fluid obtained from the Tubb gas you do obtain a slight difference in coloration which is handled by Mr. Macey at this particular time. However, it has a higher gravity than this particular well, being recombined and having a gravity of 61 degrees API.

As we go eastward, the Gulf Oil Corporation Mark Owen No. 6, has even a higher gravity than the Stanolind well, having 62.2 degrees, and still further eastward the Ohio Oil Company Mark Owen No. 2, having a gravity of 63.2 degrees. In that same area we have something in between the Ohio and Stanolind well that is another oil and gas well and Mexico State B No. 10, in Section 2, 20, 21, having a gravity of 61 degrees. The Gulf Oil Corporation Mark Owen No. 6, in 20, 21, 22, having a gravity of 63 degrees. We have various other samples throughout the oil field of almost any type of coloration or gravity that one desires.

Therefore, I do believe that in this particular study the gravity sometimes is not an indication of the wells' characteristics, but the completion program is. In fact, careful observation on one well, the Walter Fameriss well in Section 21, after the well had been shut in for some considerable period of time, we caught samples when it was first opened up and obtained gravity samples of 70 degrees API. The liquid was straw colored and two hours later the gravity had decreased to 11 API with a bi-coloration. It also has been observed throughout the pool that actually the gravity does vary considerably and the oil color does vary considerably, depending upon the manner in which the well is flowing.

Q Would you please explain Exhibits 13 and 14?

MR. MACEY: Would this be a good time for a break?

(Recess)

MR. MACEY: Proceed, Mr. Yost.

A I would like to make a statement here to clarify my position. It has come to my attention that some people have misunderstood a statement that I made previously in my testimony, to the effect that the Terry-Blinchry oil pool and the Blinchry gas pool are different reservoirs. On the contrary, I believe that they are one and the same reservoir.

Q Mr. Stanley, will you please explain Exhibits 13 to 21 inclusive?

A Although Exhibit 13 is a correlation is a correlation map of the Blinchry gas pool. Ordinarily, in the Phillips' pamphlet and usually in the Phillips' correlation map I have read on correlation maps, the main observation is that the gas

condensate reservoir is fairly uniform throughout the pool, and it behaves in time with certain characteristics which are related from one to another within the pool.

However, this map was drawn and taken from C-1158 on the various wells in the Blinberry gas pool to production activity the amount of gas they produced in August, 1961, and the amount of distillate they produced during the same interval, and there is no rhyme or reason for this particular map as far as correlating gas condensate ratios. We may run from one very low value of 2,225 to one in a gas pool, to perhaps a maximum value of 180,000 to one. Rather than try to decipher this map, I have drawn a comparable exhibit in colors, where the yellow colors are less than 25,000 to one, and red colors are 25 to 50,000 to one, the purple 50,000 to 75,000 to one, the green 75,000 to 100,000 to one, and the blue in excess of 100,000 to one.

Q What exhibit are you referring to now?

A I am referring to exhibit No. 11. We will note that even in the central part of the pool, if you will compare this particular point of the southwest quarter of the southeast quarter of Section 31, Township 22-South, Range 37-East, that we have a very low value of a gas-oil ratio, being less than 25,000 to one, and yet this is flanked to the west by gas-oil ratio between 25 and 100,000 to one, that is 25,000 to 100,000 to one, and to the east we have a value that is in excess of 200,000 to one. These conditions of varying gas-oil ratios are an indication of structure and vary throughout the field, and also vary from one particular well to another.

with reference to this exhibit, I believe that the manner in which the wells were completed in the Blin-bry gas pool and the underlying various oil leases greatly affects the gas-oil ratio.

To continue with the study of gas-oil ratios, and I would--or gas condensate ratios, I would like to include Exhibits No. 15 to No. 21, which is actually a gas condensate ratio study of the various wells that have been chosen. Actually in the true condensate reservoir, the gas condensate ratio should not vary from one month to another and should follow some characteristic, as this particular ratio in Exhibit No. 16, on the Olson-Royd No. 2, from the period September, 1953, through June of 1954.

I do have another exhibit here, Exhibit No. 20, the Sinclair Oil and Gas Company Barbks No. 1, which does not vary in the type of distillate that is produced, having a very high straw colored distillate, and from September of 1953 to August of 1954, the gas condensate ratio remained fairly constant, even though the gas production and, of course, its related condensate, varied with it, too. However, this is not true of all the particular exhibits and we have a wide variation of gas condensate ratios. Part of that variation also depends on the manner in which the gas well is flowed.

Also on these particular exhibits we will tell the number of hours that the well is flowed and that controls the number of days that it flows and the amount of gas that it flows each day, in order to bring about a detailed analysis and correlate, generally, the gas production to the gas-oil ratio or gas condensate ratio. However, the thing that is particularly the varia-

tions in the gas condensate ratio, will explain by case that we do not in all cases have a true gas condensate ratio.

MR. JACOB: What was the last word you used?

A. I mean true gas condensate reservoir.

Q. I direct your attention to Exhibit 22.

A. Exhibit 22 shows in colors the various shut-in pressures in the Blinobry gas pool, various bottom hole pressures.

Q. Are you referring now to Exhibit 17?

A. I am referring to Exhibit No. 6 actually.

Q. Six?

A. We have referred to this particular exhibit before in the opening part of the testimony.

Q. I want to get the record right.

A. I am referring now to Exhibit No. 6. In this particular exhibit, we have also attempted to draw a contour map of bottom hole pressures and shut-in pressures. Usually you can't correlate shut-in pressures of true gas holes, thereby you do not have any fluid, but under the circumstances where you have taken shut-in pressures at the surface of the Blinobry gas pool, you will note that there is a wide variation of shut-in pressures at the surface due to the fluid built up in the tubing. Also, we have attempted in this particular survey to take some bottom hole pressures of the Blinobry gas pool as compared to surface pressures. We have also conducted and taken pressures in the Tarry-Blinobry oil pool.

I would briefly like to use Exhibit No. 7 and show the different bottom hole pressures versus the surface pressures. For instance, on the Blinobry Oil Company, and also No. 1, in Section 13,

Township 22-South, Range 12-East, the surface pressure is 1,756 pounds, and the bottom hole pressure is 2,261 pounds, or a variation of approximately 490 pounds.

This condition is noted throughout the field and there is a pressure differential at the surface of 1,722 pounds with an oil column creating a bottom hole pressure of 2,185 pounds. We have various parts of the pressures, depending on whether they are taken at the surface or whether they are taken down hole. The pressures noted in red on this particular exhibit actually reflect the bottom hole pressures, and the holes recorded in green are actually surface pressures. Now, those pressures on this particular exhibit that are recorded in red are pressures within the defined limits of the Terry-Blinobry oil pool.

Now, I might note that there is a greater variation in pressures from one well to another. For instance, on one particular well in the Terry-Blinobry oil pool we have a pressure of 986 pounds and its north off-set has a pressure of 2,113 pounds.

In order to shorten my testimony, I might add that Gulf brought out this particular point that the reservoir has the characteristics of having very low permeability values, low porosity values, and actually it takes a well longer than 72 hours for it to build up to the surface pressure. I believe that if all these wells were shut in for long periods of time in the Terry-Blinobry pool, from the conception that we have made across this pool showing that it is the same reservoir, that their bottom hole pressures in the Terry-Blinobry oil pool would equal all those in this area in the Blinobry gas pool. However, that may not be true.

in the Blinobry oil pool and I do not believe that it is true in some of the underlying oil pools, underlying the Blinobry gas pool. I do believe that there is a differential that exists, especially whenever you consider cases as we did in Exhibits No. 11 and 12, and some of the cases as exhibited in Stanolind Oil and Gas, Eva Owen B-1, and others throughout the particular field.

In studying bottom hole pressure build-ups, I might mention this particular exhibit, Exhibit 22, which is part of the bottom hole pressure that we have taken, and Shell Oil Company had contributed some information on one of their wells in the Terry-Blinobry oil pool, on this particular exhibit the order naturally reflects the bottom hole pressure from zero to 1900 pounds of 2000 pounds, and, of course, the horizontal scale is the time and hours that the well is shut in. We notice that after 66 hour shut-in, obtaining the pressure of 1972, that the well was continuously building up. I believe that if it were allowed to be shut in for a longer period of time, it would eventually reach the field pool pressure.

I might read into the record that after 21 hours the well had a pressure of 1738 pounds; after 18 hours, 1808 pounds; after 66 hours, 1972 pounds and still climbing. In studying bottom hole pressure curves we note that whenever a well takes such a long period of time to build up, we never are near the maximum build-up pressure, we can state we are in condition of low permeability.

Turning on to Exhibit 23, would you please explain what that represents.

A Exhibit No. 23 actually explains the various values that were compiled by Muskat in the Research Department of the Gulf Oil Corporation, and, in some instances, by the Phillips Oil Corporation, that it is typical of a gas condensate reservoir that whenever you lower the pressure -- and in this particular exhibit the pressures on the horizontal scale, from zero to 1400, and on the vertical scale, it does give you the gas condensate ratio and 10,000 cubic feet per barrel -- that actually whenever you decrease the pressure in any gas condensate reservoir you ordinarily get an increase in the gas condensate ratio. Until, as in all the cases, that you reach a final state of completion in a gas pool, then you do get a drop in your gas condensate ratio.

However, this is not true with the Blinbry gas pool. Since 1917 from the date of discovery, as depicted in Exhibit No. 24, the gas condensate ratio has actually declined. Perhaps the reason it has declined, and further declined in 1952 to 1953, is that whenever you observe the completion practices of many gas wells in the Blinbry gas pool there is some attempt, and in many cases a very important attempt, to recover as much Jank, or recover a greater volume of Jank oil as is possible by selectively acidizing and perforating. Perhaps at a future time this curve will probably approximate this curve with time, but it has not done so since 1917.

I might also add that the red value is the dry gas production from 1917 and the blue value is the condensate production that is reported by the Commission, that is reported to the Commission. However, in this particular curve, sometime in the

way the rules have been written for the field, and I realize it is almost impossible to differentiate in this particular pool the dark oil from the light oil, I believe all the condensate that is reported here may be sometimes in the form of a dark oil. However, I do believe it is unimportant.

In the conclusion of these two particular exhibits, I would like to go ahead and present my last and final exhibit, marked Exhibit No. 25. This exhibit is more or less an economic exhibit, and shows a 1953 production data based on 9½ cent Blinebry condensate was 117,311 barrels and based on \$2.75 a barrel, which may be a little low but still is a relative figure, we have a value of \$322,605, a little over \$322,000.00. In the Terry-Blinebry the value was \$391,921.00. The Blinebry oil \$117,299.00. Actually expressed in percentage and combining the two oil reservoirs -- however, this does not mean that they are connected to the Blinebry gas pool in the case of the Terry-Blinebry oil -- actually the gas comprised 41.6 per cent of the total revenue of the field; the Blinebry condensate 22.8 per cent; and the oil is 35.8 per cent.

I have attempted to take the August, 1954, figures to approximate if there was a relative ratio between August, 1954, production rate and its not worth to the 1953 yearly production data. The percentages are similar. For instance, in 1953 we had a value of 41.6 per cent for the Blinebry gas. In August of 1954, again the same units, we had a value of 41.6 per cent, or a difference of only 0.2 per cent. Perhaps there the greatest difference is in the dollar in value which would be affected by Blinebry oil pool itself and the early production, or, simply that

We have a reclassification which we do have, whereby an operator chooses to call it condensate rather than a dark oil. Nevertheless, the variation there is the Blinbry condensate of 22.6 per cent in 1953, is not much different from the August 1954 value of 25.1 per cent. Neither do we have a great variation in the value of the oils. During the entire year of 1953, as we said, 35.8 per cent, during the month of August, 33.1 per cent. That little difference could mean a difference in classification.

Q Your production information was secured from Commission records?

A Yes, they were secured from the Commission records.

Q Mr. Stanley, would you please summarize and give the Commission any recommendations that you might care to make?

A First of all, I believe that the Blinbry gas pool is a very complex reservoir, that it may be a gas reservoir. It certainly has a connected oil ring and the Terry-Blinbry oil pool, I believe that it has an underlying oil pool in various lenses. I do believe that the underlying oil pool cannot be recovered by drilling another well. By that I mean that I do not believe that it is economical to drill a separate well to the underlying oil pool, but I do believe that the dark oils that are produced in the Blinbry gas pool are very important, and I believe that these oils will never be recovered in any other manner. The only recommendation that I have to make at this particular time on the Blinbry gas pool is that the wells be drilled, completed, and operated on a 100-acre spacing to recover the greatest maximum amount of dark oil possible.

MR. YOST: At this time we would like to offer in evidence Commission Exhibits 1 to 20 inclusive.

MR. MACON: Any objection to the introduction of these exhibits in evidence? If not, they will be received in evidence.

MR. YOST: That is all.

MR. MACON: Any question of the witness? Mr. Smith,

CROSS EXAMINATION

By MR. SMITH:

Q As I recall the summation of your testimony, you testified that in your opinion there is an underlying surface of oil underneath the Blinobry gas cap?

A Yes.

Q As I recall the rules, they provide at present for 75 feet above the Blinobry marker and 300 feet below. In some instances, this oil that you talk about being below the Blinobry will lie below that definition, is that correct?

A That is correct. We have, in some instances, tried to determine, especially to the west side of the pool, the water-oil contact, but I do not think that that has been fairly established. Our figure is minus 2185. However, we do feel, and I do feel rather, that there is that underlying oil that you have mentioned within these limits.

Q As I interpret your testimony further, it is uneconomical to drill wells to get to the oil, it would naturally follow there, for it would appear to me, and I would like your opinion on the matter, that a perforation at a point below the oil below the Blinobry and it would be called for in some instances.

A That is correct. I think if you will study further, at one time, and I believe it was in May or 1961, of this particular year, the Commission had defined the vertical limits of the Blinbry gas pool as being just merely the Blinbry formation, and several operators have chosen to perforate below those limits. I definitely believe that the operator should not go through the expense of plugging back. I think that it would assure greater oil recovery from those depths and also that a new well drilled to that depth horizon will definitely not pay out.

Q In your opinion then, the requirement to plug back to a point 300 feet below the Blinbry marker would probably result in the loss of condensate or oil as the case may be, which would probably never be recovered?

A I believe that if the wells were completed in good faith prior to that order R-104, which defines the limit, I do not feel it is economically feasible to be forced to plug back.

MR. SMITH: Thank you.

MR. MACKEY: Anyone else? If not, the witness may be excused.

(Witness excused.)

MR. MACKEY: Do you have anything further, Mr. Yeast?

MR. YEAST: No, I have nothing further.

MR. MACKEY: Mr. Yeast, do you have a witness, or do you wish to withdraw your direct testimony?

MR. YEAST: We will not have a grand jury. I would like to make a statement at this time.

MR. MACKEY: Is there anyone else who has any direct

MR. SMITH: May it please the Commission, our chief concern in this case is the fact that to have some five out of six wells that have been perforated at a point below 300 feet from the Blinberry marker. We would like to ask the Commission to give consideration to Mr. Stanley's testimony and write the rules in such a manner as to permit the continued operation of these wells without the requirement of additional work-overs or squeezed back, or eliminating the possibility of recovering the additional dark oil that Mr. Stanley testified about from the point below that. I would like to suggest that the Commission could restrict the exception contained in the order to make sure that the well does not encounter any of the production from the Tubbs. As long as we stay above the Tubbs, I think that the best interest of conservation for the ultimate recovery will be best served.

NR, MAC P: Anyone else?

Mr. Milburn: Ross Malone, for Gulf Oil Corporation. Gulf has presented to the Commission the results of its studies in the Blinberry area, and summarized rules based on the previous field rules of the Commission. Concerned with interest and with a considerable amount of, I might say, relief, but satisfaction, that in general the Commission's staff agreed with his conclusions that as far as possible, and the only thing made difficult, insofar as the more detailed work involved, and all agreement to the size of the results with any discrepancy, according to the Board's desire to have it all out as generally satisfactory to the Board.

called by 401.

Mr. Dippel: I have been asked, representing Amoco Oil and Refining Company. The Amoco would like to go on record as recommending to the Commission the adoption of substantially the same field rules as heretofore adopted in the Joliet and the Keokuk pools for the Blinobry, Cobb, Myers-Green, Justis, gas pools, including the 600 acre production unit and the lifting factor in connection with the gas-oil ratio.

MR. DIPP: Mr. Dippel.

MR. DIPP: We feel that the testimony certainly indicates that the Blinobry pool presents a very complex problem, both as to development and as to regulation. It is our opinion that there is a real possibility that commercial oil production will be found below the barrier underlying the upper zone of permeability. We feel that both Gilt and the Commission's staff are to be commended for the work that they have done and the evidence they have presented.

Frankly, we had hoped to be prepared to present some evidence, but we had not gotten as much information together as we felt we should have before we undertook to present evidence, and that is the reason we elected not to do so. As a fact, however, that all of the essential data cannot be obtained, and it is, therefore, our recommendation that rules be established on the basis of the available and available data. We are offering some data, but that it is not a complete picture, and that a partial set be exercised. We are willing to go on the basis of the data, if they are to be taken into account. We are not in a position, and we certainly are not in a position to go on the basis of the data.

at intervals not to exceed six months, and that a definite time be fixed. If it is six months or a different period, we would like to recommend that the rules be limited to a certain temporary period of time, and that we come back at that time and undertake to present the results of further studies. We will assure the Commission that Continental Oil Company will continue studies and, if they are temporary, that we will have some evidence to present at that time. Thank you.

MR. MCMAN: Thank you, Mr. Dippel. Anyone else have a statement in this case?

MR. COCHR: Terrill Couch, for the Ohio Oil Company. The Ohio feels that the rules that were adopted for the Lamont-Jalmit Pools and the Arden Pool, in order to, although we don't purport to advocate each and every provision of them, we feel that the rules are generally workable, and that they would be applicable and workable on this gas pool involved in this case.

We do think that certain changes have been indicated and are indicated and will be indicated in the future, as we operate under rules similar to that. In that connection, one change we would recommend would be the provision that the no-flare section of these rules not apply to a fully completed or a nearly fully completed well until an agreement has been reached there to require the no-flare section to be complied with.

The other thing we don't wish to have taken with itself is, properly, the Commission will be able to determine whether and whether the rules that have been adopted, whether those provisions and regulations are necessary to the public in the oil field.

in order 1974. We went to the field with little money, but to think that the size of the recommended production unit, along with the table, we think that should be the answer.

MR. NACEY: Mr. Smith,

MR. SMITH: I would like to supplement the statement I formerly made by saying that we would suggest the adoption of the proposed rules by Gulf by the Commission with, of course, the suggested change or exception that I made first.

MR. DUFFEL: I forgot to state that Continental would recommend that production units be restricted to 160 acres.

MR. NACEY: Mr. Montgomery.

MR. MONTGOMERY: I would like to ask Mr. Smith - he said down to the top of the Tubb. Were you referring to the Tubb markers defined by the Commission or to the Tubb Gas Pool as defined by the Commission?

MR. SMITH: I think probably the best answer to that is the first statement that I made, that is to avoid the obtaining of production from what is known to be Tubb pay. I don't know precisely what the marker is chosen by the Commission. I assume it is the point 300 feet below the top of the Blinbry. Is that what you have in mind?

MR. MONTGOMERY: I was referring to getting the Tubb marker and the vertical limits of the Tubb pool was 100 feet above that marker. I made the point to you earlier to prohibit the Blinbry from into the Tubb gas pool.

MR. SMITH: No, no, no. I think we mean the Tubb gas markers.

MR. MACKEY: Anyone else?

MR. STIFF: I would like to make another statement. I would like to restrict my recommendations on the rules just to Case 727, the Blinbry pool. That is the end, the adoption of the rules proposed by Gulf.

MR. MACKEY: Anyone else. Does anyone have anything else in the consolidated cases 727 and 728.

MR. BUSHNELL: R. D. Bushnell, Shell Oil Company. We would like to go on record as concurring with the recommendations of Gulf except that we do recommend 160 acre gas proration unit in the Blinbry gas pool as recommended by the Commission.

MR. MALONE: May it please the Commission, may I make clear for Gulf the fact that our recommendations with reference to the proposed rules submitted by Gulf is that they likewise be promulgated for the Tubb Gas Pool.

MR. COUCH: I may supplement my statement on the Ohio. I had directed my remarks to the Blinbry. In view of the fact evidence has been presented on that pool and those involved in the case and not the Tubb, based on the information available to us, substantially the same recommendations would apply to the Tubb Gas Pool, and we find ourselves in somewhat the same situation as Starobina with reference to completions in the Tubb zone. That is, we have one well that has perforations below the vertical limits of the Tubb Gas Pool. We want to have pool rules adopted for the Tubb to maintain the vertical limits, so that such a well would be in compliance.

MR. MACKEY: I would like to see if it is possible to get into the

Drinkard gas cap?

MR. COUCH: That would be the limitation.

MR. MACEY: Anyone else?

MR. YOST: Mr. Macey, as far as the Commission's staff is concerned, the testimony is directed merely to the Blinbry, not to the Tubb.

MR. MACEY: Do you have anything further on any of the other cases?

MR. STANLEY: I might make a statement here. We have, but not completely, studied the Tubb pool. The staff feels that it is entirely different from the Blinbry pool. We do not have the complications of fluid and, therefore, if one does study the Tubb Pool we may find that the rules may be entirely different and much simpler than the Blinbry Gas Pool. Therefore, as Mr. Yost mentioned, we don't want our testimony in the Blinbry pool applied to the Tubb.

MR. CAMPBELL: Jack Campbell. I would like to ask a question. I assume there is not going to be any evidence offered in Case 728. The Tubbs, Justice and Byers Gas Pools, even though this has been consolidated, this testimony and evidence all applies to Blinbry only.

MR. MACEY: That is right.

MR. CAMPBELL: May I inquire as to what the status of the -- I assume then that the order now in effect in the Tubb, Byers -- upon this pool will remain in effect until the evidence is offered to change it, is that the status of it? The reason I inquire, I have some letters, pending affecting the Tubb pool and

the Blinbry Pool, by way of a dual completion which I have been holding up in anticipation of some possible changes in the order.

MR. MACEY: Mr. Campbell, I think you were very aware of the fact that we have been trying to get evidence in all of the cases for several months now. The only recourse that I can see is for this Commission, as far as I feel about it, to write an order and let it stick for a temporary period on all of these pools and give the companies an opportunity to thoroughly study all of the pools. If we can change them, we will change them, but we don't have any evidence to base any order on, I will guarantee you that, outside of the Blinbry; don't misunderstand me.

MR. CAMPBELL: I don't mean to imply that I would object to the Commission entering an order in the Tubb, Byers-Queen Pools along the same lines that they have entered in the other areas. All I was inquiring for was to see whether I should continue to stand by and wait for that or go ahead and proceed under the present order.

MR. MACEY: I want to ask Mr. Stanley a question before we go any further. I am not sure -- what are we going to do about any proration unit that we have approved greater than 150 acres in the Blinbry? What would be your recommendation, if we limited it to 150 acre proration unit?

MR. STANLEY: I would like to have an opportunity to study that particular unit and then I would probably be able to answer the question.

MR. MACEY: I think that the Commission will probably

enter orders more or less clarifying the existing orders where we feel -- in other words, regardless of whether we have the evidence or not. We will try to do what we think is right. If we are wrong and somebody doesn't like it, they can ask for a rehearing and then they can produce the evidence. We have tried very hard to get the evidence and we haven't gotten it. So I think the only thing we can do is to go ahead and do what we think is right. Does anyone have anything further in these two consolidated cases?

MR. WALKER: Yes, I would like to ask Mr. Campbell or anyone else who would care to answer, the question if we go along in the order that Mr. Nacey has outlined, is that going to affect the operations, the present operations, to any great extent?


MR. CAMPBELL: I don't know exactly what Mr. Nacey was referring to, unless it was to make the orders in the pools other than the Blinbry, with the modifications perhaps that have been suggested, but on the other three pools, I assume he had in mind something along the same lines that was done in the other gas pools that have previously been designated and new rules were adopted. I don't know. I haven't heard anyone who objected to the same type of rules in the other pools to make them more or less uniform throughout the area around there. There may be some who feel that way, but they have certainly had an opportunity here, it seems to me, to come in and offer evidence if that is the case.

MR. NACEY: Anyone else? If not, we will take the case under advisement. Let's take a short recess.

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Notary Public and Court Reporter within and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conversation Commission, at Hobbs, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 22nd day of November, 1954.


NOTARY PUBLIC and COURT REPORTER

My Commission expires:

June 19, 1955.

ADA DEARNLEY & ASSOCIATES
STENOGRAPHIC REPORTERS
ALBUQUERQUE, NEW MEXICO
TELEPHONE 3-6691

1870
 1871
 1872
 1873
 1874
 1875
 1876
 1877
 1878
 1879
 1880
 1881
 1882
 1883
 1884
 1885
 1886
 1887
 1888
 1889
 1890
 1891
 1892
 1893
 1894
 1895
 1896
 1897
 1898
 1899
 1900

1870
 1871
 1872
 1873
 1874
 1875
 1876
 1877
 1878
 1879
 1880
 1881
 1882
 1883
 1884
 1885
 1886
 1887
 1888
 1889
 1890
 1891
 1892
 1893
 1894
 1895
 1896
 1897
 1898
 1899
 1900

1870
 1871
 1872
 1873
 1874
 1875
 1876
 1877
 1878
 1879
 1880
 1881
 1882
 1883
 1884
 1885
 1886
 1887
 1888
 1889
 1890
 1891
 1892
 1893
 1894
 1895
 1896
 1897
 1898
 1899
 1900

	Representing	Location
J. T. Harty	Gulf	Midland
J. G. Porter	"	Houston
Bill Bates	TEXAS CO	Midland
W. K. Kell	"	Houston
Warren Martin	"	Fort Worth, Tex
L. C. White	"	Santa Fe, N.M.
N. F. Weaver	"	Midland
J. A. Schaller	"	Midland
Paul R. Switzer	"	Midland
J. G. Thomas	O.C.C.	Manuel, N.M.
Ed. Belton	The Superior Oil Co	Artesia
Frank Taylor	Gulf Oil Corp.	Russell, N.M.
B. A. P. ...	Don't ...	Franklin, N.M.
E. D. Anderson	"	Midland, Tex
Ed. ...	Phillips 66	"
Ch. ...	Phillips 66	Amarillo, Tex
W. ...	Phillips 66	Basilla, Tex
H. ...	Phillips 66	Devil's Den
D. ...	Phillips 66	Houston, Tex
R. ...	Phillips 66	Odessa
W. ...	Phillips 66	Odessa
A. ...	Phillips 66	Odessa
R. ...	Phillips 66	Odessa
E. ...	Phillips 66	Odessa
R. ...	Phillips 66	Odessa
E. ...	Phillips 66	Odessa
J. ...	Phillips 66	Odessa
D. ...	Phillips 66	Odessa
J. ...	Phillips 66	Odessa
D. ...	Phillips 66	Odessa

ILLEGIBLE

ILLEGIBLE

ILLEGIBLE

[illegible]

ILLEGIBLE

North American people
who are not
of the same
race as the
people of the
North American
people.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 727
Order No. R-610-C

THE APPLICATION OF THE OIL CONSERVATION
COMMISSION UPON ITS OWN MOTION TO CON-
SIDER AN ORDER AMENDING, REVISING OR
ABROGATING EXISTING RULES AND REGULATIONS
OF THE OIL CONSERVATION COMMISSION, AND/OR
PROMULGATING RULES AND REGULATIONS RELATING
TO GAS POOL DELINEATION, GAS PRORATION AND
OTHER RELATED MATTERS AFFECTING OR CONCERNING
THE BLINBRY GAS POOL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on November 16, 1955,
and again on December 14, 1955 at Santa Fe, New Mexico, before the Oil Conser-
vation Commission, hereinafter referred to as the "Commission".

NOW on this 12th day of JANUARY, 1956, the Commission, a quorum
being present, having considered the records and testimony adduced and being
fully advised in the premises,

FINDS:

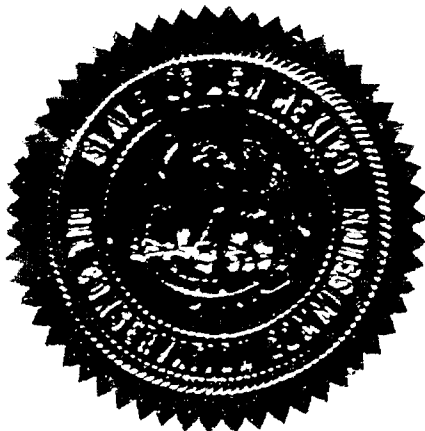
- (1) That the Commission has continued jurisdiction, acquiring same
at the initial hearing on June 16, 1954.
- (2) That due notice of the time and place of hearing and the purpose
thereof has been given as required by law.
- (3) That no evidence was presented to justify revising the provisions
of Order No. R-610, as amended by Orders R-610-A and R-610-B.

IT IS THEREFORE ORDERED:

That order R-610, as amended by Order R-610-A and R-610-B, which con-
stitutes the Special Rules and Regulations for the Blinbry Gas Pool, the
Blinbry Oil Pool and the Terry-Blinbry Oil Pool, be and the same are con-
tinued in full force and effect until further order of the Commission.

That a hearing shall be held on November 13, 1956, at which time the
Commission shall hear testimony and receive evidence and shall revise the
rules set forth in this order in accordance with testimony and evidence re-
ceived at said hearing if such be necessary.

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



STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

John F. Sumner
JOHN F. SUMNER, Chairman

E. S. Walker
E. S. WALKER, Member

W. B. Macey
W. B. MACEY, Secretary

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. 727
Order No. R-610

THE APPLICATION OF THE OIL
CONSERVATION COMMISSION ON
ITS OWN MOTION FOR AN ORDER
AMENDING, REVISING OR ABROGATING
EXISTING RULES AND REGULATIONS OF
THE OIL CONSERVATION COMMISSION,
AND/OR PROMULGATING RULES AND
REGULATIONS RELATING TO GAS POOL
DELINEATION, GAS PRORATION AND
OTHER RELATED MATTERS AFFECTING
OR CONCERNING THE BLINEBRY GAS
POOL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a. m. on June 16, 1954, and was successively continued to October 20, 1954, at which time it came on for final hearing at Hobbs, New Mexico, before the Oil Conservation Commission, hereinafter referred to as the "Commission".

NOW, on this 11th day of April, 1955, the Commission, a quorum being present, having considered the record and the testimony entered at said hearing, and being fully advised in the premises,

FINDS:

(1) That due notice of the time and place of hearing and the purpose thereof having been given as required by law, the Commission has jurisdiction of this case and the subject matter thereof.

(2) That under date of February 17, 1953, the Commission did issue its Order No. R-264 creating the Blinebry Gas Pool. That Order R-264, as amended by Order R-264-A, as further amended by Order R-464, did define the vertical and horizontal limits of the Blinebry Gas Pool and that by subsequent orders, the Commission extended the horizontal limits of the Blinebry Gas Pool.

(3) That under date of September 26, 1953, the Commission issued Order R-372 and under date of November 10, 1953, the Commission issued Order 372-A, which orders provided rules, definitions and procedures to be followed in prorating gas in the Blinebry Gas Pool; and by subsequent orders issued after due notice and hearing, the Commission did allocate the production of gas in said pool commencing January 1, 1954.

(4) That the producing capacity of gas wells in the Blinebry Gas Pool is in excess of the market demand for gas produced from said pool.

(5) That, in order to prevent waste, it is necessary to allocate and prorate the production of gas among the gas wells in the Blinebry Gas Pool in accordance with the provisions of this order.

(6) That the protection and proper recognition of correlative rights as such rights are defined by Section 26 (h), Chapter 168, New Mexico Session Laws of 1949, require that the production of gas be prorated in accordance with the terms and provisions of this order.

(7) That the Rules and Regulations hereinafter set forth in this order are in all respects in the interests of conservation and provide for the allocation of allowable production among the gas wells in the Blinebry Gas Pool on a reasonable basis and give appropriate recognition to correlative rights.

(8) That the production of oil from the Blinebry Oil Pool is a salvage operation and should be administered as such.

(9) That the horizontal limits of the Blinebry Gas Pool, the Blinebry Oil Pool and the Terry-Blinebry Oil Pool should be redefined as set forth in Exhibits "A", "B" and "C", attached hereto and made a part hereof.

(10) That the vertical limits of the Blinebry Gas Pool should be defined as set out in Commission Order R-464 and as hereinafter repeated.

(11) That one gas well in the Blinebry Gas Pool will effectively and efficiently drain an area of 160 acres. Due to the complex nature of the Blinebry Gas and associated reservoirs, gas proration units in excess of 160 acres should not be permitted pending further reservoir information.

(12) That, in order to prevent waste, a "no-flare" rule should be adopted to prohibit the flaring, venting or otherwise wasting of casinghead gas or any other type of gas produced in the Blinebry Gas Pool, the Blinebry Oil Pool or the Terry-Blinebry Oil Pool.

(13) That semi-annual bottom-hole pressure surveys should be conducted in portions of the Blinebry Gas Pool and in the entire Terry-Blinebry Oil Pool to ascertain the pressure differential which exists between that portion of the common source of supply known to contain dry gas and the rim of the reservoir which is known to contain a commercial accumulation of oil.

(14) That, in order to classify wells in the Blinebry Gas Pool and the Blinebry Oil Pool, semi-annual gas-liquid ratio tests and semi-annual determinations of the gravity of that liquid hydrocarbon produced from wells in said pools should be conducted in the Blinebry Oil Pool and the Blinebry Gas Pool.

(15) That, in the interests of conservation, the special rules hereinafter set forth governing the production of gas from the Blinebry Gas Pool and the production of oil from the Blinebry Oil Pool and the Terry-Blinebry Oil Pool should be adopted.

IT IS THEREFORE ORDERED:

(1) That the horizontal limits of the Blinebry Gas Pool, the Blinebry Oil Pool and the Terry-Blinebry Oil Pool shall be the areas described in Exhibits "A", "B" and "C", attached hereto and made a part hereof.

(2) That the vertical limits of the Blinebry Gas Pool and the Blinebry Oil Pool shall extend from a point 75 feet above the "Blinebry Marker" to a point 300 feet below the "Blinebry Marker".

(3) That special pool rules applicable to the Blinebry Gas Pool should be, and the same hereby are promulgated as follows:

SPECIAL RULES AND REGULATIONS FOR THE
BLINEBRY GAS POOL

Well Spacing and Acreage Requirements for Drilling Tracts:

RULE 1: Any well drilled a distance of one mile or more outside the boundary of the Blinebry Gas Pool shall be classified as a wildcat well. Any well drilled less than one mile outside the boundary of the Blinebry Gas Pool shall be spaced, drilled, operated and prorated in accordance with the regulations in effect in the Blinebry Gas Pool.

RULE 2: Each well drilled or recompleted within the Blinebry Gas Pool on a standard proration unit after the effective date of this rule shall be drilled not closer than 660 feet to any boundary line of the tract nor closer than 330 feet to a quarter-quarter section line or subdivision inner boundary line. Any well drilled to and producing from the Blinebry Gas Pool prior to the effective date of this order at a location conforming to the spacing requirements effective at the time said well was drilled shall be considered to be located in conformance with this rule.

RULE 3: The Director of the Commission shall have authority to grant exception to the requirements of Rule 2 without notice and hearing where application has been filed in due form and the necessity for the unorthodox location is based on topographical conditions or is occasioned by the re-completion of a well previously drilled to another horizon.

Applicants shall furnish all operators within a 1320-foot radius of the subject well a copy of the application to the Commission. Applicant shall include with his application a list of names and addresses of all operators within such radius, together with a stipulation that proper notice has been given said operators at the addresses given. The Director of the Commission shall wait at least 20 days before approving any such unorthodox location, and shall approve such unorthodox location only in the absence of objection of any offset operator. In the event an operator objects to the unorthodox location, the Commission shall consider the matter only after proper notice and hearing.

RULE 4: The provisions of Statewide Rule 104, Paragraph (k), shall not apply to the Blinebry Gas Pool located in Lea County, New Mexico.

Gas Proration:

RULE 5: (A) That acreage allocated to a gas well for proration purposes shall be known as the gas proration unit for that well. For the purpose of gas allocation in the Blinebry Gas Pool, a standard proration unit shall consist of between 158 and 162 surface contiguous acres substantially in the form of a square which shall be a legal subdivision (quarter section) of the U. S. Public Land Survey; provided, however, that a non-standard gas proration unit may be formed after notice and hearing by the Commission, or under the provisions of Paragraph (B) of this Rule.

(B) The Director of the Commission shall have authority to establish a non-standard gas proration unit by administrative action (without notice and hearing) where application has been filed in due form and where the following facts exist and the following provisions are complied with, without exception:

1. The non-standard proration unit will consist of contiguous quarter-quarter sections and/or lots, with a common side between any two adjacent quarter-quarter sections and/or lots.

2. The non-standard proration unit will lie wholly within a single governmental quarter section.

3. The entire non-standard proration unit may be reasonably assumed to be productive of gas from the Blinebry Gas Pool.

4. The length or width of the non-standard gas proration unit will not exceed 2640 feet.

5. The applicant presents written consent in the form of waivers from:

(a) All operators owning interests in the quarter section in which the non-standard gas proration unit is to be situated, which interest is not included in the proposed non-standard gas proration unit.

(b) All operators owning interests within 1500 feet of the well to which such non-standard gas proration unit is to be dedicated.

6. In lieu of the provisions of subparagraph 5 under Paragraph (B) of this rule, applicant may furnish proof of the fact that said offset operators were notified by registered mail of his intent to form such non-standard gas proration unit. The Director of the Commission may approve such application for administrative approval of a non-standard gas proration unit if, after a period of 30 days following the mailing of said notice, no operator has entered an objection to the formation of such non-standard gas proration unit.

(C) The allowable production from any non-standard gas proration unit as compared with the allowable production therefrom if such tract were a standard unit shall be in the ratio the area of such non-standard proration unit bears to a standard proration unit of 160 acres. Any gas proration unit containing between 158 and 162 acres shall be considered to contain 160 acres for the purpose of computing allowables.

RULE 6: Acreage dedicated to a gas well in the Blinebry Gas Pool shall not be simultaneously dedicated to an oil well in the Blinebry Oil Pool.

RULE 7: In the event an oil well in the Blinebry Oil Pool is reclassified as a gas well in the Blinebry Gas Pool, the operator of such well will be afforded the opportunity to form a non-standard proration unit for the well; provided, however, that until such unit is formed, such well shall be allocated a gas allowable commensurate with the acreage contained in the unit formerly dedicated to the oil well in the Blinebry Oil Pool.

RULE 8: In the event such reclassification should cause the occurrence of two gas wells producing from the Blinebry Gas Pool within a single proration unit, the sum total of the allowables allocated to the two wells shall be equivalent to that volume of gas allocated to a single proration unit; provided, however, that the operator of such wells shall have the option to determine the proportion of the assigned allowable to be produced by each individual well.

RULE 9: The dual completion of a well so as to produce gas from the Blinebry Gas Pool and oil from the Blinebry Oil Pool is hereby prohibited.

RULE 10: (a) The Commission after notice and hearing shall consider the nominations of gas purchasers from the Blinebry Gas Pool and other relevant data and shall fix the allowable production of gas from the Blinebry Gas Pool.

(b) The allowable assigned any well capable of producing its normal gas allowable shall be the same proportion of the total remaining allowable allocated to said pool, after deducting allowables of marginal wells, that the number of acres contained in the gas proration unit for that well bears to the acreage contained in all gas proration units assigned to non-marginal wells in the Blinebry Gas Pool.

RULE 11: At least 30 days prior to the beginning of each gas proration period, the Commission shall hold a hearing after due notice has been given. The Commission shall cause to be submitted by each gas purchaser "Preliminary Nominations" of the amount of gas which each in good faith actually desires to purchase within the ensuing proration period, by months, from the Blinebry Gas Pool. The Commission shall consider the "Preliminary Nominations" of purchasers, actual production and such other factors as may be deemed applicable in determining the amount of gas that may be produced without waste within the ensuing proration period. "Preliminary Nominations" shall be submitted on a form prescribed by the Commission.

RULE 12: In the event a gas purchaser's market shall have increased or decreased, purchaser may file with the Commission prior to the 10th day of the month a "Supplemental" nomination showing the amount of gas the purchaser in good faith actually desires to purchase during the ensuing proration month from the Blinebry Gas Pool. "Supplemental Nominations" shall be submitted on a form prescribed by the Commission. The Commission shall hold a public hearing between the 13th and 20th days of each month to determine

the reasonable market demand for gas for the ensuing proration month and shall issue a proration schedule setting out the amount of gas which each well may produce during the ensuing proration month.

Included in the monthly proration schedule shall be:

(a) A summary of the total pool allocation for that month showing nominations and adjustments made for underage or overage applied from a previous month.

(b) A tabulation of the net allowable and production for the second preceding month, together with a cumulative overage or underage computation.

(c) A tabulation of the current and net allowables for the preceding month.

(d) A tabulation of current monthly allowables for the ensuing proration month.

(e) A tabulation of the acreage assigned each well together with a tabulation of the acreage factor assigned each well. For the purposes of allocation, a proration unit of 160 acres shall be assigned an acreage factor of 1.00; a proration unit of 80 acres a factor of 0.50, etc.

The Commission shall include in the proration schedule the gas wells in the Blinberry Gas Pool delivering to a gas transportation facility, or lease gathering system, and shall include in the proration schedule of the Blinberry Gas Pool any well which it finds is being unreasonably discriminated against through denial of access to a gas transportation facility which is reasonably capable of handling the type of gas produced by such well. The total allowable to be allocated to the pool each month shall be equal to the sum of the preliminary or supplemental nominations (whichever is applicable), together with any adjustment which the Commission deems advisable.

If, during a proration month, the acreage assigned a well is increased, the operator shall notify the Proration Manager in writing (Box 2045, Hobbs, New Mexico) of such increase. The increased allowable assigned the gas proration unit for the well shall be effective on the first day of the month following receipt of the notification by the Proration Manager.

Balancing of Production:

RULE 13: Underproduction: The dates 7:00 a.m., January 1, and 7:00 a.m., July 1, shall be known as balancing dates and the periods of time bound by these dates shall be known as gas proration periods. The amount of current gas allowable remaining unproduced at the end of each proration period shall be carried forward to and may be produced during the next succeeding proration period in addition to the normal gas allowable for such succeeding period; but whatever amount thereof is not made up within the first succeeding proration period shall be cancelled.

If it appears that such continued underproduction has resulted from inability of the well to produce its allowable, it may be classified as a marginal well and its allowable reduced to the well's ability to produce.

If at the end of a proration period a marginal well has produced more than the total allowable assigned a non-marginal unit of corresponding size, the marginal well shall be reclassified as a non-marginal well and its allowable adjusted accordingly.

If during a proration period a marginal well is reworked or re-completed in such a manner that its productive capacity is increased to the extent that it should be reclassified as a non-marginal well, the reclassification shall be effective on the first day of the proration month following the date of recompletion.

The Proration Manager may reclassify a well at any time if production data or deliverability tests reflect the need for such a reclassification.

RULE 14: Overproduction: A well which has produced a greater amount of gas than was allowed during a given proration period shall have its allowable for the first succeeding proration period reduced by the amount of such overproduction, and such overproduction shall be made up within the first succeeding proration period. If, at the end of the first succeeding proration period, the well is still overproduced, and has not been in balance since the end of the preceding proration period, then it shall be shut-in and its current monthly allowable charged against said overproduction until the well is in balance. If, at any time, a well is overproduced an amount equaling six times its current monthly allowable, it shall be shut-in until it is in balance.

The Commission may allow overproduction to be made up at a lesser rate than would be the case if the well were completely shut-in upon a showing at public hearing after due notice that complete shut-in of the well would result in material damage to the well.

Granting of Allowables

RULE 15: No gas well shall be given an allowable until Form C-104 and Form C-110 have been filed, together with a plat showing acreage attributed to said well and the locations of all wells on the lease.

RULE 16: Allowables to newly completed gas wells shall commence on the date of connection to a gas transportation facility, as determined from an affidavit furnished to the Commission (Box 2045, Hobbs, New Mexico) by the purchaser, or the date of filing of Form C-104 and Form C-110 and the plat described above, whichever date is the later.

Reporting of Production

RULE 17: The monthly gas production from each well shall be metered separately and the gas production therefrom shall be reported to the

Commission on Form C-115 so as to reach the Commission on or before the 24th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the gas produced.

Each purchaser or taker of gas in the Blinebry Gas Pool shall submit a report to the Commission so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was purchased or taken.

Such report shall be filed on either Form C-111 or Form C-114 (whichever is applicable) with the wells being listed in approximately the same order as they are listed on the proration schedule.

Forms C-111 and C-114 referred to herein shall be submitted in duplicate, the original being sent to the Commission at Box 871, Santa Fe, New Mexico, the other copy being sent to Box 2045, Hobbs, New Mexico.

Forms C-115 shall be submitted in accordance with Rule 1114 of the Commission's Rules and Regulations.

The full production of gas from each well shall be charged against the well's allowable regardless of what disposition has been made of the gas; provided, however, that gas used on the lease for consumption in lease houses, treaters, compressors, combustion engines and other similar lease equipment shall not be charged against the well's allowable. The production of intermediate or low-pressure gas derived from the staging of the well fluids need not be charged against the well's gas allowable, provided that said intermediate or low-pressure gas is utilized in accordance with the provisions of Order R-464.

RULE 18: A gas well in the Blinebry Gas Pool shall mean a well producing from within the vertical and horizontal limits of the Blinebry Gas Pool which:

(a) Produces liquid hydrocarbons possessing a gravity greater than 51° API, or,

(b) Produces liquid hydrocarbons possessing a gravity of less than 51° API, but with a producing gas-liquid ratio in excess of 32,000 cubic feet of gas per barrel of liquid hydrocarbon.

RULE 19: A well producing from within the horizontal and vertical limits of the Blinebry Gas Pool and not classified as a gas well as defined in Rule 18, shall be classified as an oil well in the Blinebry Oil Pool.

RULE 20: Any well drilled and completed in good faith prior to the effective date of this order, which well is situated within the horizontal boundaries of the Blinebry Gas Pool as herein defined but which produces gas from a depth interval exceeding the vertical limits of the Blinebry Gas Pool as herein defined, is hereby validated and shall be classified as a gas well in the Blinebry Gas Pool, provided that said well conforms to the

definition of a gas well in said pool as set out in Rule 18 of this section of this order, and provided that the well is classified as a gas well in the Blinebry Gas Pool under the rules, regulations and orders in effect on the day immediately preceding the effective date of this order.

RULE 21: The term "gas purchaser", as used in these rules, shall mean any "taker" of gas either at the wellhead or at any point on the lease where a connection is made to facilitate the transportation or utilization of gas. It shall be the responsibility of the "taker" to submit a nomination as provided in Rules 11 and 12.

RULE 22: The Proration Manager may reclassify a well under Rules 18 or 19 if production data, gas-oil ratio tests or other evidence reflects the need for such reclassification.

For proration purposes, the effective date of such reclassification shall be the first day of the next succeeding six months gas proration period.

The Proration Manager will notify the operator of the reclassified well of such reclassification and the effective date thereof; provided, however, that operator may appeal such reclassification to the Director of the Commission in writing.

RULE 23: No gas, either dry gas or casinghead gas, shall be flared, vented or otherwise wasted in the Blinebry Gas Pool at any time after ninety (90) days dating from May 1, 1955, or ninety (90) days from the date of completion of a well in said pool, whichever is the later.

Any operator desiring to obtain an exception to the foregoing provision of this rule shall submit to the Director of the Commission an application for such exception accompanied by a sworn statement setting forth the facts and circumstances which justify such exception. The Director is hereby authorized to grant such exception when the granting of such is necessary to protect correlative rights, prevent waste, or to prevent undue hardship on the applicant. The Director shall (a) grant the exception within 15 days following receipt of the application and statement, or (b) set the application for hearing before the Commission at a regularly scheduled monthly hearing; provided, however, that no such applicant shall incur any penalty by reason of a delay in setting the application for hearing. Public notice of the hearing of the application shall be published in the manner provided by law.

Should the Director grant an exception to the provision of Rule 23, notification of such exception shall be distributed to the Commission's regular mailing list.

RULE 24: Bottom-hole pressure tests will be conducted semi-annually during the months of May and October on all gas wells located to the north of an east-west line coinciding with the north lines of Sections 21, 22, 23 and 24, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico; such wells to be producing from within the vertical and horizontal boundaries of the Blinebry Gas Pool and classified as gas wells under the rules contained in this order. Results of such tests will be reported to the Commission on Form C-124 on or before the 25th day of June and the 25th day of November of each calendar year.

Order No. K-610

All bottom-hole pressure tests, except tests on dually completed wells producing from the Blinebry Gas Pool, will be conducted in accordance with Rule 302 of the Rules of the Commission. Shut-in period will be 48 hours, datum elevation will be 2400 feet subsea, (-2400), and base temperature will be 100 degrees Fahrenheit.

Bottom-hole pressures on dually completed wells producing gas from the Blinebry Gas Pool may be calculated from a 72-hour shut-in pressure at the wellhead, provided that an accurate determination of the fluid level in the hole is made employing sonic or other methods of equivalent accuracy. The gravity of the fluid in the hole shall be that gravity determined by averaging the gravities of those fluids produced on official test in the Blinebry Gas Pool during the regular semi-annual gas-liquid ratio and gravity testing period next preceding the subject bottom-hole pressure test period. The gravity to be employed in the calculation of bottom-hole pressures during a particular testing period shall be determined by the Commission. All interested operators shall be duly notified of such determination by the Commission.

RULE 25: Gas-liquid ratio tests and determinations of the gravity of that liquid hydrocarbon recovered from wells in the Blinebry Gas Pool shall be conducted semi-annually during the months of May and October on all wells located in and producing from the Blinebry Gas Pool. Results of such tests will be reported to the Commission on Form C-116 on or before the 15th day of June and the 15th day of November of each calendar year.

RULE 26: At no time will the horizontal boundaries of the Blinebry Gas Pool conflict with or overlap the horizontal boundaries of the Terry-Blinebry Oil Pool.

RULE 27: The horizontal limits of the Blinebry Gas Pool shall be those limits set forth in Exhibit "A" attached hereto and made a part hereof.

PROVIDED FURTHER, That special pool rules applicable to the Blinebry Oil Pool be, and the same hereby are promulgated as follows:

SPECIAL RULES FOR THE BLINEBRY OIL POOL

RULE 1: No gas, either dry gas or casinghead gas, shall be flared, vented or otherwise wasted in the Blinebry Oil Pool at any time after ninety (90) days dating from May 1, 1955, or ninety (90) days from the date of completion of a well in said pool, whichever is the later.

Any operator desiring to obtain an exception to the foregoing provision of this rule shall submit to the Director of the Commission an application for such exception accompanied by a sworn statement setting forth the facts and circumstances which justify such exception. The Director is hereby authorized to grant such exception when the granting of such is necessary to protect correlative rights, prevent waste, or prevent undue hardship on the applicant.

The Director shall (a) grant the exception within 15 days following receipt of the application and statement, or (b) set the application for hearing before the Commission at a regularly scheduled monthly hearing; provided,

however, that no such applicant shall incur any penalty by reason of a delay in setting the application for hearing. Public notice of the hearing of the application shall be published in the manner provided by law.

Should the Director grant an exception to the provisions of Rule 1, notification of such exception shall be distributed to the Commission's regular mailing list.

RULE 2: An oil well in the Blinebry Oil Pool shall mean a well producing from within the vertical and horizontal limits of the Blinebry Oil Pool which:

(a) Produces liquid hydrocarbons possessing a gravity of less than 51° API, or,

(b) Produces liquid hydrocarbons possessing a gravity of greater than 51° API, but with a producing gas-liquid ratio not exceeding 32,000 cubic feet of gas per barrel of liquid hydrocarbon.

RULE 3: A well producing from within the vertical and horizontal limits of the Blinebry Oil Pool, and not classified as an oil well under Rule 2, shall be classified as a gas well in the Blinebry Gas Pool.

RULE 4: The Proration Manager may reclassify a well under Rules 2 and 3 when production data, gas-oil ratio tests or other evidence reflects the need for such reclassification.

For proration purposes, the effective date of such reclassification shall be the first day of the next succeeding six-months gas proration period.

The Proration Manager shall notify the operator of the reclassified well of such reclassification and the effective date thereof; provided, however, that the operator of a reclassified well may appeal such reclassification to the Secretary-Director of the Commission in writing.

RULE 5: The limiting gas-oil ratio for oil wells in the Blinebry Oil Pool shall be 6,000 cubic feet of gas per barrel of oil. The provision of this rule shall become effective on May 1, 1955.

RULE 6: Acreage dedicated to an oil well producing from the Blinebry Oil Pool shall not be simultaneously dedicated to a gas well producing from the Blinebry Gas Pool.

RULE 7: The dual completion of a well to produce oil from the Blinebry Oil Pool and gas from the Blinebry Gas Pool is hereby prohibited.

RULE 8: The dual completion of a well to cause said well to be classified as an oil well in the Blinebry Oil Pool and an oil well in any other oil or gas pool as designated by the Commission is hereby prohibited.

RULE 9: Gas-liquid ratio tests and determinations of the gravity of that liquid hydrocarbon recovered from wells in the Blinebry Oil Pool shall be conducted semi-annually during the months of May and October on all wells located in and producing from the Blinebry Oil Pool. Results of such tests shall be submitted to the Commission on Form C-116, on or before the 15th day of June and the 15th day of November of each calendar year.

RULE 10: In the event an oil well in the Blinebry Oil Pool shall be reclassified as a gas well in the Blinebry Gas Pool, operator of such a well shall be afforded the opportunity to form a standard or non-standard gas proration unit for such well under the rules applicable to the Blinebry Gas Pool; provided, however, that until such unit is formed, such well shall be allocated a gas allowable commensurate with the acreage contained in the proration unit formerly dedicated to the oil well in the Blinebry Oil Pool.

RULE 11: The horizontal limits of the Blinebry Oil Pool shall be those limits set forth in Exhibit "B" attached hereto and made a part hereof.

PROVIDED FURTHER, That special rules applicable to the Terry-Blinebry Oil Pool be, and the same hereby are promulgated as follows:

SPECIAL RULES FOR THE TERRY-BLINEBRY OIL POOL

RULE 1: At no time will the horizontal boundaries of the Terry-Blinebry Oil Pool conflict with or overlap the horizontal boundaries of the Blinebry Gas Pool.

RULE 2: No gas, either dry gas or casinghead gas, shall be flared, vented or otherwise wasted in the Terry-Blinebry Oil Pool at any time after ninety (90) days dating from May 1, 1955, or ninety (90) days from the date of completion of a well in said pool, whichever is the later.

Any operator desiring to obtain an exception to the foregoing provision of this rule shall submit to the Director of the Commission an application for such exception accompanied by a sworn statement setting forth the facts and circumstances which justify such exception. The Director is hereby authorized to grant such exception when the granting of such is necessary to protect correlative rights, prevent waste, or prevent undue hardship on the applicant.

The Director shall (a) grant the exception within 15 days following receipt of the application and statement, or (b) set the application for hearing before the Commission at a regularly scheduled monthly hearing; provided, however, that no such applicant shall incur any penalty by reason of a delay in setting the application for hearing. Public notice of the hearing of the application shall be published in the manner provided by law.

Should the Director grant an exception to the provisions of Rule 2, notification of such exception shall be distributed to the Commission's regular mailing list.

RULE 3. Bottom-hole pressure tests shall be conducted semi-annually during the months of May and October on all flowing oil wells producing from within the limits of the Terry-Blinbry Oil Pool. Results of such tests shall be reported to the Commission on Form C-124 on or before the 25th day of June and the 25th day of November of each calendar year.

Bottom-hole pressure tests will be conducted in accordance with Rule 302 of the Rules of the Commission. Shut-in time will be 48 hours; datum elevation will be 2400 feet subsea (-2400), and base temperature will be 100 degrees Fahrenheit.

RULE 4: The limiting gas-oil ratio for oil wells in the Terry-Blinbry Oil Pool shall be 6,000 cubic feet of gas per barrel of oil. The provision of this rule shall become effective on May 1, 1955.

RULE 5: The dual completion of a well to cause said well to be classified as an oil well in the Terry-Blinbry Oil Pool and an oil well in any other oil or gas pool as designated by the Commission is hereby prohibited.

RULE 6: The horizontal limits of the Terry-Blinbry Oil Pool shall be those limits set forth in Exhibit "C" attached hereto and made a part hereof.

PROVIDED FURTHER, That for gas allocation purposes and assignment of allowables, the provisions of this order shall become effective on May 1, 1955, unless otherwise stated in this order.

It is recognized that many wells will be reclassified and reassigned as a result of the provisions of this order and that the time involved in the reclassification of wells may cause certain inequities; therefore, the Proration Manager is hereby directed to take such action as he deems advisable to prevent inequitable withdrawals.

PROVIDED FURTHER, That in filing Form C-101, "Notice of Intention to Drill or Recomplete", all operators shall strictly comply with the provisions of Commission Rule 104, paragraph (e).

PROVIDED FURTHER, That failure to comply with the provisions of this order or the rules contained herein shall result in the cancellation of allowable assigned to the affected well. No further allowable shall be assigned to the affected well until all rules and regulations are complied with. The Proration Manager shall notify the operator of the well and the purchaser in writing of the date of allowable cancellation and the reason therefor.

PROVIDED FURTHER, That a hearing shall be held on November 16, 1955, at which time the Commission shall hear testimony and receive evidence and shall revise the rules set forth in this order in accordance with testimony and evidence presented at said hearing, if such be necessary.

EXHIBIT "A"

Horizontal Limits of Blinebry Gas Pool

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM

Sec. 3:	Lots 13, 14, 15 and 16, S/2
Sec. 4:	Lots 1, 2, 7, 8, 9, 10, 15 and 16, S/2
Sec. 9:	All
Sec. 10:	All
Sec. 11:	SW/4
Sec. 14:	W/2
Sec. 15:	All
Sec. 16:	All
Sec. 21:	All
Sec. 22:	All
Sec. 23:	All
Sec. 26:	W/2
Sec. 27:	All
Sec. 28:	All
Sec. 33:	All
Sec. 34:	All
Sec. 35:	All
Sec. 36:	All

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM

Sec. 1:	All
Sec. 2:	All
Sec. 3:	All
Sec. 4:	All
Sec. 9:	All
Sec. 10:	All
Sec. 11:	All
Sec. 12:	All
Sec. 13:	All
Sec. 14:	All
Sec. 15:	All
Sec. 22:	All
Sec. 23:	All
Sec. 24:	All
Sec. 25:	All

EXHIBIT "B"

Horizontal Limits of Blinebry Oil Pool

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM

Sec. 3:	Lots 13, 14, 15 and 16, S/2
Sec. 4:	Lots 1, 2, 7, 8, 9, 10, 15 and 16, S/2
Sec. 9:	All
Sec. 10:	All
Sec. 11:	SW/4
Sec. 14:	W/2
Sec. 15:	All
Sec. 16:	All
Sec. 21:	All

EXHIBIT "B" (continued)

Horizontal Limits of Blinebry Oil Pool

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM

Section 22:	All
Section 23:	All
Section 26:	W/2
Section 27:	All
Section 28:	All
Section 33:	All
Section 34:	All
Section 35:	All
Section 36:	All

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM

Sec. 1:	All
Sec. 2:	All
Sec. 3:	All
Sec. 4:	All
Sec. 9:	All
Sec. 10:	All
Sec. 11:	All
Sec. 12:	All
Sec. 13:	All
Sec. 14:	All
Sec. 15:	All
Sec. 22:	All
Sec. 23:	All
Sec. 24:	All
Sec. 25:	All

EXHIBIT "C"

Horizontal Limits of Terry-Blinebry Oil Pool

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMPM

Sec. 32:	SE/4
Sec. 33:	S/2
Sec. 34:	S/2

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM

Sec. 1:	Lots 9, 10, 11, 12, 13, 14, 15 & 16, S/2
Sec. 2:	All
Sec. 3:	Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12
Sec. 4:	Lots 3, 4, 5, 6, 11, 12, 13 and 14
Sec. 11:	N/2, SE/4
Sec. 12:	All
Sec. 13:	All
Sec. 14:	E/2

EXHIBIT "C" (continued)

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM (continued)

Sec. 24: All
Sec. 25: All
Sec. 26: E/2

DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

John F. Simms
JOHN F. SIMMS, Chairman

E. S. Walker
E. S. WALKER, Member

W. B. Macey
W. B. MACEY, Member and Secretary



PROPOSED RULES AND REGULATIONS
FOR THE _____ GAS POOL,
LEA COUNTY, NEW MEXICO

WELL SPACING AND ACREAGE REQUIREMENTS FOR DRILLING TRACTS

RULE 1. Same as Order No. R-520, except substitute applicable
Gas Pool Name.

RULE 2. Each well drilled or recompleted within the _____
Gas Pool on a standard proration unit after the effective date of this rule
shall be drilled not closer than 660 feet to any boundary line of the tract
nor closer than 330 feet to a quarter-quarter section line or subdivision
inner boundary line. Any well drilled to and producing from the _____
Gas Pool prior to the effective date of this order at a location conforming
to the spacing requirements effective at the time said well was drilled shall
be considered to be located in conformance with this rule.

RULE 3. The Secretary of the Commission shall have authority to
grant exception to the requirements of Rule 2 without notice and hearing
where application has been filed in due form and the necessity for the un-
orthodox location is based on topographical conditions or is occasioned by
the recompletion of a well previously drilled to another horizon.

Applicants shall furnish all operators within a 1320-foot radius
of the subject well a copy of the application to the Commission, and appli-
cant shall include with his application a list of names and addresses of all
operators within such radius, together with a stipulation that proper notice
has been given said operators at the addresses given. The Secretary of the
Commission shall wait at least 20 days before approving any such unorthodox
location, and shall approve such unorthodox location only in the absence of
objection of any offset operators. In the event an operator objects to the

unorthodox location the Commission shall consider the matter only after proper notice and hearing.

RULE 4. Same as Order No. R-520, except substitute applicable Gas Pool Name.

RULE 5. (a) The acreage allocated to a gas well for proration purposes shall be known as the gas proration unit for that well. For the purpose of gas allocation in the _____ Gas Pool, a standard proration unit shall consist of between 158 and 162 contiguous surface acres substantially in the form of a square which shall be a legal subdivision (quarter section) of the U. S. Public Lands Surveys, provided, however, that a gas proration unit of less than 158 acres or more than 162 acres may be formed after notice and hearing by the Commission or as outlined in Paragraph (d) of this rule. Any standard proration unit consisting of between 158 and 162 contiguous surface acres shall be considered as containing 160 acres for the purpose of computing allowables.

(b) Any proration unit containing less than 158 acres or more than 162 acres shall be a non-standard unit and its allowable shall be decreased or increased in the proportion that the standard proration unit allowable bears to the number of acres contained therein.

(c) Non-standard units shall meet the following requirements:

1. Shall contain not more than 640 acres, the overall length or width of which shall not exceed 5,280 feet, except in instances where the formation of a unit comprising four quarter sections results in a total acreage in excess of 640 acres; and in such event, the unit will be considered to be only 640 acres for proration purposes.

2. All acreage assigned a non-standard unit shall be adjacent or contiguous to the acreage on which the well on said unit is located.

3. All acreage included shall reasonably be presumed to be productive of gas.

(d) The Secretary of the Commission shall grant exceptions to Rule 5 (a) without notice and hearing where the following facts exist and the following provisions are complied with:

1. Application for non-standard unit has been filed in due form with the Secretary of the Commission.

2. Applicant has submitted satisfactory evidence that all operators of offset acreage have been furnished with a copy of the application for the unit.

3. There is no objection, in writing, to the formation of the non-standard unit received by the Secretary of the Commission from any offset operator within twenty (20) days after date of receipt of application by the Secretary of the Commission.

RULE 6. Same as Order No. R-520, except substitute applicable Gas Pool Name.

RULE 7. Same as Order No. R-520, except substitute applicable Gas Pool Name.

RULE 8. Same as Order No. R-520, except substitute applicable Gas Pool Name.

RULE 9. Same as Order No. R-520.

RULE 10. Same as Order No. R-520.

RULE 11. Same as Order No. R-520.

RULE 12. Same as Order No. R-520.

RULE 13. Same as Order No. R-520, except substitute applicable Gas Pool Name.

DEFINITIONS

RULE 14. A gas well in the _____ Gas Pool shall mean any well within the vertical and horizontal limits of the _____ Gas Pool:

(a) Producing gas and liquid hydrocarbons, the liquid hydrocarbons having a gravity of in excess of 45° API, or

(b) Producing gas and liquid hydrocarbons, the liquid hydrocarbons having a gravity of less than 45° API and a gas-oil ratio of in excess of 100,000/1.

RULE 15. Same as Order No. R-520, except substitute applicable Gas Pool Name.

RULE 16. Same as Order No. R-520.

RULE 17. Same as Order No. R-520, except substitute applicable Gas Pool Name.

RULE 18. Same as Order No. R-520, except substitute applicable Gas Pool Name.

No. 548514

RECEIPT FOR CERTIFIED MAIL—15¢

SENT TO: Mendocino Co. Cal.
 STREET AND NO.: 430 State Bldg.
 CITY AND STATE: San Francisco, Calif.

If you want a return receipt, check which 31c shows to whom, when, and address where delivered. If you do not want return receipt, check here 20c fee.

☒ 31c shows to whom, when, and address where delivered. ☐ 20c fee.

POSTMARK OR DATE

POD Form 3800 July 1955 Replaces previous editions of this form which MAY be used.

POSTAGE PAYMENT

RETURN TO: 548514

NAME OF SENDER: Oil Conservation Commission
 STREET AND NO. OR P.O. BOX: Box 871
 POST OFFICE: Santa Fe, New Mexico
 STATE: NM

POSTMARK OR DELIVERY OFFICE: 1956

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, \$300 (GPO)

U. S. GOVERNMENT PRINTING OFFICE: 1955 360304-111

1. *Stick postage stamps to your letter to pay:
15-cent certified mail fee
First-class or airmail fee
Either return receipt fee
Restricted delivery fee (optional)
Special-delivery fee (optional)*
 2. *If you want this receipt postmarked
on the address side of the letter, stick the gummed stub on the address side of the letter, leaving the receipt attached.*
 3. *If you do not want to a postal employee.
retain the receipt, and mail the receipt postmarked,
and your name and address on the back of the letter, detach and
stick it to the back of the letter.*
 4. *Save this receipt and present it if you make inquiry.*
- ★ U. S. GOVERNMENT PRINTING OFFICE
- 10-71547-2

**DELIVERING
EMPLOYEE**

☐ Show address where delivered.

(Signature or name of addressee)

Signature of addressee's agent—Agent should enter addressee's name in the "Agent" column.

1936
I 2
44R

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

March 8, 1956

C
O
P
Y

Monterey Oil Company
430 Statler Building
900 Wilshire Boulevard
Los Angeles 17, California

Attention: Mr. Stafford Park

Gentlemen:

Enclosed please find the exhibits of Gulf Oil Corporation in Cases 727 and 728. We do not have an extra set of these exhibits and since we do not have adequate reproduction facilities here in Santa Fe, we are sending this set to you for your duplication.

We would appreciate your returning these exhibits as soon as possible.

Very truly yours,

W. B. Macey
Secretary - Director

WBM:brp

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

60-111-1
MAIN OFFICE OCC
RECORDED & INDEXED
FEB 24 1956

Monterey Oil Company

430 STATLER BUILDING | 900 WILSHIRE BOULEVARD | LOS ANGELES 17, CALIFORNIA

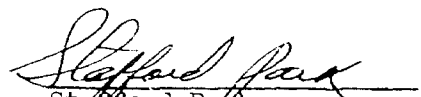
February 24, 1956

Mr. W. B. Macey
Oil Conservation Committee
Box 871
Santa Fe, New Mexico

Dear Mr. Macey:

Please send by parcel post, COD, the Exhibits by
Gulf Oil Corporation for Case No. 727 and No. 728. If prints
are not available, we hereby authorize you to duplicate same.

Very truly yours,


Stafford Park
Chief Petroleum Engineer

SP:t

Case No.

728

Application, Transcript,
Small Exhibits, Etc.

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

May 15, 1959

Mr. Jack Campbell
Box 721
Roswell, New Mexico

Dear Mr. Campbell:

On behalf of your client, Hamilton Dome Oil Company,
we enclose two copies of Order No. R-586-F issued May
13, 1959, by the Oil Conservation Commission in Case
No. 728, which was heard on April 22, 1959 at Santa Fe
before an examiner.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

lr/

Enclosures

C
O
P
Y

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. 728
Order No. R-586-F

APPLICATION OF HAMILTON DOME OIL
COMPANY, LTD., FOR AN EXCEPTION TO
THE REQUIREMENTS OF ORDER NO.
R-586-E FOR A WELL IN THE JUSTIS GAS
POOL, LEA COUNTY, NEW MEXICO

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on April 22, 1959, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 13th day of May, 1959, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, 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, Hamilton Dome Oil Company, Ltd., is the operator of the Westates Carlson Federal "A" Well No. 1, located in the NW/4 SE/4 of Section 25, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico.

(3) That the perforations in the said Westates Carlson Federal "A" Well No. 1 extend below the vertical limits of the Justis Gas Pool as established by Order No. R-586-E.

(4) That Order No. R-586-E required that the said Westates Carlson Federal "A" Well No. 1 be plugged back so as to be open only within the established vertical limits of the Justis Gas Pool.

(5) That the applicant seeks an exception to this "plug-back" requirement for its said Westates Carlson Federal "A" Well No. 1.

(6) That there is little likelihood that allowing the said Westates Carlson Federal "A" Well No. 1 to remain open below the established vertical limits of the Justis Gas Pool will result in waste.

-2-

Case No. 728

Order No. R-586-F

(7) That due to the nature of the completion of the said Westates Carlson Federal "A" Well No. 1, there is a reasonable probability that any attempt to plug back this well so that it will be open only within the defined vertical limits of the Justis Gas Pool would result in waste.

IT IS THEREFORE ORDERED:

That the applicant's Westates Carlson Federal "A" Well No. 1, located in the NW/4 SE/4 of Section 25, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico, be and the same is hereby exempt from the provision in Order No. R-586-E requiring it to be plugged back so as to be open only within the defined vertical limits of the Justis Gas Pool.

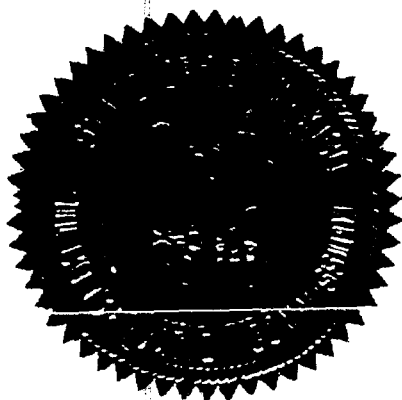
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

John H. Burroughs
JOHN BURROUGHS, Chairman

Murray E. Morgan
MURRAY E. MORGAN, Member

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



ven/

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 4/5/59

CASE NO. 728

HEARING DATE 4/22
DSN @ SF @ 9am

My recommendations for an order in the above numbered case(s) are
as follows:

Enter an order granting an exception
to Paragraph 2 of Order 586-E as
requested by applicant.

There is little likelihood that
waste will result if the present
perfs. blow the vertical limits of
the Justice Gas Pool remain open.
There is the possibility of losing
the rate well if the plug-back is
carried out.

There is also a possibility, though
remote, that these lower perfs. are
making gas.

Sam Miller
Staff Member
Examiner

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF)
HAMILTON DOME OIL COMPANY, LTD. FOR)
AN EXCEPTION TO ORDER NO. R-586-E,)
AND FOR AN ORDER AUTHORIZING APPLI-)
CANT TO CONTINUE TO PRODUCE ITS)
WESTATES CARLSON FEDERAL "A" WELL NO.)
1 IN THE NW $\frac{1}{4}$ SE $\frac{1}{4}$ OF SECTION 25, TOWN-)
SHIP 25 SOUTH, RANGE 37 EAST, IN THE)
JUSTIS GAS POOL, LEA COUNTY, NEW)
MEXICO, FROM AN INTERVAL BELOW THE)
VERTICAL LIMITS OF THE JUSTIS GAS)
POOL AS DEFINED IN COMMISSION ORDER)
NO. R-586-E.)

No. 728

APPLICATION

Comes now Applicant, Hamilton Dome Oil Company, Ltd., by its attorneys, seeking an exception to Order No. R-586-E of the Commission, and for its reasons therefore states:

1. Applicant is the operator of Westates Carlson Federal "A" Well No. 1 in the NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 25, Township 25 South, Range 37 East, in the Justis Gas Pool, Lea County, New Mexico.
2. By its Order No. R-586-E dated February 12, 1959, the Commission redefined the vertical limits of the Justis Gas Pool and ordered the Westates Carlson Federal "A" Well No. 1 plugged back to a point within the vertical limits defined in said order, within 90 days after the effective date of the Order.
3. The Westates Carlson Federal "A" Well No. 1 referred to, in the opinion of operator, is completed wholly within the Justis Gas Pool and is not producing gas or liquid hydrocarbons from any other pool.
4. Due to the nature of the completion of the said well, any attempt to plug back the well as required by Commission Order No. R-586-E could result in waste.

WHEREFORE, Applicant requests the Commission to set this matter down for hearing before an examiner at the earliest possible date; to publish notice as required by law, and after hearing, to

Don't know
11-11-59

enter its order granting applicant an exception from Order No. R-586-E by permitting it to continue to produce its Westates Carlson Federal "A" Well No. 1 from perforations below the vertical limits established by Order No. R-586-E.

Respectfully submitted,

HAMILTON DOME OIL COMPANY, LTD.

By: *Rich M Campbell*
Campbell & Russell
P. O. Box 721
Roswell, New Mexico

Its Attorneys

DOCKET: EXAMINER HEARING APRIL 22, 1959

Oil Conservation Commission, Mabry Hall, State Capitol, 9 a.m., Santa Fe

The following cases will be heard before DANIEL S. NUTTER, Examiner:

- CASE 728: Application of Hamilton Dome Oil Company, Ltd., for an exception to Order R-586-E. Applicant, in the above-styled cause, seeks an order excepting its Westates Carlson Federal "A" Well No. 1 located in the NW/4 SE/4 of Section 25, Township 25 South, Range 37 East, Lea County, New Mexico, from the requirement in Order R-586-E that wells not within the defined vertical limits of the Justis Gas Pool, as established in said order, be plugged back so as to be open only within the said vertical limits.
- CASE 1641: Application of W. R. Weaver for the promulgation of special rules and regulations governing the Angels Peak-Gallup Oil Pool. Applicant, in the above-styled cause, seeks an order promulgating special rules and regulations governing the drilling, spacing, and production of oil and gas wells in the Angels Peak-Gallup Oil Pool in San Juan County, New Mexico.
- CASE 1642: Application of Delhi-Taylor Oil Corporation for an amendment to Orders R-60, R-1169, and R-1170. Applicant, in the above-styled cause, seeks an order amending Orders R-60, R-1169, and R-1170 to change the dedicated acreage in three non-standard gas proration units in Sections 30 and 31, Township 29 North, Range 8 West, San Juan County, New Mexico, based on a resurvey; two of said units are in the Aztec-Pictured Cliffs Pool and one is in the Blanco Mesaverde Pool.
- CASE 1643: Application of El Paso Natural Gas Company for an unorthodox oil well location. Applicant, in the above-styled cause, seeks an order authorizing an unorthodox oil well location in the Angels Peak-Gallup Oil Pool for its Huerfano Unit Well No. 107 located 1460 feet from the North line and 1180 feet from the West line of Section 35, Township 27 North, Range 10 West, San Juan County, New Mexico.
- CASE 1644: Application of J. E. Bedingfield for an exception to Rule 104 (c) of the Commission Rules and Regulations. Applicant, in the above-styled cause, seeks an exception to Rule 104 (c) so that he may re-enter a well located 1980 feet from the South and East lines of Section 32, Township 17 South, Range 28 East, Eddy County, New Mexico, said well being located closer than 660 feet to a producing well.
- CASE 1645: Application of Sinclair Oil & Gas Company for permission to commingle the production from three separate pools. Applicant, in the above-styled cause, seeks an order authorizing it to commingle the production from the Monument-McKee Gas Pool, the Eunice-Monument Pool, and the Monument-Blaine Pool on its J. R. Phillips "A" Lease consisting of the SW/4 of Section 31, Township 19 South, Range 37 East, Lea County, New Mexico.

- CASE 1646: Application of Amerada Petroleum Corporation for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Ida Wimberley Well No. 9 located 1650 feet from the North line and 990 feet from the West line of Section 25, Township 25 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Blinebry formation adjacent to the Justis-Blinebry Oil Pool and the production of oil from the Justis-Drinkard Pool through parallel strings of 2-3/8 inch tubing.
- CASE 1647: Application of Olsen Oils, Inc., for a non-standard gas proration unit and an unorthodox gas well location. Applicant, in the above-styled cause, seeks an order establishing an 80-acre non-standard gas proration unit in the Jalmat Gas Pool consisting of the W/2 NW/4 of Section 28, Township 26 South, Range 37 East, Lea County, New Mexico, said unit to be dedicated to applicant's Gregory "B" Well No. 1 located 2310 feet from the North line and 990 feet from the West line of said Section 28. Applicant further seeks approval for the unorthodox location of said gas well.
- CASE 1648: Application of W. R. Weaver for permission to commingle the production from two separate pools. Applicant, in the above-styled cause, seeks an order authorizing it to commingle the production from the Angels Peak-Dakota Gas Pool and the Angels Peak-Gallup Oil Pool on its McAdams Lease comprising Section 34, Township 27 North, Range 10 West, San Juan County, New Mexico.
- CASE 1649: Application of Amerada Petroleum Corporation for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its L. W. Ward Well No. 2 located 1983 feet from the South line and 520 feet from the East line of Section 11, Township 13 South, Range 38 East, Lea County, New Mexico, in such a manner as to permit the production of oil from an undesignated Mississippian pool and the production of oil from the Bronco-Devonian Pool through parallel strings of 2-1/16 inch tubing.
- CASE 1650: Application of Pan American Petroleum Corporation for approval of a unit agreement. Applicant, in the above-styled cause, seeks an order approving its Martin Ranch Unit Agreement embracing approximately 35,193 acres of federal, state, and patented acreage in Townships 3 and 4 South, Ranges 22 and 23 East, Chaves and DeBaca Counties, New Mexico.

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE 728

TRANSCRIPT OF HEARING

APRIL 22, 1959

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE NEW MEXICO
Phone CHapel 3-6691

NEW MEXICO OIL CONSERVATION COMMISSION

Mabry Hall

Santa Fe, NEW MEXICO

REGISTER

HEARING DATE Examiner April 22, 1959 TIME: 9:00 a.m.

NAME:	REPRESENTING:	LOCATION:
R. M. Anderson	Sinclair	Midland
Geney Watson	Alcon Oil Co.	Salt
M. W. ...	" " "	Midland
Geo. H. ...	Del. hi Taylor	Fannington
James ...	Del. hi Taylor	Midland
John J. ...	Del. hi Taylor	Midland
J. E. ...	"	alb.
Burnett ...	"	✓
B. H. ...	El Paso Natural Gas	El Paso
B. M. ...	"	"
Garrett ...	"	"
R. E. ...	Del. hi Taylor	Midland
C. M. ...	Del. hi Taylor	Midland
James ...	Del. hi Taylor	Midland
W. D. ...	Del. hi Taylor	Midland
Nancy ...	Del. hi Taylor	Midland

NEW MEXICO OIL CONSERVATION COMMISSION

Mabry HallSanta Fe, NEW MEXICOREGISTERHEARING DATE Examiner April 22, 1959 TIME: 9:00 a.m.

NAME:	REPRESENTING:	LOCATION:
Jack M Campbell	Campbell + Russell	Roswell NM
Ken Turner	Harwood & Holman	Roswell
W. Mambrell	Pan American	Tammyville
John H. Livingston	Pan American	Hubbards Lake
Cory Buell	✓ ✓	FORT WORTH

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
APRIL 22, 1959

IN THE MATTER OF:

CASE 728 Application of Hamilton Dome Oil Company,
Ltd., for an exception to Order R-586-E.
Applicant, in the above styled cause, seeks
an order excepting its Westates Carlson Fed-
eral "A" Well No. 1 located in the NW/4 SE/4
of Section 25, Township 25 South, Range 37
East, Lea County, New Mexico, from the re-
quirement in Order R-586-E that wells not
within the defined vertical limits of the
Justis Gas Pool, as established in said
order, be plugged back so as to be open only
within the said vertical limits.

BEFORE:

Daniel S. Nutter, Examiner

T R A N S C R I P T O F P R O C E E D I N G S

MR. NUTTER: The next case on the docket will be Case
728.

MR. PAYNE: Case 728. Application of Hamilton Dome
Oil Company, Ltd., for an exception to Order R-586-E.

MR. CAMPBELL: Mr. Examiner, I am Jack M. Campbell,
Campbell & Russell, Roswell, New Mexico, appearing on behalf of
the applicant. We have one witness to be sworn.

(Witness sworn)

CHARLES P. MILLER,
called as a witness, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

BY MR. CAMPBELL:

Q Will you state your name, please?

A Charles P. Miller.

Q Where do you live, Mr. Miller?

A Hobbs, New Mexico.

Q Will you speak a little louder, please? What is your profession?

A Petroleum geologist, consultant.

Q Consulting petroleum geologist. How long have you been in that profession?

A Sixteen years.

Q And has all or most of this time been spent in Hobbs in the Lea County area?

A All of it has.

Q All of it. Have you testified previously before the New Mexico Oil Conservation Commission or one of its Examiners?

A On several occasions.

MR. CAMPBELL: Are the witness' professional qualifications acceptable to the Examiner?

MR. TUTTER: Yes, sir. Please proceed.

Q Mr. Miller, are you acquainted with Oil Conservation

Commission Order R-506-E dated February 12, 1959, which redefined the vertical limits of the Justis Gas Pool?

A Yes, sir.

Q Are you acquainted with the particular provision of that Order which refers to three wells, including Westates Carlson Federal "A" Well No. 1, as it was affected by the Order?

A Yes, sir.

Q And that that Order required that that well be plugged back prior to a certain date set out in the Order?

A That's right.

Q At the request of Hamilton Dome Oil Company, Ltd., the present operator of that well, did you investigate the situation with regard to the depth of the perforations of that well?

A I have, sir.

Q Had you had any previous knowledge of the drilling or completion of that particular well, Mr. Miller?

A Yes, sir, I was on the well from top to bottom.

Q You were at the well location during the entire time it was drilled and completed?

A During the time we drilled the pay section, yes, sir.

Q You were then consultant for Westates, which drilled the well, is that correct?

A Yes, sir.

Q So that you had been acquainted with this well since the time that it was drilled into the pay section?

5
A Yes, sir.

Q And you are acquainted with the mechanical nature of the completion?

A I am, sir.

Q Are you acquainted, Mr. Miller, with the application of Hamilton Dome Oil Company, Ltd., seeking an exception to the Order referred to that redefines the limits of the Pool?

A I am.

(Thereupon, Hamilton's Exhibit No. 1 was marked for identification.)

Q Mr. Miller, I refer you to what has been identified as Hamilton's Exhibit No. 1 in this case, and ask you to state what that is?

A It is a structural contour map delineated on top of the Glorieta formation as recognized at the present time. In addition, the red line shown on the map represents the cross section which has been prepared to show the type of the structure and the general similarity of the Glorieta section.

Q Was this Exhibit prepared by you, Mr. Miller?

A It was, yes, sir.

(Thereupon, Hamilton's Exhibit No. 2 was marked for identification.)

Q Now, I refer you to what has been identified as Hamilton's Exhibit No. 2, and ask you to state what that is?

A That is a correlative cross section which has been pre-

pared from electric and neutron gamma ray logs, photostatic copies of these logs.

Q Are those wells contained on your Exhibit No. 2, the wells that are identified on Exhibit No. 1, through which the red lines pass?

A It is one and the same.

Q And referring to your Exhibit No. 2, will you state to the Examiner what that reflects insofar as this matter is concerned?

A Well, it is prepared to show the attitude and the top of the Glorieta formation.

Q In that particular area?

A In that particular area, that's right.

Q Does this Exhibit include the well that was used as the principle point of determination in the prior case, which ended up in the Order redefining the limits of this Pool?

A It does.

Q Which well was that?

A Gulf McBuffington No. 3 in Section 13.

(Thereupon, Hamilton's Exhibit No. 3 was marked for identification.)

Q Now, I refer you to what has been identified as Hamilton's Exhibit No. 3, and ask you to state what that is, please.

A That is simply a photostatic copy of three logs, be-

ing the Olsen Wimberly No. 1, the Westates Carlson "A" No. 1 --

1 --

Kewance
Q And the Kequane?

Kewance
A And the Kequane, yes, Kequane Well in Section 13. It was prepared for the purpose of showing the relationship of the oil zones as developed in the Kequane to any possible oil zones that may exist under the Westates.

Kewance
Q Is the Kequane Well one of the few or only well now producing from the oil zone in the proximity of the lowest perforation of the Westates Carlson Federal Well?

A To the best of my knowledge, it is the only truly classified well; others produce gas disillate.

Q What does that reflect, that log of the Carlson -- of the Westates Well reflect as to --

A On a penetration from the top of the Glorieta to the pay zone, it shows the relative positions of the oil zone as developed in the Kequane to any possible oil zone that may exist under the Westates Carlson.

Q And what is the depth or distance between the lowest perforation of the Westates Well and the top of the oil zone in the Kequane Well as you can now determine?

A Approximately twenty feet.

Q And what is the nature of the geological site between the bottom of the perforation of your well and the top of the oil zone in the Kequane Well?

A The log in the Westates Well indicates, and we so completed the well on that premise, that there was an impervious zone just immediately underlying the bottom perforation. The drilling time which we will have an Exhibit here also reflects that characteristic, that we perforated just above an impervious zone.

(Thereupon, Hamilton's Exhibit No. 4 was marked for identification.)

Q I refer you to what has been identified as Hamilton's Exhibit No. 4 in connection with your statement concerning the drilling time, and ask you to state what that is and what it reflects.

A It is a drilling time that shows time consumed in drilling each ten feet. I have marked on the bottom of that drilling time the point of 4380, which is the bottom of my perforations. You will note at that point that the drilling time increased very decidedly, and that in itself conforms to our interpretation of the impervious breaks as shown on the electric log which we have here.

Q Based upon your experience, during the drilling of the well and completion of the well, and on your interpretation of the log and your analysis of the drilling time situation is it your opinion that there is an impervious barrier between the bottom perforation of the Westates Well and the top of the oil zone in the Hecusago Well?

A We definitely thought so at the time we completed that well. We have no reason to change our opinion now.

Q Is it your opinion, based upon your knowledge of this well and the Exhibits -- the studies you have made, and Exhibits you have prepared, that the Weststee Well is completed entirely within the zone of the Justis Gas Pool?

A Yes, sir. I don't believe that we transgressed from a gas into an oil zone in the perforation.

Q What is the distance of the lowest perforation of your well from the limits as defined in the Order, as best you can tell?

A Our bottom perforation, 4380 feet, the top of the Glorieta is at 4672, which would be approximately two hundred fifty-three feet.

Q And how far does that put you below the lower limit of the Justis Gas Pool?

A The point that was recommended and accepted in the recent Order places a maximum penetration of 240 feet, which would be put as a penetration of 13 feet in excess of that recommendation.

Q You have stated that you are intimately acquainted with the completion of this well with regard to what would be required mechanically. If you were required by the Commission's Order to plug back this well to a point within the limits as defined by the Order, what would be the problem mechanically involved?

in that operation?

A I would like to state first that inasmuch as that well has been treated, we are unable to determine how much formation outside of the pipe has been broken down. If we were forced to plug back, the only practical approach would be to set a packer retainer above the perforations and against the entire perforations and then go back and redrill and possibly acidize, wash the hole and then refrac.

Q What risks are involved in doing that with regard to the condition of the well and its productivity after such a mechanical operation takes place?

A To answer your question -- I anticipated such a question -- I pointed out first that we do not know how much the formation has been broken down behind the pipe as a result of our completion treatment. Therefore, if we were to squeeze this, we would not know how much of a wedge of cement would be left between the casing and the formation.

Q What is the distance in which you have to set your packer in this situation in relation to perforations?

A To be safe, the sure way to squeeze that would be to set up a retainer above our top perforations and squeeze the entire perforated section.

Q Is there any danger there? What happens to your packer under the circumstances?

A Under the circumstances, you would be all right if you

11
were to set a retainer in the middle of the perforation. For example, try to squeeze off just the lower ten, twelve, fifteen feet, whatever is required. Then there is a good chance that you would obtain the circulation with your cement, and that in turn would come back into the hole above your retainer -- to use a slang expression, would really "bite" you, you would get a bad fix there.

Q So that if you had to recirculate the whole thing and redrill, or if you tried to set your packer at a point above the depth where you are below the present limits, in either event, there is a serious mechanical risk of loss of the well or loss of some of its productivity, is that correct?

A It might lead to rather severe complications.

Q In your opinion, will the granting of this application, in that regard particularly, serve to promote conservation and prevent waste?

A From an economic point, which is the point we are looking at, I would say, yes, sir.

Q Is it also possible that you might actually lose ultimately some of the gas from that well if you cemented off some of the formation?

A There is a good possibility.

Q Do you believe, with your knowledge of that well and that area, if this application is granted, that the correlative rights of those who operate wells in the vicinity of your well will

not be adversely affected?

A I can't see that they will be.

Q Did you prepare all these Exhibits?

A Yes, sir.

MR. CAMPBELL: I would like to offer Hamilton's Exhibits 1, 2, 3 and 4 in evidence.

MR. NUTTER: Without objection, these Exhibits will be received.

(Thereupon, Hamilton's Exhibits Nos. 1, 2, 3 and 4 were received in evidence.)

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

MR. NUTTER: Any questions of the witness?

MR. PAYNE: Yes, sir.

CROSS EXAMINATION

BY MR. PAYNE:

Q Mr. Miller, if I understand your testimony correctly, it is your opinion that the well in connection is completed within the vertical limits of the Justis Gas Pool, is that right?

A Yes, sir, in that particular area I think that is right.

Q Now, as to what you are seeking here today, you don't particularly care if the vertical limits of the Justis Gas Pool are redefined as long as your well is allowed to continue to produce, is that right?

A I would answer -- in answer to your question, I would

say that the vertical limits should at least include that impervious zone which I have indicated by drilling time and that log.

Q Let me phrase it this way. Would you have any objection to having this well classified as undesignated Glorieta gas well?

A I cannot see where we would be hurt by that.

MR. PAYNE: Thank you. That's all.

MR. NUTTER: Any further questions?

MR. FISCHER: I have one.

MR..CAMPBELL: May I inquire as a matter of interest what the effect of that would be insofar as this is a prorated gas pool we are referring to here? If that is an undesignated gas well in the Glorieta Pool, I presume it would not be prorated?

MR. PAYNE: That is correct.

MR. CAMPBELL: We stand by and answer to those circumstances.

MR. PAYNE: Your application was phrased in such a way that it requested an exception to Order 586-E and not to amend 586-E, to change the vertical limits.

MR. CAMPBELL: That is correct. We assumed that since we did not appear in the hearing and did not seek a rehearing, that the absence of a new application -- complete new application for redefinition of the pool, that the exception procedure was the only appropriate one.

MR. PAYNE: That seemed to be the most appropriate --

MR. CAMPBELL: Yes.

QUESTIONS BY MR. NUTTER:

Q Mr. Miller, what are the vertical limits of the Justis Gas Pool as defined by Order 586-E?

A The penetration zone, or 286 feet below the top of the Glorieta is the base of your zone.

Q How does 586 actually define the vertical limits? Is it from the top of the Glorieta pay to a point 240 feet below the top, or is it to a point -- the log of a certain well?

A If I may just go back into Order 586-E, it is a little bit confusing, if you will permit me to say so. It refers to Paragraph 1 in the Order.

"It is therefore ordered that the vertical limits of the Justis Gas Pool be the same or are hereby defined as follows: From the top of the Glorieta formation, found at a depth of 4599 feet, with an elevation of 3,080 feet, giving a subsea datum of minus 1519 in the Gulf Oil Corporation McBuffington No. 8," -- the location will be skipped -- "to a point 40 feet above the marker and encountered at 4879 feet, subsea datum of minus 1799 in said McBuffington Well No. 8."

Q Now, do you have a log -- excuse me, Mr. Miller -- on this Exhibit, does the log of that McBuffington No. 8 Well appear here?

A Yes, sir, it is on that cross section here.

Q Where is that log on this Exhibit, sir?

A It is right here.

Q And the point that the top of the Glorieta was defined?

A I should like to point out a technicality there. I think perhaps it is a typographical error. The elevation as used in the hearing, I believe here, is 3,050 feet. Actually, the elevation, the permanent data from which this log is run, that log, 3051, was 11 feet above ground Kelly bush and that discrepancy appears in the cross section. In other words, the red which I have shown there as being the top of the Glorieta should conform, but it lacks 11 feet of conforming due to the discrepancy of elevation used.

Q Now, the top of the Glorieta as defined by that Order is the point indicated on -- by the red line on the McBuffington?

A On reading the transcription this morning, I was a little bit confused. In the transcription it referred to the top of the Glorieta, depth of 4610, yet in the hearing, the top of the Glorieta is given at a depth of 4599.

Q That 11-foot interval from the ground level to the Kelly bush would probably explain that, wouldn't it?

A Well, the difference on this, in the hearing, are we using ground level elevation all the way through, or are you using Kelly bush and Derrick floor elevation all the way through? We should be consistent whichever we are using.

Well, if ground level is used, the top of the Glorieta

would not be at 4610, it would have to be -- it would have to be considerably higher than that.

MR. PAYNE: How much higher. 11 feet?

A It would have to be at least 11 feet high.

Q (By Mr. Nutter) Where do you pick the top of the Glorieta on this?

A 4599.

Q 4599?

A And I have checked with some of my friends in the Gulf Corporation. They pick it at 4595.

Q After reading the transcription and reading the Order entered in that case, can you tell from this log the point that the bottom of the Justis Gas Pool is supposed to be defined as?

A The purple line right here penetrates 25 feet below, the purple line shown on the cross section is the penetration.

Q The bottom is supposedly defined by a certain kick on this electric log?

A Yes, sir.

Q Now, where is that identical kick on the log of Westates Carlson Federal 1 "A"?

A It would be 40 feet below the 240-foot penetration; would be this zone, 1 23 would be this zone right here.

Q And what would be the actual depth in that well?

A It would be, let's see -- well, you want it on an

actual depth or subsea time?

Q The depth of this well, Mr. Miller.

A All right. You are perforated at 4878, and 247-foot penetration lies above, 9 feet above that, so if you are going to go 40 feet below that, we would go 31 feet below this 81, about 4910.

MR. CAMPBELL: About 4910.

Q (By Mr. Tutter) In other words, the vertical limits of the Pool as defined in that Order in this particular well lie at 4910?

A That would be right, yes, sir.

Q And your lowermost perforation 48, correct?

A 48, yes.

Q So, actually, you are requesting an exception for perforations of some 30 feet that are below the vertical limits of the Pool?

A Yes, sir, that's right.

Q Now, do you believe that the well is actually producing in that 30-foot interval?

A Our drilling time and our samples and the log, to me, indicated that it is.

Q Mr. Miller, what is the next lower pool underlying this well, if any?

A The next productive zone below that that we recognize is what we call the Blinberry.

Q And what is the approximate depth of that producing interval?

A We didn't go deep enough to catch it on that log, and my cross sections are not prepared to show the Blinebry on any of these wells, but normally your Blinebry would lie approximately 400 feet, I would say. That's just a very approximate figure.

Q As a general rule, then, it would be some 400 hundred feet before you encountered any productive zone, is that right?

A We certainly hope we do not have communication that far.

MR. NUTTER: Any questions of the witness?

Q (By Mr. Nutter) Mr. Miller, as I understand it, you are seeking a permanent exception to this well. It is not a matter of just deferring any plugging operations here until the next time you would be working over the well or anything like that?

A No. We feel that the evidence justifies that it be declared permanent.

Q What is the top of the perforations in this well, 4320?

A Yes, sir. They are written on there.

Q So, actually, the bulk of your perforations are within the vertical limits, aren't they, Mr. Miller?

A The bulk of them are, yes, sir, but I wish to point out again, as I have spoken before, it would be impractical to try and squeeze off the bottom ten feet of that perforation.

mechanically, it would lead to a lot of difficulties.

QUESTIONS BY MR. FISCHER:

Q Mr. Miller, if you don't hydromine it, wouldn't that solve a lot of your problems?

A Mr. Fischer, I am afraid you would have to do more than dumping.

Q You could dump it and try a broadhead squeeze and keep you from having to put a packer in there.

A That would be pretty much of an experiment that I don't think I would be willing to undertake.

MR. FISCHER: Thank you.

QUESTIONS BY MR. TUTTER:

Q Mr. Miller, what do you mean it would be risky to try to squeeze off the bottom ten feet? You have 30 feet that are outside the Pool, haven't you?

A I would be necessary to put a retainer above the point you want to squeeze, and inasmuch as the lower part of the perforations have been treated, undoubtedly it is broken down; set a retainer and try to squeeze underneath. There is no reason in the world why part of the squeeze wouldn't come up through the hole and flow over the hole into your retainer and possibly, to use that slang expression I used before, "bite" you, and you would be caught with your tubing and everything else disconnected.

Q You reel, in other words, if you attempted to squeeze

the lower portion, you would have cement coming into the upper perforations as well as the lower ones?

A Yes, and hit your tubing.

Q And if you had this cement coming back up in the hole, it would consequently --

A Be in trouble.

Q -- "bite" you?

A That's right.

MR. NUTTER: Are there any further questions of Mr. Miller?

MR. PAYNE: Yes, I still haven't gotten this footage thing.

QUESTIONS BY MR. PAYNE:

Q I think you originally testified that only 13 feet were completed below the vertical limits as defined in Order 568-E instead of 30. I thought it was 13.

A Well, that's a misunderstanding. If there is 30 feet now, you can look at the cross section here, and the maximum depth of 240 feet penetration from the top of the Glorieta leaves approximately between 3 and 17 feet of perforations open below the Order as set out by the Commission.

Q I see. Now, you are fairly certain, are you, that there is some production from those -- that interval below the bottom limits as defined in Order 568-E? What I am getting at is, is it your opinion that all of the production from this well

comes from within the vertical limits of the Justis Gas Pool as defined in 586-K?

A No, I don't believe that.

Q You feel that some production is below the vertical limits from those 8, 10 or 13 feet?

A In my opinion, the burden of proof lies on the man who thinks it is not, rather than on the man that is trying to prove that it is.

MR. PAYNE: I see. Thank you.

MR. NUTTER: Any further questions? Mr. Miller may be excused.

(Witness excused)

MR. CAMPBELL: That's all the witnesses we have, Mr. Examiner.

MR. NUTTER: Does anyone have anything further they wish to offer in Case 723?

MR. WHITWORTH: Garrett Whitworth, El Paso Natural Gas Company. El Paso concurs in the application of Hamilton Dome Oil Company.

MR. NUTTER: Thank you. There is nothing further. We will take the case under advisement, and take next Case 1642.

STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

I, J. A. Teujillo, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in Stenotype and reduced to typewritten transcript by me, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this, the 29th day of April, 1959, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Joseph A. Teujillo
 NOTARY PUBLIC

My Commission Expires:

October 5, 1960

I do hereby certify that the foregoing is a complete record of the proceedings on the Examiner's report : No. 728, heard by me on 4-22, 1959.

David H. Smith, Examiner
 New Mexico Oil Conservation Commission

Casa No.

728

Application, Transcript,
Small Exhibits, Etc.

CASE 728: Hearing January 14, 1959
Application of El Paso Nat. Gas to extend
the vertical limits of Justis Gas pool.

El Paso Natural Gas Company

El Paso, Texas

November 28, 1958

Ry

[Signature]

Mr. A. L. Porter, Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Dear Mr. Porter:

I have enclosed original and two copies of El Paso's application for the extension of the vertical limits of the Justis Gas Pool, Lea County, New Mexico. This replaces El Paso's Case No. 728 which was dismissed at the November regular hearing.

We request that this application be set for hearing as soon as possible.

Very truly yours,

Garrett C. Whitworth
Garrett C. Whitworth
Attorney

GCW:hsw

Encl.

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date Feb 2, 1959

CASE NO. 738

HEARING DATE 1-14-59 9am
SF Commission

My recommendations for an order in the above numbered case(s) are as follows:

Enter an order amending paragraph (3) of Order No. R-586 to redefine the vertical limits of the Justis Gas Pool.

The present limits of the pool as defined in said para (3) are as follows:

"From the top of the glorieta formation to a point 200 feet immediately below the glorieta datum."

The new vertical limits, as proposed by El Paso ~~with gas company~~, are as follows:

~~From the top of the glorieta formation, found~~
at a depth of 4579 feet (Elev. 3080, Sussea datum -1519) in the Gulf Oil Corporation McBruffington Well No. 8, located ~~1980 feet from~~ 330 feet from the South line and 1980 feet from the West line of Section 13, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico, to a point 40 feet above the marker encountered at 4879 feet (Sussea datum -1799) in the aforesaid Gulf McBruffington Well No. 8.


Staff Member

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 728

TRANSCRIPT OF HEARING

January 14, 1959

DEARNLEY, MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
Phone CHapel 3-6691

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

Application of El Paso Natural Gas Company
for an order revising and amending Order
No. R-586. Applicant, in the above-styled
cause, seeks an order amending Order No.
R-586 to extend the vertical limits of the
Justis Gas Pool in Lea County, New Mexico.

CASE NO.

728

BEFORE:

John Burroughs
Murray Morgan
A. L. Porter

T R A N S C R I P T O F P R O C E E D I N G S

MR. PORTER: We will take up next Case 728.

MR. PAYNE: Case 728. Application of El Paso Natural
Gas Company for an order revising and amending Order No. R-586.

MR. SETH: For the record, Garrett Whitworth and Oliver
Seth representing El Paso Natural Gas Company. We have one
witness, Charles Hollenshead, to be sworn.

(Witness sworn.)

CHARLES T. HOLLENSHEAD

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

DIRECT EXAMINATION

BY: MR. WHITWORTH:

Q State your full name, please.

MR. PORTER: Mr. Whitworth, let me ask for other appearances in this case at this time.

MR. KELLAHIN: Jason Kellahin of Kellahin and Fox, Santa Fe, New Mexico, representing Amerada Petroleum Corporation. I have associated with me Mr. H. D. Bushnell, a member of the Oklahoma bar, to handle the case for Amerada, with the permission of the Commission.

MR. PORTER: Any other appearances?

MR. KASTLER: Bill Kastler, representing Gulf Oil Corporation. I am not here to present any testimony, but just to concur.

Q (By Mr. Whitworth) State your full name, please.

A Charles T. Hollenshead.

Q Mr. Hollenshead, by whom and in what capacity are you employed?

A I am employed by the El Paso Natural Gas Company in the capacity of area geologist for southeastern New Mexico.

Q Have you previously qualified as an expert witness before this Commission?

A No.

Q Will you give a brief summary of your scholastic training and professional experience?

A I graduated from Texas Western College in June 1950 with a bachelor of science degree in geology. In May of this year

I will have been employed as a geologist for seven years by El Paso Natural Gas Company. Previous to employment by El Paso, I was employed by Baroid Well Logging Service as a logging engineer.

Q In your work with El Paso Natural Gas Company, have you had occasion to study and review the vertical limits of the Justis Gas Pool?

A Yes, sir.

Q And in this study, have you had occasion to study the zones immediately underlying the Justis Gas Pool in Lea County, New Mexico?

A Yes.

MR. WHITWORTH: We ask that the qualifications of the witness be accepted.

MR. PORTER: They are accepted.

Q (By Mr. Whitworth) Will you state to the Commission what the present vertical limits of the present gas --

A The present vertical limits, as defined by the Commission, extend from the Glorieta datum, or top of Glorieta, down to a distance of two hundred feet below the Glorieta.

Q Does this form a common reservoir of gas in the Justis Gas Pool?

A Yes.

Q Have you made studies indicating that there should be more interval included in the Justis Gas Pool than is presently defined?

A Yes, sir.

Q What interval do you propose as the vertical limits of the Justis Gas Pool?

A We propose that the vertical limits of the Justis Gas Pool be tied to correlative markers. The type well that has been chosen for the Justis Gas Pool is Gulf Oil Corporation's Number 8 McBuffington, located 1980 feet from the west line, 330 feet from the south line, in Section 13, Township 25 South, Range 37 East, in Lea County, New Mexico. The proposed top of the Justis Gas Zone, or the top of the Glorieta, lies at a depth of 4610 feet minus 1519 subsea in this well. The proposed base of the Justis Gas Pool lies forty feet above a correlative marker found at a depth of 4890 feet minus 1799 subsea in said well.

I believe that at this time that it would be wise to point out that the proposed vertical limits of the Justis Gas Zone vary from 221 feet below the top of the Glorieta in the Kewanie Number 5 Carlson "B" 13 Well on the east flank of the structure, to 280 feet in the Olsen Number 1 Wimberly on the west flank of the structure.

Q Now, with this extension that you have proposed to the vertical limits, would this gas pool still be a common reservoir of gas, in your opinion?

A Yes.

Q Have you prepared an exhibit showing all the wells in the Justis Gas Pool?

A Yes.

Q What is this exhibit?

A The first exhibit is El Paso Natural Gas Company's Exhibit No. 1. It is a structural map of the Justis Gas Pool.

Q How was this exhibit prepared?

A This exhibit was prepared by using correlative information from all available electric gamma ray logs in the pool.

Q And what does it show?

A The exhibit shows a structural interpretation of the Justis Gas Pool, and is drawn from Glorieta formation tops. It shows the locations of sections A, A prime; B, B prime; C, C prime, and D, D prime. In addition, it shows the location of the wells that are presently producing from the Justis Gas Pool. It also shows the location of oil wells that are presently producing below the vertical limits of the Justis Gas Pool and the formation from which they are producing, and in addition, it shows the location of four Justis Wells that are presently producing below the presently defined vertical limits.

Q Now, have you prepared exhibits of these cross sections that you mentioned?

A Yes.

Q What is the next exhibit?

A This next exhibit is El Paso Natural Gas Company's Exhibit No. 2, and it is a, generally, a north-south cross section through the Justis Gas Pool extending from Gulf Oil Corporation's

7
No. 6 "N" Ramsey Well on the south flank of the structure generally northward. It would be right here, generally northward, to Cities Service Oil Company's Number 1 "B" Hodges Well on the north flank of the structure.

Q How was this exhibit prepared?

A This exhibit was prepared by using standard correlating procedures with gamma ray neutron and electric logs, and by using available well completion information.

Q What does the exhibit show?

A This exhibit shows the correlation of the various formation tops. It shows the relative structural position of the wells used in the cross section. It shows Gulf Oil Corporation's Number 8 McBuffington Well, which is a typed log, and on the log it shows the Glorieta datum, or top of the Glorieta, which is shown at a depth of 4610 feet, minus 1519 subsea. It shows the correlative marker to which the base, the proposed base of the Justis Gas Pool is tied, and it shows the proposed base of the Justis Gas Pool being 40 feet above the correlative marker. In addition, it shows well completion information.

Q Now, you were pointing at the Gulf Oil Corporation's McBuffington Number 8 well, were you not?

A Right.

Q That's the well you mentioned previously?

A Yes. The cross section also shows a general north-south correlation of these various zones mentioned.

Q Would you point out to the Commission the marker in that well that you mentioned previously?

A The marker to which the proposed base of the Justis Gas Pool is tied, is located right here (indicating) at a depth of 4890 feet, a minus 1799 subsea.

Q Do you have an exhibit of another cross section?

A Yes. This exhibit is El Paso Natural Gas Company's Exhibit No. 3, and is a general east-west cross section of the Justis Gas Pool extending from Anderson Pritchard Oil Company's Number 5 Harrison Well on the east flank of the pool, generally northeastward, to El Paso Natural Gas Company's Number 1 Greenburg Well, and the farthest flank here, right here (indicating), from here to here on Exhibit 1.

Q How was this exhibit prepared?

A This exhibit was prepared by using standard correlating procedures, with gamma ray neutron and electric logs, and by using available well completion information.

Q What does this exhibit show?

A This exhibit shows the correlation of the various formation tops, shows the relative structural position of the wells on the exhibit, shows Gulf Oil Corporation's Number 8 McBuffington Well, and shows the Glorieta datum, and the proposed top of the Justis Gas Pool being at a depth of 4610 feet, a minus 1519 subsea. It shows the correlative marker at a depth of 4910 feet -- at 4890 feet minus 1799 subsea, to which the proposed base of the Justis

Gas Zone is tied. This proposed base being 40 feet above the correlative marker. In addition, it shows well completion information.

Q Do you have another exhibit of a cross section?

A Yes. This exhibit is El Paso Natural Gas Company's Exhibit No. 4. It is a, generally, a north-south porosity cross section extending from Gulf Oil Corporation's Number 6 Ramsey "B" Well on the south flank of the structure, generally northward, to the Kewanee Oil Company's Number 5 Carlson "N" 13 Well in the northeast flank of the structure, extending from here to here (indicating) on Exhibit No. 1.

Q How was this exhibit prepared?

A This exhibit was prepared by using standard correlating procedures, with micrologs where available, and in cases where they weren't available, whatever was available that would show porosity.

Q And what is the purpose of this exhibit?

A The purpose of this exhibit is -- This exhibit shows the proposed vertical limits of the Justis Gas Pool. It shows -- Shown on the exhibit are the porosity zones within the proposed vertical limits, represented by the green on the exhibit. Porosity zones below the proposed limits are also shown in green. It shows the relationship of these porosity zones within the proposed vertical limits, and it shows how these porosity zones are tied in with each other. These are shown by the dark blue lines. And, in addition, it shows an impervious zone, as shown by this solid

red zone right here, shows an impervious red zone, which we believe separates the upper gas producing zone from the lower porosity zones, this zone right here from which the Kewanee Number 5 Carlson "N" 13 is presently producing oil.

Q Now, the base of the vertical limits that you have proposed is in that impervious zone that you mentioned?

A Yes, and all the wells drilled in the Justis Gas Pool. The proposed base of the Justis Gas Pool lies within this impervious barrier.

Q Is that impervious barrier common to all wells in the Justis Gas Pool?

A Yes.

Q And the impervious barrier is shown on that exhibit by the solid red, is that true?

A That is true. It is shown by the solid red zone across here (indicating). The proposed base being shown by this dark blue line within the impervious zone.

Q Now, based on this exhibit and those that you have shown previously, what conclusions do you have with respect to the vertical limits of the Justis Gas Pool?

A Well, that all of the porosity zones above the proposed base of the Justis Gas Pool form a common reservoir, and we believe that this reservoir is separated from any lower porosity or lower reservoir by this impervious barrier.

Q What is your next exhibit?

A This next exhibit is El Paso Natural Gas Company's Exhibit Number 5.

MR. PORTER: Can I ask you a question right at this point? What did you say the nature of the impervious barrier was?

A Beg pardon.

MR. PORTER: What did you say the nature of the impervious barrier was?

A It is a tight zone that covers the entire extent of the Justis Gas Pool. We believe it is an impervious barrier separating the upper gas producing zone, or lower producing zone.

MR. MORGAN: What is it, a tight shale?

A No, a tight dolomite. It is a tight dolomite.

MR. PORTER: Thank you.

Q (By Mr. Whitworth) Now, what is this exhibit?

A This is El Paso Natural Gas Company's Exhibit No. 5, and it is a, generally, a north-south cross section extending from Gulf Oil Corporation's Number 6 Ramsey "B" on the south flank of the structure, generally northward, to Kewanee Oil Company's Number 1 Carlson "B". It is the same location as here (indicating) on Exhibit No. 1.

Q What is the purpose of this exhibit?

A The principal purpose of this exhibit is to show the relationship of the proposed vertical limits of the Justis Gas Pool to the Blincoxy oil production that exists below it.

Q And would you say that any part of the proposed vertical

Limits of the Justis Gas Pool is included in the Blinbry production?

A No, it is not.

Q What are your red lines on that exhibit?

A The red lines are the proposed vertical limits of the Justis Gas Pool.

Q What are the blue lines?

A The upper blue line is the correlative marker to which the proposed base of the Justis Gas Pool is tied. The red, this lower limit, this lower suggested lower limit, being 40 feet below the marker in all cases, in all wells.

Q What is your next exhibit?

A Our next exhibit is El Paso Natural Gas Company's Exhibit No. 6, and it is a data sheet showing well completion information on the Justis Gas Wells. In addition, it shows the distance from the Glorieta datum to the base of the perforations on Justis Gas Wells, shows the distance from the Glorieta datum to the proposed base of the Justis Gas Pool. It shows drillstem tests in the Justis Gas Zone of the Justis Gas wells. It shows cumulative distillate and gas production figures to October the 1st, 1958.

Q How many gas wells are in the Justis Gas Pool?

A There are 11.

Q How many of these 11 wells have perforations to depths below the present vertical limits of the Justis Gas Pool?

A Four wells.

Q Four wells?

A Four wells.

Q Which four are these?

A First is El Paso Natural Gas Company's Number 1 "B" Carlson Federal, located in Section 25, Township 25 South, Range 37 East. This well has perforations, two hundred -- a distance of 207 feet below the Glorieta datum, or top of the Glorieta.

The next well is Gulf Oil Corporation's Number 3 McBuffington, located in Section 13, Township 25 South, Range 37 East, and this well has perforations 220 feet below the top of the Glorieta.

The next well is Gulf Oil Corporation's Number 3 "F" Ramsey, and this well had perforations to a distance of 253 feet below the top of the Glorieta, and the last well is Westates Number 1 "A" Carlson Federal, located in Section 25, Township 25 South, Range 37 East, and this well had perforations to a distance of 256 feet below the top of the Glorieta.

Q Could any of these four wells have perforations to depths below the proposed vertical limits of the Justis Gas Pool?

A Yes. Two of these wells will have short, perforations for a short distance below the proposed vertical limits.

Q Which are the two that you mentioned?

A The Gulf Oil Corporation's Number 3 "F" Ramsey has perforations 16 feet below the proposed vertical limits of the Justis Gas Pool.

Westates Number 1 "A" Carlson Federal has perforations 18

feet below the proposed vertical limits of the Justis Gas Pool.

Q In these two wells, is there any significant gas production?

A We believe there is no significant gas production from these perforations below the proposed vertical limits of the Justis Gas Pool.

Q Should the proposed vertical limits of the Justis Gas Pool be adopted, what do you suggest the Commission do with respect to these two wells that you mentioned?

A Well, sir, that, of course, would be up to the Commission. The Commission would either have to make exceptions to these two wells, or require that they be plugged back to the vertical limits of the Justis Gas Pool.

Q Do you have any particular reason for using Gulf Oil Corporation's Number 8 McBuffington Well?

A Yes, sir.

Q What is that reason?

A This well lies in both cross section AA prime and in cross section BE prime, and it lies near the center of the Justis Gas Pool.

Q I think you covered this before, but I want to make sure. In your opinion, would all of the zones included in the proposed vertical limits of the Justis Gas Pool form a common reservoir of gas?

A Yes, sir.

Q Could you tell why this is true?

A Well, sir, we believe that all of the porosity within the proposed vertical limits forms a common reservoir separated by lower reservoirs or lower zones of porosity by this impervious barrier in which our proposed lower limit lies.

Q Is that communication between these zones within the proposed vertical limits?

A Yes. If by no other reason, by perforations in the bore hole.

Q Why didn't you include a greater interval in your proposed vertical limits of the Justis Gas Pool?

A Well, we didn't include a greater interval because we feel all of the porosity zones within the proposed vertical limits form a common reservoir that is separated from any lower porosity reservoir by that impermeable barrier.

Q To your knowledge, would the granting of this application prevent waste?

A Yes.

Q And would the granting of this application, in your opinion, violate correlative rights?

A No.

Q Do you have anything further that you would like to add to your testimony?

A No, except, I believe, that the top of said gas pool should be the top of the Glorieta formation, which is found at a

depth of 4610 feet, minus 1519 feet subsea in Gulf Oil Corporation's Number 8 McBuffington Well located 1980 feet from the West line and 330 Feet from the South line of Section 13, Township 25 South, Range 37 East, Lea County, New Mexico. The base of said gas pool should be 40 feet above the marker, above the correlative marker in said well, found at 4890 feet, minus 1799 feet subsea.

Q Were El Paso Exhibits 1 through 6 prepared under your supervision?

A Yes.

MR. WHITWORTH: We ask these exhibits be admitted.

MR. PORTER: Any objection to the admission of El Paso's Exhibits 1 through 6? They will be admitted.

Any questions of the witness?

MR. BUSHNELL: Yes.

MR. PORTER: Mr. Bushnell.

CROSS EXAMINATION

BY: MR. BUSHNELL:

Q Mr. Hollenshead, is that correct?

A Yes, sir.

Q I understand now that you had picked your recommended base of the Justis Gas Pool from the Gulf McBuffington Number 8 Well at the interval 40 feet above the 4890 foot dip, is that correct?

A That's correct, 40 feet above the 4890 foot dip.

Q Now, you said, in preparing these exhibits, that you

1799
3080

4879
4890

had used both gamma ray and electric logs, is that right?

A Where available, yes, sir.

Q Were gamma ray logs always available on all of these wells?

A No, sir, not in all cases.

Q But you had electric logs in all instances?

A No, sir, not in all instances.

Q You had electric logs in all instances, except in those wells where you may have had gamma ray logs, is that correct?

A We had some type of log on all of the wells, yes, sir.

Q What I am getting at is, the pick that you have used in this Gulf McBuffington Number 8 well is such that it shows up in the electric log in contrast with the gamma ray --

A It is better developed on the gamma ray curving than anything else. It is not an excellent correlative marker on the electric log, it is a better marker on the gamma ray. However, it can be correlated on the electric logs, I believe.

Q Referring to your Gulf McBuffington Number 8 log on any one of your exhibits, can you pick the marker from an electric log? By the way, is it an electric log or gamma ray log that is used on this particular well?

A Gamma ray log.

Q I would like to ask if the marker at 4890 feet on Gulf's McBuffington Number 8 is a marker that could be more readily fixed on electric logs than other wells where a gamma ray log is not

available?

A What was the depth again, sir?

Q 4970 feet in the Gulf McBuffington Number 8.

A There is a well developed marker in the Gulf Number 8 Well on the gamma ray and neutron log. I do not have an electric log with me on the well.

Q Well, would you look at other wells there that are electric logs -- Excuse me, look at other logs which are electric logs and see if this marker is well shown.

A What was that depth again, sir?

Q 4970 feet, as picked in the McBuffington Number 8.

A Well, on this electric log cross section, our Exhibit No. 4, which is an electric cross section, we do not have the Gulf Number 8 McBuffington Well. I have several other Gulf wells. Gulf Number 3 --

Q Do you find --

A --and Number 5 McBuffington, which are fairly close to the Number 8.

Q All right. And what is that exhibit number, No. 4?

A Number 5.

Q Number 5?

A Yes.

Q And all of those logs shown there are electric logs?

A No, sir, where available there are electric logs. Those were wells where electric logs were not available.

Q Referring only to the electric logs as shown on this Exhibit No. 5, do you find a correlative point that is well shown at that interval, correlative to the 4970 feet interval in the Gulf McBuffington?

A There is a marker at approximately that zone, yes, sir, fairly well developed.

Q Fairly well developed?

A It is fairly well developed, yes, sir.

Q Would you say it is better developed than those electric logs at the point that you have recommended?

A I believe that on the electric log it is possibly a little better developed than the proposed, than our marker to which the proposed base is tied.

Q Would you be able to say whether this marker that we have now referred to as being better shown would, if that marker were used as a recommended base of the Justis Pool in this order, would there not be, would there be need for any exceptions, well exceptions?

A Well, sir, we believe that all of the porosity zones within our proposed limit form a reservoir that is separated from any lower porosity zones or lower reservoir zones.

Q Is there any porosity below this dense zone that is not in the Glorieta?

A Yes, sir. Number 5 Carlson "B" 13 is producing oil from a zone, from a porosity zone immediately below where we are

suggesting the base of the Justis Gas Pool.

Q Is that in the Glorieta?

A That is in the Glorieta, probably in the base of the Glorieta. I am not familiar enough with exactly where the base of the Glorieta is. I don't know where the base of the Glorieta is.

Q Let me ask you another question. This is a repeat because I didn't get my answer. If you used the 4970 foot correlative pick we've talked about here --

A Yes, sir.

Q --would there not be less need for exceptions of this marker, the wells in this pool?

A Well, sir, I think we would be including more than one reservoir, we would be including a gas reservoir and possibly an oil reservoir, and possibly another gas reservoir, if gas exists below the oil reservoir.

Q Well, you are still not answering my question.

MR. PORTER: Mr. Bushnell, are you now -- the question was if they used--what was it, 4790?

MR. BUSHNELL: 4970 feet.

MR. PORTER: 4970 instead of 4890. I got a figure of 4890.

MR. BUSHNELL: He is using 40 feet above the correlative point.

Q (By Mr. Bushnell) As I understand your testimony, how many wells would have to be excepted, did you recommend?

A There would be two wells.

Q I thought you said four wells.

A No, there are four wells that are presently perforated below the present limits of the Justis Gas Pool. Of these four, two would still be below the recommended vertical limits.

MR. BUSHNELL: That is all.

MR. PORTER: Technically speaking, they got four wild-cat wells in the Justis Gas Pool. Let's take a five minute recess. Let's make it a very short one.

(Recess)

MR. PORTER: The hearing will come to order, please. Mr. Bushnell, I believe had concluded with his questions. Anyone else have a question of Mr. Hollenshead?

MR. NUTTER: I have some.

MR. PORTER: Mr. Nutter.

QUESTIONS BY MR. NUTTER:

Q Mr. Hollenshead, I believe you stated there were four wells shown on Exhibit 1 which were presently perforated below the vertical limits as now defined by the Commission, is that correct?

A That's correct, yes, sir.

Q Are those four wells shown on any of your cross sections?

A I don't believe all four of them are shown on any one cross section.

Q Are all four shown on one or more of the cross sections?

however?

A Let me check here and see. The El Paso Natural Gas Company's Number 1 "B" Carlson Federal is shown on the north-south cross section, or cross section AA prime.

MR. UTZ: What Exhibit is that?

A That is Exhibit No. 2.

Q (By Mr. Nutter) All right. The --

A The Gulf Number 3 Ramsey is shown also on Exhibit No. 2. Let me check the exhibit to make sure here.

Q All right, sir.

A I believe those are the only two wells shown on the cross section.

Q So we don't have cross sections or logs on the other two wells which are perforated below the present limits?

A No, sir. I have information on the data sheet explaining how far below the Glorieta they are perforated.

Q Mr. Hollenshead, referring to your Exhibit No. 4, I wonder if you would go through this just a little bit more for me. What are the blue lines on that exhibit, what do they represent?

A The green lines represent porosity as indicated by the micrologs, or gamma ray neutron, whichever is used in the section. The blue lines are suggested interconnections of these various porosity zones indicating that all of the porosity zones within the proposed vertical limits form a common reservoir.

Q And what do the two red lines at the bottom of the

exhibit represent?

A The middle red line, or the first red line, the first red line under the solid dense zone is the location of the correlative marker to which the proposed base of the Justis Gas Zone is tied. In other words, this proposed base, or this purple line, is 40 feet above the correlative marker in all wells.

Q In other words, this upper red line is the line that indicates the point at 4890 in that Gulf Number 8 McBuffington Well?

A That is correct.

Q And the lower red line?

A The lower red line is just another correlative zone that I have put on the sections.

Q That is another marker that is readily picked up on all of the logs that you have available?

A That is correct, yes, sir.

Q If the lower limits of the pool were tied to this lower correlative marker, would it be possible that some of these exceptions which would otherwise be necessary, could be eliminated?

A Well, sir, we feel that if we did put that lower, that marker, that we would have two distinct reservoirs within the vertical limits of the Justis Gas Pool.

Q So your prime objective has been to try to define the lower gas limits of the Justis within the impermeable zone that you have picked up in all of the wells, is that correct?

A Our purpose is to have these proposed lower vertical

limits fall within this impervious zone every where.

Q Is there any indication in any well, whether by the logs of the well or by any cores that are available in the area, that there is any impermeability or any fractures existing in this impermeable barrier?

A It is impermeable.

Q Is there any indication that there may be impermeability or fractures in this impervious zone?

A Yes, sir, there is a slight indication in the southeastern part of Section 24 of some very thin stringers of porosity being present within the impervious zone. However, we feel that this porosity is negligible. We feel it is not well developed enough for either gas or oil to be produced from --

Q Is there any pressure information available to compare the zones below the impermeable zone and above the impermeable barrier?

A I don't have any of that information, no, sir.

Q Do you think that that impermeable barrier is sufficient that we could take a well, such as the (half) Ramsey Number 6, which I believe has some perforations below, or some porosity below, as well as above the impermeable zone, and authorize a dual completion for a well there?

A You mean a dual completion of --

Q Yes, with a packer set in the impermeable zone?

A I believe that that lower porosity zone from which the

Kewanie is presently producing oil, I believe the operator should have an opportunity to attempt to produce oil from the zone.

Q In this Gulf Ramsey Number 6, which is the westernmost well on your Exhibit No. 4, there is quite a bit of porosity above as well as below the impermeable barrier. Would you feel that a dual completion would be justifiable in a well such as this?

A Yes, I believe so.

Q You don't happen to know where that well is perforated, do you, Mr. Hollenshead?

A Is it the Gulf Number 6 Ramsey? The Gulf Number 6 Ramsey "N" located in Section 36, Township 25 South, Range 37 East?

Q Yes, sir.

A This well has five and a half inch casing set at 5797 feet. It is completed as an oil well from the Blinebry.

Q So this well is not completed in the Justis Pool at all?

A No.

Q Are there any other wells within the Glorieta formation, as you know the Glorieta formation, which are producing oil with exception of the Kewanie well?

A There is some distillate produced along with the gas in the Justis Gas Pool, yes, sir.

Q Mr. Hollenshead, I believe you stated that you didn't know the exact lower limits of the Glorieta formation?

A That's correct, I've talked with geologists from several

companies operating in the field, and each company seems to pick the base of the Glorieta at a different place, so there is a lot of confusion as to where the base of the Glorieta is. I haven't been able to pick it.

Q What would be your suggestion, Mr. Hollenshead, as to what should be done with the two wells which remain outside the vertical limits of the pool that you have proposed as the vertical limits?

A Well, sir, as I pointed out previously, these wells are perforated 16 and 18 feet below the proposed vertical limits, and we feel that the production that is coming from these perforations is negligible. However, that would be up to the Commission. If the Commission feels that these two wells should be excepted, fine, if they feel that the wells should be plugged back to the proposed base of the Justis Gas Pool, I am sure that El Paso would be willing to go along with whatever the Commission decides.

Q How many wells, to your knowledge, are producing from below the heavy red band that you have indicated on Exhibit 4?

A Below this zone (indicating)?

Q Yes, sir.

A You mean in the field?

Q Yes, sir.

A Well, there are numerous wells producing from the Blinbry from the Kewanie.

Q I mean from within the Glorieta formation?

A Those two wells mentioned.

MR. PORTER: Are you talking about the 11 wells?

MR. NUTTER: I am talking about Justis Gas Pool wells which would be producing below the impermeable barrier.

A None would be producing below the impermeable barrier. There are two that would be producing below the proposed vertical limits of the Justis Gas Pool.

Q This Kewanie well would be producing from below --

A Yes, but that is not a Justis Gas well, that is a wildcat.

Q Do you think that we should create a Justis Gas Pool for this zone?

A Well, sir, the Commission has set the Kewanie Number 5, Carlson "N" Number 5 as a wildcat. It is producing from a zone that is equivalent to this porosity here.

MR. PORTER: And it is an oil well?

A It is an oil well.

MR. PORTER: Thank you.

MR. NUTTER: That's all.

MR. PORTER: Mr. Starnes.

QUESTIONS BY MR. STARNES:

Q Mr. Hollenshead, I wonder if you would look on Exhibit 4 and above the solid red band there, starting on Kewanie Oil Company's Number 1 Carlson, at about 2840, I notice in there, on

the log a similarity between the log in that zone and the red zone. Also, in the next well, the Gulf Oil Company's Number 5 McBuffington, at about 4800, I notice a similar zone, and at about 4850 another zone similar to your red band.

A You are looking at Exhibit No. 4?

Q Yes, sir.

A All right, sir.

Q Are those on the logs similar?

A I don't see any similarity at all, as far as porosity is concerned. Now, this is a porosity cross section, these are micrologs, and of course, they are going to vary. The micrologs are going to vary according to how the porosity varies from well to well.

Q Well, you know the nature of the formation from 4800, this is in the Gulf Number 5 McBuffington, from 4830 to 4850.

A You mean from a lithologic standpoint?

Q Yes, sir.

A It is dolomite, possibly contains dense stringers of sandstone.

Q Is that essentially the red zone?

A Yes, sir.

Q That is what I was getting at. It would appear that a zone of the same character as your red zone goes across at least to the Amerada Number 4 Winberly at a point approximately 30 feet above your indicated red zone, separating the proposed

extension of the vertical limits from the present vertical limits.

A Well, sir, I worked with all the gamma ray logs and the electric logs that are available on the field, and I couldn't find any correlative marker in that part of the section that would carry for any areal extent of the field.

Q However, on the wells that I have just mentioned, would that be a reasonable assumption?

A I am not sure I quite understand. Now, you are looking at Exhibit Number 4, and it looks like porosity is varying quite erratically in this zone that you are talking about from well to well.

Q Well, let's say the zone runs from 30 to 40 feet above, starting at 30 to 40 feet above.

A 40 to 30 feet above?

Q Above the top of the indicated red zone.

A Well now, let me point out one thing, the indicated red zone, the top and the base are not correlative markers, they were established on the basis of porosity above and below. In other words, there is an impervious barrier extending from right here to right here (indicating) based on this microlog. There is an impervious barrier from here to here based on this log, and so on down the line. They are not correlative markers. This down here, which is the correlative marker to which the proposed base of the Justis Gas Pool is tied, and the upper, or the top of the Glorieta, which would be the upper proposed limit of the Justis

Gas Pool, those are the only two correlative markers, other than this extra one down here that has been shown.

Q I realize that, I am not trying to indicate the same depth from the top of each well or from sea level in each of these, I was just trying to indicate a relative depth from the top of the indicated red zone.

That's all the questions I have.

MR. PORTER: Anyone else have a question of the witness? The witness may be excused.

(Witness excused.)

MR. WHITWORTH: That's all we have.

MR. PORTER: Anyone else have any more evidence to offer in this case? Any statements to make, any comments?

MR. KASTLER: Bill Kastler, representing Gulf Oil Corporation. Our gas reservoir engineer has studied this application, and the proposed exhibits, and Gulf Oil Corporation concurs with El Paso's application.

MR. BUSHNELL: If the Commission please, we would like to recommend that the Commission consider the 4970 feet pick, as shown in the Gulf McBuffington Number 8 as the, and I would like to recommend that this be used, as the correlative marker to the base of the Justis Gas Pool, since this marker, as shown on the electric logs, is the better marker suggested in this case.

MR. PORTER: Anyone else have a statement?

The Commission will take the case under advisement.

STATE OF NEW MEXICO }
COUNTY OF BERNALILLO }

SS

I, J. A. Trujillo, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in Stenotype and reduced to typewritten transcript, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal, this the 16th day of January, 1959, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Joseph A. Trujillo
NOTARY PUBLIC

My Commission Expires:

October 5, 1960

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. 728
Order No. R-586-E

APPLICATION OF EL PASO NATURAL GAS
COMPANY FOR AN ORDER REVISING AND
AMENDING ORDER NO. R-586 TO PROVIDE
FOR AN EXTENSION OF THE VERTICAL
LIMITS OF THE JUSTIS GAS POOL IN LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on January 14, 1959, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 19th day of February, 1959, the Commission, a quorum being present, having considered the application and the evidence adduced 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 present vertical limits of the Justis Gas Pool, as established by Order No. R-586, extend from the top of the Glorieta formation to a point 200 feet immediately below the Glorieta datum.

(3) That the applicant, El Paso Natural Gas Company, proposes that the vertical limits of the Justis Gas Pool be redefined as follows:

From the top of the Glorieta formation, found at a depth of 4599 feet (Elevation 3080, Subsea datum -1519) in the Gulf Oil Corporation McBuffington Well No. 8, located 330 feet from the South line and 1980 feet from the West line of Section 13, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico, to a point 40 feet above the marker encountered at 4879 feet (Subsea datum -1799) in said McBuffington Well No. 8.

(4) That the evidence presented in this case established that the vertical limits should be redefined as proposed by the applicant.

(5) That the perforations in the two following-described wells in the Justis Gas Pool extend below the proposed vertical limits, and therefore these wells should be plugged back so that they will be open only within the established vertical limits of said pool:

Gulf Oil Corporation Ramsey "F" Well No. 3,
NW/4 NE/4 of Section 36

Westates Carlson Federal "A" Well No. 1,
NW/4 SE/4 of Section 25

both in Township 25 South, Range 37 East,
NMPM, Lea County, New Mexico.

IT IS THEREFORE ORDERED:

(1) That the vertical limits of the Justis Gas Pool be and the same are hereby redefined as follows:

From the top of the Glorieta formation, found at a depth of 4599 feet (Elevation 3080, Subsea datum -1519) in the Gulf Oil Corporation McBuffington Well No. 8, located 330 feet from the South line and 1980 feet from the West line of Section 13, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico, to a point 40 feet above the marker encountered at 4879 feet (Subsea datum -1799) in said McBuffington Well No. 8.

(2) That the following-described wells shall, within 90 days after the effective date of this order, be plugged back so that they are open only within the established vertical limits of the Justis Gas Pool:

Gulf Oil Corporation Ramsey "F" Well No. 3,
NW/4 NE/4 of Section 36.

Westates Carlson Federal "A" Well No. 1,
NW/4 SE/4 of Section 25

both in Township 25 South, Range 37 East,
NMPM, Lea County, New Mexico.

-3-
Case No. 728
Order No. R-586-E

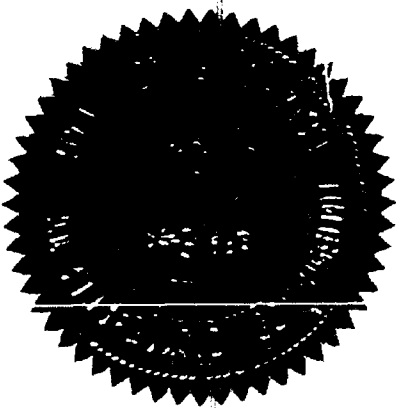
DONE at Santa Fe, New Mexico, on the day and year herein-
above designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

John Burroughs
JOHN BURROUGHS, Chairman

Murray E. Morgan
MURRAY E. MORGAN, Member

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



ir/

BEFORE THE
OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF EL PASO NATURAL GAS COMPANY
FOR AN ORDER REVISING AND AMENDING
ORDER NO. R-586 TO PROVIDE FOR AN
EXTENSION OF THE VERTICAL LIMITS OF
THE JUSTIS GAS POOL, LEA COUNTY,
NEW MEXICO

CASE NO. _____

A P P L I C A T I O N

TO THE HONORABLE COMMISSION:

COMES NOW El Paso Natural Gas Company, hereinafter
referred to as "Applicant," and alleges and represents:

I

Applicant is a Delaware corporation with a permit to
do business in the State of New Mexico.

II

Heretofore, this Commission by Order No. R-586 has
established the vertical limits of the Justis Gas Pool as
extending from the top of the Glorieta Formation to a point 200
feet immediately below the Glorieta datum.

III

Since the Justis Gas Pool was established, several
wells have been drilled within the horizontal limits of said gas
pool which are producing from and below the vertical limits of
said gas pool although they are bottomed in the Glorieta Formation.

IV

All presently known sands productive of gas from the
Glorieta Formation within the horizontal limits of the Justis
Gas Pool should be within the vertical limits of said pool. Said
Order should be amended to extend the vertical limits of the Justis
Gas Pool as follows:

The top of said gas pool should be the top of the Glorieta
Formation which is found at 4,610 feet (-1,510 feet subsea)

in Gulf Oil Corporation's No. 8 Learey McBuffington Well located 1,980 feet from the West line and 330 feet from the South line of Section 13, Township 25 South, Range 37 East, Lea County, New Mexico. The base of said gas pool should be 40 feet above the marker in said well found at 4,890 feet (-1,799 feet subsea).

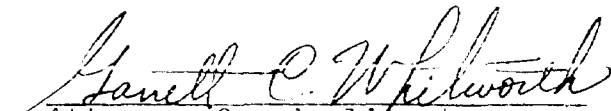
V

The granting of this application will prevent waste and will not prejudice or violate correlative rights.

VI

This Commission has jurisdiction to hear and determine this cause and the granting of such proposed amendment should be authorized.

WHEREFORE, Applicant respectfully requests that this matter be set for hearing as prescribed by law and that upon such notice and hearing, the Commission issue its order extending the vertical limits of the Justis Gas Pool, Lea County, New Mexico, as proposed in this application, and such other and further relief to which Applicant may show itself justly entitled and the Commission deems advisable and appropriate in the premises.


Attorney for Applicant

OIL CONSERVATION COMMISSION

P. O. BOX 871
SANTA FE, NEW MEXICO

February 13, 1959

C

O

P

Y

Mr. Oliver Seth
Seth, Montgomery, Federici & Andrews
P.O. Box 828
Santa Fe, New Mexico

Dear Mr. Seth:

On behalf of your client, El Paso Natural Gas Company, we enclose two copies of Order R-586-E issued February 12, 1959, by the Oil Conservation Commission in Case 728, which was heard at the regular hearing on January 14th.

Very truly yours,

A. L. Porter, Jr.
Secretary - Director

bp
Encls.

*Order also sent to
Mr. William J. Miller
Bill Foster, July
2-13-59*

DOCKET: REGULAR HEARING JANUARY 14, 1959

Oil Conservation Commission 9 a.m., Mabry Hall, State Capitol, Santa Fe

- ALLOWABLE:**
- (1) Consideration of the oil allowable for February 1959
 - (2) Consideration of the allowable production of gas for February 1959 from six prorated pools in Lea County, New Mexico; also consideration of the allowable production of gas from seven prorated pools in San Juan and Rio Arriba Counties, New Mexico, for February 1959.

NEW CASES

CASE 728

Application of El Paso Natural Gas Company for an order revising and amending Order No. R-586. Applicant, in the above-styled cause, seeks an order amending Order No. R-586 to extend the vertical limits of the Justis Gas Pool in Lea County, New Mexico.

CASE 1308:

In the matter of the hearing required to be held by Order R-1069-B to permit all interested parties to appear and show cause why the Special Rules and Regulations set forth in Order R-1069-B should be continued beyond February 28, 1959.

CASE 1557:

Application of Cities Service Oil Company for a hearing de novo before the Commission on its application for a dual completion. Applicant, in the above-styled cause, seeks an order authorizing it to dually complete its State "P" No. 3 Well located 990 feet from the South and West lines of Section 32, Township 22 South, Range 38 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Blinebry Oil Pool and from an undesignated Glorieta oil pool through parallel strings of tubing.

CASE 1581:

Southeastern New Mexico nomenclature case calling for an order for the creation of new pools and the extension of existing pools in Eddy and Lea Counties, New Mexico:

(a) Create a new oil pool for San Andres production, designated as the South Loco Hills-San Andres Pool, and described as:

TOWNSHIP 18 SOUTH, RANGE 30 EAST, NMPM
Section 32, NE/4

(b) Create a new oil pool for Seven Rivers production, designated as the West Pearl-Seven Rivers Pool, and described as:

TOWNSHIP 19 SOUTH, RANGE 34 EAST, NMPM
Section 25, SE/4

(c) Create a new oil pool for Queen production, designated as the North Red Lake-Queen Pool, and described as:

TOWNSHIP 16 SOUTH, RANGE 28 EAST, NMPM
Section 34: NE/4

- (d) Create a new oil pool for Delaware production, designated as the Shugart Delaware Pool, and described as:

TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM
Section 22: SW/4

- (e) Extend the Allison-Pennsylvanian Pool to include:

TOWNSHIP 9 SOUTH, RANGE 36 EAST, NMPM
Section 10: NE/4

- (f) Extend the South Carter-San Andres Pool to include:

TOWNSHIP 18 SOUTH, RANGE 39 EAST, NMPM
Section 7: NE/4

- (g) Extend the Dos Hermanos Yates-Seven Rivers Pool to include:

TOWNSHIP 20 SOUTH, RANGE 30 EAST, NMPM
Section 28: N/2 SE/4

- (h) Extend the High Lonesome Pool to include:

TOWNSHIP 16 SOUTH, RANGE 29 EAST, NMPM
Section 12: SW/4
Section 13: NW/4

- (i) Extend the Justis-Blinebry Pool to include:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
Section 24: E/2
Section 25: E/2
Section 36: E/2 & SW/4

- (j) Extend the Justis-McKee Pool to include:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
Section 24: SE/4

- (k) Extend the Loco Hills Pool to include:

TOWNSHIP 18 SOUTH, RANGE 30 EAST, NMPM
Section 8: S/2

- (l) Extend the Maljamar Pool to include:

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM
Section 18: SW/4

(m) Extend the vertical limits of the East Millman-Queen Pool in Eddy County, New Mexico, to include therein the Grayburg formation.

(n) Extend the East Millman Queen-Grayburg Pool to include:

TOWNSHIP 19 SOUTH, RANGE 28 EAST, NMPM

Section 13: N/2 & SW/4

Section 22: N/2

Section 23: NW/4

(o) Extend the Pearl Queen Pool to include:

TOWNSHIP 19 SOUTH, RANGE 35 EAST, NMPM

Section 21: N/2 SE/4 & SW/4 SE/4

Section 33: NW/4

(p) Extend the Ranger Lake Pennsylvanian Pool to include:

TOWNSHIP 12 SOUTH, RANGE 34 EAST, NMPM

Section 24: SW/4

(q) Extend the Shugart Siluro Devonian Gas Pool to include:

TOWNSHIP 18 SOUTH, RANGE 31 EAST, NMPM

Section 27: NE/4

(r) Extend the Skaggs-Glorieta Pool to include:

TOWNSHIP 20 SOUTH, RANGE 37 EAST, NMPM

Section 12: NW/4

(s) Extend the South Vacuum-Bone Springs Pool to include:

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 22: S/2

Section 27: W/2

CASE 1582: Northwestern New Mexico nomenclature case calling for an order for the extension of existing pools in San Juan and Rio Arriba Counties, New Mexico:

(a) Extend the South Blanco-Pictured Cliffs Pool to include:

TOWNSHIP 25 NORTH, RANGE 3 WEST, NMPM

Section 27: W/2

TOWNSHIP 26 NORTH, RANGE 5 WEST, NMPM

Section 13: NE/4

(b) Extend the Tapacito-Pictured Cliffs Pool to include:

TOWNSHIP 26 NORTH, RANGE 3 WEST, NMPM

Section 21: SW/4

- (c) Extend the Blanco-Mesaverde Pool to include:

TOWNSHIP 27 NORTH, RANGE 8 WEST, NMPM
Section 30: E/2

TOWNSHIP 29 NORTH, RANGE 4 WEST, NMPM
Section 8: All

TOWNSHIP 30 NORTH, RANGE 4 WEST, NMPM
Section 31: All

- (d) Extend the South Los Pinos-Dakota Pool to include:

TOWNSHIP 31 NORTH, RANGE 7 WEST, NMPM
Section 22: N/2
Section 34: N/2

- (e) Extend the Verde-Gallup Oil Pool to include:

TOWNSHIP 31 NORTH, RANGE 14 WEST, NMPM
Section 8: SW/4 SE/4
Section 17: SW/4

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. 728
Order No. R-586

THE APPLICATION OF THE OIL
CONSERVATION COMMISSION UPON
ITS OWN MOTION FOR AN ORDER
AMENDING, REVISING OR ABROGATING
EXISTING RULES AND REGULATIONS OF
THE OIL CONSERVATION COMMISSION,
AND/OR PROMULGATING RULES AND
REGULATIONS, RELATING TO GAS POOL
DELINEATION, GAS PRORATION, AND
OTHER RELATED MATTERS, AFFECTING
OR CONCERNING THE TUBB, BYERS-
QUEEN, AND JUSTIS GAS POOLS, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a. m. on June 16, 1954, July 15, 1954, August 18, 1954 and September 16, 1954, at Santa Fe, New Mexico, and on October 20, 1954 at Hobbs, New Mexico, before the Oil Conservation Commission, hereinafter referred to as the "Commission".

NOW, on this 11th, day of April, 1955, the Commission, a quorum being present, having considered the records, evidence and testimony adduced and being fully advised in the premises,

FINDS:

(1) That due notice of the time and place of hearing and the purpose thereof having been given as required by law, the Commission has jurisdiction of this case and the subject matter thereof.

(2) That under date of January 1, 1950, the Commission issued its Order No. 850 creating the Justis Gas Pool, and that said Order No. 850 defined the horizontal and vertical limits thereof. That on February 17, 1953, the Commission issued Order No. R-264 creating the Tubb and Byers-Queen Gas Pools, and defining the horizontal and vertical limits of said gas pools. That by Order No. R-264 and subsequent orders the Commission extended the horizontal and vertical limits of the Justis Gas Pool. That by Order R-407 the vertical limits of the Tubb Gas Pool were extended.

(3) That under date of September 28, 1953, the Commission issued its Orders Nos. R-373, R-375, and R-376 and under date of November 10, 1953, the Commission issued its Orders Nos. R-373-A, R-375-A and R-376-A, providing rules, definitions and procedures to be followed in prorating gas in the Tubb, Justis, and Byers-Queen gas pools, respectively; and by subsequent orders issued after due notice and hearing, the Commission allocated production of gas in said pools commencing January 1, 1954.

(4) That the Tubb, Byers-Queen and Justis Gas Pools are separate gas reservoirs and should be defined vertically and horizontally as set forth in this order.

(5) That the producing capacity of the gas wells in the Tubb, Byers-Queen and Justis Gas Pools is greater than the market demand for gas from each of such pools.

(6) That in order to prevent waste it is necessary to allocate and prorate the gas production among the gas wells in the Tubb, Byers-Queen, and Justis Gas Pools in accordance with provisions of this order.

(7) That the protection and proper recognition of correlative rights as such rights are defined by Section 26 (h) Chapter 168, New Mexico Session Laws of 1949, require that the gas production from the Tubb, Byers-Queen and Justis Gas Pools be prorated, in accordance with the terms and provisions of this order.

(8) That the Rules and Regulations hereinafter set forth in this order are in all respects in the interests of conservation and provide for the allocation of the allowable production among the gas wells in the Tubb, Byers-Queen and Justis Gas Pools upon a reasonable basis and give appropriate recognition to correlative rights.

(9) That no evidence was presented to justify a change in the size of the standard gas well unit in the Tubb, Byers-Queen, or Justis Gas Pools from 160-acres.

(10) That in order to prevent waste and protect correlative rights, the special rules contained in this order should be adopted to govern the production from wells completed or recompleted in such a manner that the bore hole of the well is open in more than one common source of supply.

(11) That in order to prevent waste a "no-flare" rule should be adopted to prohibit the flaring, venting, or wasting of natural gas or any other type of gas in any of the gas pools referred to and affected by this order.

IT IS THEREFORE ORDERED:

(1) That the Tubb Gas Pool heretofore created, shall have vertical limits which extend from a point 100 feet above the "Tubb Marker" to a point 225 feet below the "Tubb Marker" as said marker is designated in Order R-464. The horizontal limits of the Tubb Gas Pool shall be the area as described in Exhibit "A", attached hereto and made a part hereof.

(2) That the Byers-Queen Gas Pool, heretofore created, shall have vertical limits which include all of the Queen formation. The horizontal limits of the Byers-Queen Gas Pool shall be the area as described in Exhibit "B", attached hereto and made a part hereof.

(3) That the Justis Gas Pool, heretofore created, shall have vertical limits which extend from the top of the Glorieta formation to a point 200 feet immediately below the Glorieta datum. The horizontal limits of the Justis Gas Pool shall be the area as described in Exhibit "C", attached hereto and made a part hereof.

(4) That special pool rules applicable to the Tubb Gas Pool be, and the same hereby are promulgated as follows:

**SPECIAL RULES AND REGULATIONS
FOR THE TUBB GAS POOL**

Well Spacing and Acreage Requirements for Drilling Tracts.

RULE 1. Any well drilled a distance of one mile or more outside the boundary of the Tubb Gas Pool shall be classified as a wildcat well. Any well drilled less than one mile outside the boundary of the Tubb Gas Pool shall be spaced, drilled, operated and prorated in accordance with the regulations in effect in the Tubb Gas Pool.

RULE 2. Each well drilled or recompleted within the Tubb Gas Pool on a standard proration unit after the effective date of this rule shall be drilled not closer than 660 feet to any boundary line of the tract nor closer than 330 feet to a quarter-quarter section line or subdivision inner boundary line. Any well drilled to and producing from the Tubb Gas Pool prior to the effective date of this order at a location conforming to the spacing requirements effective at the time said well was drilled shall be considered to be located in conformance with this rule.

RULE 3. The Secretary-Director of the Commission shall have authority to grant exception to the requirements of Rule 2 without notice and hearing where a verified application therefor has been filed in due form and the necessity for the unorthodox location is based on topographical conditions or is occasioned by the recompletion of a well previously drilled to another horizon.

Applicants shall furnish all operators within a 1980-foot radius of the subject well a copy of the application to the Commission, and applicant shall include with his application a list of names and addresses of all operators within such radius, together with a stipulation that proper notice has been given said operators at the addresses given. The Secretary-Director of the Commission shall wait at least 20 days before approving any such unorthodox location, and shall approve such unorthodox location only in the absence of objection of any offset operators. In the event an operator objects to the unorthodox location the Commission shall consider the matter only after proper notice and hearing.

RULE 4. The provisions of Statewide Rule 104, Paragraph (k), shall not apply to the Tubb Gas Pool located in Lea County, New Mexico.

GAS PRORATION

RULE 5. (a) The acreage allocated to a gas well for proration purposes shall be known as the gas proration unit for that well. For the purpose of gas allocation in the Tubb Gas Pool, a standard proration unit shall consist of between 158 and 162 contiguous surface acres substantially in the form of a square which shall be a legal subdivision (quarter-section) of the U. S. Public Land Surveys with a well located at least 660 feet from the nearest property lines;

(b) The allowable production from any non-standard gas proration unit as compared with the allowable production therefrom if such tract were a standard unit shall be in the ratio of the area of such non-standard proration unit expressed in acres to the area of 160 acres. Any gas proration unit containing between 158 and 162 acres shall be considered to contain 160 acres for the purpose of computing allowables.

(c) A non-standard gas proration unit of less than 160 acres may be formed after notice and hearing by the Commission, or by administrative approval under the provisions of Paragraph (d) of this Rule. Non-standard gas proration units of more than 160 acres may be formed only after notice and hearing by the Commission.

(d) The Secretary-Director of the Commission shall have authority to grant an exception to Rule 5 (a) without Notice and Hearing where a verified application has been filed in due form and where the following facts exist and the following provisions are complied with;

1. The non-standard gas proration unit consists of contiguous quarter-quarter sections and/or lots.

2. The non-standard gas proration unit lies wholly within a single governmental section.

3. The entire non-standard gas proration unit may reasonably be presumed to be productive of gas from the Tubb Gas Pool.

4. The length or width of the non-standard gas proration unit does not exceed 2640 feet.

5. The applicant presents written consent in the form of waivers from (a) all operators owning interests in the quarter section in which any part of the non-standard gas proration unit is situated and which acreage is not included in said non-standard gas proration unit, and (b) all operators owning interests within 1500 feet of the well to which such gas proration unit is proposed to be allocated.

-5-

Case No. 728

Order No. R-586

6. In lieu of sub-paragraph 5 of this rule, the applicant may furnish proof of the fact that said offset operators were notified by registered mail of his intent to form such non-standard gas proration unit. The Secretary-Director of the Commission may approve the application if, after a period of 30 days following the mailing of said notice, no operator has made objection to formation of such non-standard gas proration unit.

RULE 6. (a) The Commission after notice and hearing, shall consider the nominations of gas purchasers from the Tubb Gas Pool and other relevant data and shall fix the allowable production of the Tubb Gas Pool.

RULE 7. At least 30 days prior to the beginning of each gas proration period the Commission shall hold a hearing after due notice has been given. The Commission shall cause to be submitted by each gas purchaser its "Preliminary Nominations" of the amount of gas which each in good faith actually desires to purchase within the ensuing proration period, by months, from the Tubb Gas Pool. The Commission shall consider the "Preliminary Nominations" of purchasers, actual production, and such other factors as may be deemed applicable in determining the amount of gas that may be produced without waste within the ensuing proration period. "Preliminary Nominations" shall be submitted on a form prescribed by the Commission.

RULE 8. In the event a gas purchaser's market shall have increased or decreased, he may file with the Commission prior to the 10th day of the month a "supplemental" nomination, showing the amount of gas he actually in good faith desires to purchase during the ensuing proration month from the Tubb Gas Pool. The Commission shall hold a public hearing between the 13th and 20th days of each month to determine the reasonable market demand for gas for the ensuing proration month, and shall issue a proration schedule setting out the amount of gas which each well may produce during the ensuing proration month.

"Supplemental Nominations" shall be submitted on a form prescribed by the Commission.

Included in the monthly proration schedule shall be:

- (a) A summary of the total pool allocation for that month showing nominations, and adjustments made for underage or overage applied from a previous month,
- (b) A tabulation of the net allowable, and production for the second preceding month together with a cumulative overage or underage computation,
- (c) A tabulation of the current and net allowables for the preceding month,

- (d) A tabulation of current monthly allowables for the ensuing proration month,
- (e) A tabulation of the acreage assigned each well together with a tabulation of the acreage factor assigned each well. For the purpose of allocation a proration unit of 160 acres shall be assigned an acreage factor of 1.00; a proration unit of 80 acres a factor of 0.50, etc.

The allowable assigned to any well capable of producing its normal gas allowable in the Tubb Gas Pool shall be the same proportion of the total remaining allowable allocated to said pool after deducting allowables of marginal wells that the number of acres contained in the gas proration unit for that well bears to the acreage contained in all gas proration units assigned to non-marginal wells in the Tubb Gas Pool.

The Commission shall include in the proration schedule the gas wells in the Tubb Gas Pool delivering to a gas transportation facility, or lease gathering system, and shall include in the proration schedule of the Tubb Gas Pool any well which it finds is being unreasonably discriminated against through denial of access to a gas transportation facility, which is reasonably capable of handling the type of gas produced by such well. The total allowable to be allocated to the pool each month shall be equal to the sum of the preliminary or supplemental nominations (whichever is applicable), together with any adjustment which the Commission deems advisable.

If during a proration month the acreage assigned a well is increased by Commission order or as otherwise provided in this order the increased allowable assigned the gas proration unit for the well shall be effective on the first day of the month following approval of such increase by the Commission.

BALANCING OF PRODUCTION

RULE 9. Underproduction: The dates 7:00 a.m., January 1, and 7:00 a.m., July 1, shall be known as balancing dates and the periods of time bounded by these dates shall be known as gas proration periods. The amount of current gas allowable remaining unproduced at the end of each proration period shall be carried forward to and may be produced during the next succeeding proration period in addition to the normal gas allowable for such succeeding period; but whatever amount thereof is not made up within the first succeeding proration period shall be cancelled.

If it appears that such continued underproduction has resulted from inability of the well to produce its allowable, it may be classified as a marginal well and its allowable reduced to the well's ability to produce.

If at the end of a proration period a marginal well has produced more than the total allowable assigned a non-marginal unit of corresponding size, the marginal

-7-

Case No. 728
Order No. R-586

well shall be reclassified as a non-marginal well and its allowable adjusted accordingly.

If during a proration period a marginal well is reworked or recompleted in such a manner that its productive capacity is increased to the extent that it should be reclassified as a non-marginal well, the reclassification shall be effective on the first day of the proration month following the date of recompletion.

The Proration Manager may reclassify a well at any time if production data or deliverability tests reflect the need for such a reclassification.

RULE 10. Overproduction: A well which has produced a greater amount of gas than was allowed during a given proration period shall have its allowable for the first succeeding proration period reduced by the amount of such overproduction and such overproduction shall be made up within the first succeeding proration period. If, at any time, a well is overproduced an amount equaling six times its current monthly allowable, it shall be shut-in until it is in balance.

The Commission may allow overproduction to be made up at a lesser rate than would be the case if the well were completely shut-in upon a showing at public hearing after due notice that complete shut-in of the well would result in material damage to the well.

GRANTING OF ALLOWABLES

RULE 11. No gas well shall be given an allowable until Form C-104 and Form C-110 have been filed together with a plat showing acreage attributed to said well and the locations of all wells on the lease.

RULE 12. Allowables to newly completed gas wells shall commence on the date of connection to a gas transportation facility, as determined from an affidavit furnished to the Commission (Box 2045, Hobbs, New Mexico) by the purchaser, or the date of filing of Form C-104, Form C-110 and the plat described above, or the date of application for a non-standard gas proration unit as provided in Rule 5, whichever date is the later.

RULE 13. The monthly gas production from each well shall be metered separately and the gas production therefrom shall be reported to the Commission on Form C-115 so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the gas produced.

Each purchaser or taker of gas in the Tubb Gas Pool shall submit a report to the Commission so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was purchased or taken.

Case No. 728
Order No. R-586

Such report shall be filed on either Form C-111 or Form C-114 (whichever is applicable) with the wells being listed in approximately the same order as they are listed on the proration schedule.

Forms C-111 and C-114 referred to herein shall be submitted in duplicate, the original being sent to the Commission at Box 871, Santa Fe, New Mexico, the other copy being sent to Box 2045, Hobbs, New Mexico.

Form C-115 shall be submitted in accordance with Rule 1114 of the Commission's Rules and Regulations.

The full production of gas from each well shall be charged against the well's allowable regardless of what disposition has been made of the gas; provided, however, that gas used on the lease for consumption in lease houses, treaters, compressors, combustion engines and other similar lease equipment shall not be charged against the well's allowable; further, the production of intermediate or low-pressure gas derived from the staging of the well fluids need not be charged against the well's gas allowable, provided that said intermediate or low-pressure gas is utilized in accordance with the provisions of Order R-464.

RULE 14. The term "gas purchaser" as used in these rules, shall mean any "taker" of gas either at the wellhead or at any point on the lease where connection is made for gas transportation or utilization. It shall be the responsibility of said "taker" to submit a nomination.

RULE 15. No gas, either dry gas or casinghead gas, produced from the Tubb Gas Pool shall be flared or vented.

PROVIDED FURTHER, After the effective date of this order no well shall be completed or recompleted in such a manner that the producing zone of the Tubb Gas Pool and the producing zone of any other common source of supply are both open in the same well bore unless specifically authorized by order of the Commission after notice and hearing. Dual completions may be effected in accordance with the provisions of Rule 112-A of the Commission's Rules and Regulations.

Any well presently completed in such a manner that the well bore is open to more than one common source of supply shall be assigned to the applicable pool by the Commission staff. Any operator of any well completed in such a manner shall submit to the Commission office at Hobbs, New Mexico, all pertinent well completion data on Form C-105, together with electric logs, sample logs, drill stem test records, etc. All data shall be submitted in duplicate on or before May 15, 1955. Failure of any operator to submit the required data will result in cancellation of Form C-110 and subsequent cancellation of allowables.

If the operator is not satisfied with the well's assignment he may apply for a hearing on the matter in accordance with Commission Rule 1203.

PROVIDED FURTHER, That in filing Form C-101 "Notice of Intention to Drill or Recomplete" all operators shall strictly comply with the provisions of Rule 104, paragraph (e).

PROVIDED FURTHER, That failure to comply with the provisions of this order or the rules contained herein shall result in the cancellation of allowable assigned to the affected well. No further allowable shall be assigned to the affected well until all rules and regulations are complied with. The Proration Manager shall notify the operator of the well and the purchaser in writing of the date of allowable cancellation and the reason therefor.

PROVIDED FURTHER, That special pool rules applicable to the Byers-Queen Gas Pool be, and the same hereby are promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE BYERS-QUEEN GAS POOL

Well Spacing and Acreage Requirements for Drilling Tracts.

RULE 1. Any well drilled a distance of one mile or more outside the boundary of the Byers-Queen Gas Pool shall be classified as a wildcat well. Any well drilled less than one mile outside the boundary of the Byers-Queen Gas Pool shall be spaced, drilled, operated and prorated in accordance with the regulations in effect in the Byers-Queen Gas Pool.

RULE 2. Each well drilled or recompleted within the Byers-Queen Gas Pool on a standard proration unit after the effective date of this rule shall be drilled not closer than 660 feet to any boundary line of the tract nor closer than 330 feet to a quarter-quarter section line or sub-division inner boundary line. Any well drilled to and producing from the Byers-Queen Gas Pool prior to the effective date of this order at a location conforming to the spacing requirements effective at the time said well was drilled shall be considered to be located in conformance with this rule.

RULE 3. The Secretary-Director of the Commission shall have authority to grant exception to the requirements of Rule 2 without notice and hearing where a verified application therefor has been filed in due form and the necessity for the unorthodox location is based on topographical conditions or is occasioned by the recompletion of a well previously drilled to another horizon.

Applicants shall furnish all operators within a 1980-foot radius of the subject well a copy of the application to the Commission, and applicant shall include with his application a list of names and addresses of all operators within such radius, together with a stipulation that proper notice has been given said operators at the addresses given. The Secretary-Director of the Commission shall wait at least 20 days before approving any such unorthodox location, and shall approve such unorthodox location only in the absence of objection of any offset operators. In the event an operator objects to the unorthodox location the Commission shall consider the matter only after proper notice and hearing.

RULE 4. The provisions of Statewide Rule 104, Paragraph (k), shall not apply to the Byers-Queen Gas Pool located in Lea County, New Mexico.

GAS PRORATION

RULE 5. (a) The acreage allocated to a gas well for proration purposes shall be known as the gas proration unit for that well. For the purpose of gas allocation in the Byers-Queen Gas Pool, a standard proration unit shall consist of between 158 and 162 contiguous surface acres substantially in the form of a square which shall be a legal subdivision (quarter section) of the U. S. Public Land Surveys with a well located at least 660 feet from the nearest property lines;

(b) The allowable production from any non-standard gas proration unit as compared with the allowable production therefrom if such tract were a standard unit shall be in the ratio of the area of such non-standard proration unit expressed in acres to the area of 160 acres. Any gas proration unit containing between 158 and 162 acres shall be considered to contain 160 acres for the purpose of computing allowables.

(c) A non-standard gas proration unit of less than 160 acres may be formed after notice and hearing by the Commission, or by administrative approval under the provisions of Paragraph (b) of this Rule. Non-standard gas proration units of more than 160 acres may be formed only after notice and hearing by the Commission.

(d) The Secretary-Director of the Commission shall have authority to grant an exception to Rule 5 (a) without Notice and Hearing where a verified application has been filed in due form and where the following facts exist and the following provisions are complied with;

1. The non-standard gas proration unit consists of contiguous quarter-quarter sections and/or lots.

2. The non-standard gas proration unit lies wholly within a single governmental section.

3. The entire non-standard gas proration unit may reasonably be presumed to be productive of gas from the Byers-Queen Gas Pool.

4. The length or width of the non-standard gas proration unit does not exceed 2640 feet.

5. The applicant presents written consent in the form of waivers from (a) all operators owning interests in the quarter section in which any part of the non-standard gas proration unit is situated and which acreage is not included in said non-standard gas proration unit, and (b) all operators owning interests within 1500 feet of the well to which such gas proration unit is proposed to be allocated.

-11-

Case No. 728

Order No. R-586

6. In lieu of sub-paragraph 5 of this rule, the applicant may furnish proof of the fact that said offset operators were notified by registered mail of his intent to form such non-standard gas proration unit. The Secretary-Director of the Commission may approve the application if, after a period of 30 days following the mailing of said notice, no operator has made objection to formation of such non-standard gas proration unit.

RULE 6. (a) The Commission after notice and hearing, shall consider the nominations of gas purchasers from the Byers-Queen Gas Pool and other relevant data and shall fix the allowable production of the Byers-Queen Gas Pool.

RULE 7. At least 30 days prior to the beginning of each gas proration period the Commission shall hold a hearing after due notice has been given. The Commission shall cause to be submitted by each gas purchaser its "Preliminary Nominations" of the amount of gas which each in good faith actually desires to purchase within the ensuing proration period, by months, from the Byers-Queen Gas Pool. The Commission shall consider the "Preliminary Nominations" of purchasers, actual production, and such other factors as may be deemed applicable in determining the amount of gas that may be produced without waste within the ensuing proration period. "Preliminary Nominations" shall be submitted on a form prescribed by the Commission.

RULE 8. In the event a gas purchaser's market shall have increased or decreased, he may file with the Commission prior to the 10th day of the month a "supplemental" nomination, showing the amount of gas he actually in good faith desires to purchase during the ensuing proration month from the Byers-Queen Gas Pool. The Commission shall hold a public hearing between the 13th and 20th days of each month to determine the reasonable market demand for gas for the ensuing proration month, and shall issue a proration schedule setting out the amount of gas which each well may produce during the ensuing proration month.

"Supplemental Nominations" shall be submitted on a form prescribed by the Commission.

Included in the monthly proration schedule shall be:

- (a) A summary of the total pool allocation for that month showing nominations, and adjustments made for underage or overage applied from a previous month,
- (b) A tabulation of the net allowable, and production for the second preceding month together with a cumulative overage or underage computation,
- (c) A tabulation of the current and net allowables for the preceding month,

- (d) A tabulation of current monthly allowables for the ensuing proration month,
- (e) A tabulation of the acreage assigned each well together with a tabulation of the acreage factor assigned each well. For the purpose of allocation a proration unit of 160 acres shall be assigned an acreage factor of 1.00; a proration unit of 80 acres a factor of 0.50, etc.

The allowable assigned to any well capable of producing its normal gas allowable in the Byers-Queen Gas Pool shall be the same proportion of the total remaining allowable allocated to said pool after deducting allowables of marginal wells that the number of acres contained in the gas proration unit for that well bears to the acreage contained in all gas proration units assigned to non-marginal wells in the Byers-Queen Gas Pool.

The Commission shall include in the proration schedule the gas wells in the Byers-Queen Gas Pool delivering to a gas transportation facility, or lease gathering system, and shall include in the proration schedule of the Byers-Queen Gas Pool any well which it finds is being unreasonably discriminated against through denial of access to a gas transportation facility, which is reasonably capable of handling the type of gas produced by such well. The total allowable to be allocated to the pool each month shall be equal to the sum of the preliminary or supplemental nominations (whichever is applicable), together with any adjustment which the Commission deems advisable.

If during a proration month the acreage assigned a well is increased by Commission order or as otherwise provided in this order the increased allowable assigned the gas proration unit for the well shall be effective on the first day of the month following approval of such increase by the Commission.

BALANCING OF PRODUCTION

RULE 9. Underproduction: The dates 7:00 a. m., January 1, and 7:00 a. m., July 1, shall be known as balancing dates and the periods of time bounded by these dates shall be known as gas proration periods. The amount of current gas allowable remaining unproduced at the end of each proration period shall be carried forward to and may be produced during the next succeeding proration period in addition to the normal gas allowable for such succeeding period; but whatever amount thereof is not made up within the first succeeding proration period shall be cancelled.

If it appears that such continued underproduction has resulted from inability of the well to produce its allowable, it may be classified as a marginal well and its allowable reduced to the well's ability to produce.

If at the end of a proration period a marginal well has produced more than the total allowable assigned a non-marginal unit of corresponding size, the marginal well shall be reclassified as a non-marginal well and its allowable adjusted accordingly.

If during a proration period a marginal well is reworked or recompleted in such a manner that its productive capacity is increased to the extent that it should be reclassified as a non-marginal well, the reclassification shall be effective on the first day of the proration month following the date of recompletion.

The Proration Manager may reclassify a well at any time if production data or deliverability tests reflect the need for such a reclassification.

RULE 10. Overproduction: A well which has produced a greater amount of gas than was allowed during a given proration period shall have its allowable for the first succeeding proration period reduced by the amount of such overproduction and such overproduction shall be made up within the first succeeding proration period. If, at any time, a well is overproduced an amount equaling six times its current monthly allowable, it shall be shut-in until it is in balance.

The Commission may allow overproduction to be made up at a lesser rate than would be the case if the well were completely shut-in upon a showing at public hearing after due notice that complete shut-in of the well would result in material damage to the well.

GRANTING OF ALLOWABLES

RULE 11. No gas well shall be given an allowable until Form C-104 and Form C-110 have been filed together with a plat showing acreage attributed to said well and the locations of all wells on the lease.

RULE 12. Allowables to newly completed gas wells shall commence on the date of connection to a gas transportation facility, as determined from an affidavit furnished to the Commission (Box 2045, Hobbs, New Mexico) by the purchaser, or the date of filing of Form C-104, Form C-110 and the plat described above, or the date of application for a non-standard gas proration unit as provided in Rule 5.

RULE 13. The monthly gas production from each well shall be metered separately and the gas production therefrom shall be reported to the Commission on Form C-115 so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the gas produced.

Each purchaser or taker of gas in the Byers-Queen Gas Pool shall submit a report to the Commission so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was purchased or taken.

-14-

Case No. 728
Order No. R-586

Such report shall be filed on either Form C-111 or Form C-114 (whichever is applicable) with the wells being listed in approximately the same order as they are listed on the proration schedule.

Forms C-111 and C-114 referred to herein shall be submitted in duplicate, the original being sent to the Commission at Box 871, Santa Fe, New Mexico, the other copy being sent to Box 2045, Hobbs, New Mexico.

Form C-115 shall be submitted in accordance with Rule 1114 of the Commission's Rules and Regulations.

The full production of gas from each well shall be charged against the well's allowable regardless of what disposition has been made of the gas; provided, however, that gas used in the lease for consumption in lease houses, treaters, compressors, combustion engines and other similar lease equipment shall not be charged against the well's allowable.

DEFINITIONS

RULE 14. The term "gas purchaser" as used in these rules, shall mean any "taker" of gas either at the wellhead or at any point on the lease where connection is made for gas transportation or utilization. It shall be the responsibility of said "taker" to submit a nomination.

RULE 15. No gas, either dry gas or casinghead gas, produced from the Byers-Queen Gas Pool shall be flared or vented.

PROVIDED FURTHER, After the effective date of this order no well shall be completed or recompleted in such a manner that the producing zone of the Byers-Queen Gas Pool and the producing zone of any other common source of supply are both open in the same well bore unless specifically authorized by order of the Commission after notice and hearing. Dual completions may be effected in accordance with the provisions of Rule 112-A of the Commission's Rules and Regulations.

Any well presently completed in such a manner that the well bore is open to more than one common source of supply shall be assigned to the applicable pool by the Commission staff. Any operator of any well completed in such a manner shall submit to the Commission office at Hobbs, New Mexico, all pertinent well completion data on Form C-105, together with electric logs, sample logs, drill stem test records, etc. All data shall be submitted in duplicate on or before May 15, 1955. Failure of any operator to submit the required data will result in cancellation of Form C-110 and subsequent cancellation of allowables.

If the operator is not satisfied with the well's assignment he may apply for a hearing on the matter in accordance with Commission Rule 1203.

-15-

Case No. 728
Order No. R-586

PROVIDED FURTHER, That in filing Form C-101 "Notice of Intention to Drill or Recomplete" all operators shall strictly comply with the provisions of Rule 104, paragraph (e).

PROVIDED FURTHER, That failure to comply with the provisions of this order or the rules contained herein shall result in the cancellation of allowable assigned to the affected well. No further allowable shall be assigned to the affected well until all rules and regulations are complied with. The Proration Manager shall notify the operator of the well and the purchaser in writing of the date of allowable cancellation and the reason therefor.

PROVIDED FURTHER, That special pool rules applicable to the Justis Gas Pool be, and the same hereby are promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE JUSTIS GAS POOL

Well Spacing and Acreage Requirements for Drilling Tracts.

RULE 1. Any well drilled a distance of one mile or more outside the boundary of the Justis Gas Pool shall be classified as a wildcat well. Any well drilled less than one mile outside the boundary of the Justis Gas Pool shall be spaced, drilled, operated and prorated in accordance with the regulations in effect in the Justis Gas Pool.

RULE 2. Each well drilled or recompleted within the Justis Gas Pool on a standard proration unit after the effective date of this rule shall be drilled not closer than 660 feet to any boundary line of the tract nor closer than 330 feet to a quarter-quarter section line or subdivision inner boundary line. Any well drilled to and producing from the Justis Gas Pool prior to the effective date of this order at a location conforming to the spacing requirements effective at the time said well was drilled shall be considered to be located in conformance with this rule.

RULE 3. The Secretary-Director of the Commission shall have authority to grant exception to the requirements of Rule 2 without notice and hearing where a verified application therefor has been filed in due form and the necessity for the unorthodox location is based on topographical conditions or is occasioned by the recompletion of a well previously drilled to another horizon.

Applicants shall furnish all operators within a 1980-foot radius of the subject well a copy of the application to the Commission, and applicant shall include with his application a list of names and addresses of all operators within such radius, together with a stipulation that proper notice has been given said operators at the addresses given. The Secretary-Director of the Commission shall wait at least 20 days before approving any such unorthodox location, and shall approve such unorthodox location only in the absence of objection of any offset operators. In the event an operator objects to the unorthodox location the Commission shall consider the matter only after proper notice and hearing.

-16-

Case No. 728

Order No. R-586

RULE 4. The provisions of Statewide Rule 104, Paragraph (k), shall not apply to the Justis Gas Pool located in Lea County, New Mexico.

GAS PRORATION

RULE 5. (a) The acreage allocated to a gas well for proration purposes shall be known as the gas proration unit for that well. For the purpose of gas allocation in the Justis Gas Pool, a standard proration unit shall consist of between 158 and 162 contiguous surface acres substantially in the form of a square which shall be a legal subdivision (quarter section) of the U. S. Public Land Surveys with a well located at least 660 feet from the nearest property lines;

(b) The allowable production from any non-standard gas proration unit as compared with the allowable production therefrom if such tract were a standard unit shall be in the ratio of the area of such non-standard proration unit expressed in acres to the area of 160 acres. Any gas proration unit containing between 158 and 162 acres shall be considered to contain 160 acres for the purpose of computing allowables.

(c) A non-standard gas proration unit of less than 160 acres may be formed after notice and hearing by the Commission, or by administrative approval under the provisions of Paragraph (d) of this Rule. Non-standard gas proration units of more than 160 acres may be formed after notice and hearing by the Commission.

(d) The Secretary-Director of the Commission shall have authority to grant an exception to Rule 5 (a) without Notice and Hearing where a verified application has been filed in due form and where the following facts exist and the following provisions are complied with;

1. The non-standard gas proration unit consists of contiguous quarter-quarter sections and/or lots.

2. The non-standard gas proration unit lies wholly within a single governmental section.

3. The entire non-standard gas proration unit may reasonably be presumed to be productive of gas from the Justis Gas Pool.

4. The length or width of the non-standard gas proration unit does not exceed 2640 feet.

5. The applicant presents written consent in the form of waivers from (a) all operators owning interests in the quarter-section in which any part of the non-standard gas proration unit is situated and which acreage is not included in said non-standard gas proration unit, and (b) all operators owning interests within 1500 feet of the well to which such gas proration unit is proposed to be allocated.

6. In lieu of sub-paragraph 5 of this rule, the applicant may furnish proof of the fact that said offset operators were notified by registered mail of his intent to form such non-standard gas proration unit. The Secretary of the Commission may approve the application if, after a period of 30 days following the mailing of said notice, no operator has made objection to formation of such non-standard gas proration unit.

RULE 6. (a) The Commission after notice and hearing, shall consider the nominations of gas purchasers from the Justis Gas Pool and other relevant data and shall fix the allowable production of the Justis Gas Pool.

RULE 7. At least 30 days prior to the beginning of each gas proration period the Commission shall hold a hearing after due notice has been given. The Commission shall cause to be submitted by each gas purchaser its "Preliminary Nominations" of the amount of gas which each in good faith actually desires to purchase within the ensuing proration period, by months, from the Justis Gas Pool. The Commission shall consider the "Preliminary Nominations" of purchasers, actual production, and such other factors as may be deemed applicable in determining the amount of gas that may be produced without waste within the ensuing proration period. "Preliminary Nominations" shall be submitted on a form prescribed by the Commission.

RULE 8. In the event a gas purchaser's market shall have increased or decreased, he may file with the Commission prior to the 10th day of the month a supplemental nomination, showing the amount of gas he actually in good faith desires to purchase during the ensuing proration month from the Justis Gas Pool. The Commission shall hold a public hearing between the 13th and 20th days of each month to determine the reasonable market demand for gas for the ensuing proration month, and shall issue a proration schedule setting out the amount of gas which each well may produce during the ensuing proration month.

"Supplemental Nominations" shall be submitted on a form prescribed by the Commission.

Included in the monthly proration schedule shall be:

- (a) A summary of the total pool allocation for that month showing nominations, and adjustments made for under-
age or overage applied from a previous month,
- (b) A tabulation of the net allowable, and production for
the second preceding month together with a cumulative
overage or underage computation,
- (c) A tabulation of the current and net allowables for the
preceding month,

- (d) A tabulation of current monthly allowables for the ensuing proration month,
- (e) A tabulation of the acreage assigned each well together with a tabulation of the acreage factor assigned each well. For the purpose of allocation a proration unit of 160 acres shall be assigned an acreage factor of 1.00; a proration unit of 80 acres a factor of 0.50, etc.

The allowable assigned to any well capable of producing its normal gas allowable in the Justis Gas Pool shall be the same proportion of the total remaining allowable allocated to said pool after deducting allowables of marginal wells that the number of acres contained in the gas proration unit for that well bears to the acreage contained in all gas proration units assigned to non-marginal wells in the Justis Gas Pool.

The Commission shall include in the proration schedule the gas wells in the Justis Gas Pool delivering to a gas transportation facility, or lease gathering system, and shall include in the proration schedule of the Justis Gas Pool any well which it finds is being unreasonably discriminated against through denial of access to a gas transportation facility, which is reasonably capable of handling the type of gas produced by such well. The total allowable to be allocated to the pool each month shall be equal to the sum of the preliminary or supplemental nominations (whichever is applicable), together with any adjustment which the Commission deems advisable.

If during a proration month the acreage assigned a well is increased by Commission order or as otherwise provided in this order the increased allowable assigned the gas proration unit for the well shall be effective on the first day of the month following approval of such increase by the Commission.

BALANCING OF PRODUCTION

RULE 9. Underproduction: The dates 7:00 a.m., January 1, and 7:00 a.m., July 1, shall be known as balancing dates and the periods of time bounded by these dates shall be known as gas proration periods. The amount of current gas allowable remaining unproduced at the end of each proration period shall be carried forward to and may be produced during the next succeeding proration period in addition to the normal gas allowable for such succeeding period; but whatever amount thereof is not made up within the first succeeding proration period shall be cancelled.

If it appears that such continued underproduction has resulted from inability of the well to produce its allowable, it may be classified as a marginal well and its allowable reduced to the well's ability to produce.

If at the end of a proration period a marginal well has produced more than the total allowable assigned a non-marginal unit of corresponding size, the marginal well shall be reclassified as a non-marginal well and its allowable adjusted accordingly.

If during a proration period a marginal well is reworked or recompleted in such a manner that its productive capacity is increased to the extent that it should be reclassified as a non-marginal well, the reclassification shall be effective on the first day of the proration month following the date of recompletion.

The Proration Manager may reclassify a well at any time if production data or deliverability tests reflect the need for such a reclassification.

RULE 10. Overproduction: A well which has produced a greater amount of gas than was allowed during a given proration period shall have its allowable for the first succeeding proration period reduced by the amount of such overproduction and such overproduction shall be made up within the first succeeding proration period. If, at any time, a well is overproduced an amount equaling six times its current monthly allowable, it shall be shut-in until it is in balance.

The Commission may allow overproduction to be made up at a lesser rate than would be the case if the well were completely shut-in upon a showing at public hearing after due notice that complete shut-in of the well would result in material damage to the well.

GRANTING OF ALLOWABLES

RULE 11. No gas well shall be given an allowable until Form C-104 and Form C-110 have been filed together with a plat showing acreage attributed to said well and the locations of all wells on the lease.

RULE 12. Allowables to newly completed gas wells shall commence on the date of connection to a gas transportation facility, as determined from an affidavit furnished to the Commission (Box 2045, Hobbs, New Mexico) by the purchaser, or the date of filing of Form C-104, Form C-110 and the plat described above, or the date of application for a non-standard gas proration unit as provided in Rule 5.

RULE 13. The monthly gas production from each well shall be metered separately and the gas production therefrom shall be reported to the Commission on Form C-115 so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the gas produced.

Each purchaser or taker of gas in the Justis Gas Pool shall submit a report to the Commission so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was purchased or taken.

Such report shall be filed on either Form C-111 or Form C-114 (whichever is applicable) with the wells being listed in approximately the same order as they are listed on the proration schedule.

Forms C-111 and C-114 referred to herein shall be submitted in duplicate, the original being sent to the Commission at Box 871, Santa Fe, New Mexico, the other copy being sent to Box 2045, Hobbs, New Mexico.

Form C-115 shall be submitted in accordance with Rule 1114 of the Commission's Rules and Regulations.

The full production of gas from each well shall be charged against the well's allowable regardless of what disposition has been made of the gas; provided, however, that gas used on the lease for consumption in lease houses, treaters, compressors, combustion engines and other similar lease equipment shall not be charged against the well's allowable.

RULE 14. The term "gas purchaser" as used in these rules, shall mean any "taker" of gas either at the wellhead or at any point on the lease where connection is made for gas transportation or utilization. It shall be the responsibility of said "taker" to submit a nomination.

RULE 15. No gas, either dry gas or casinghead gas, produced from the Justis Gas Pool shall be flared or vented.

PROVIDED FURTHER, After the effective date of this order no well shall be completed or recompleted in such a manner that the producing zone of the Justis Gas Pool and the producing zone of any other common source of supply are both open in the same well bore unless specifically authorized by order of the Commission after notice and hearing. Dual completions may be effected in accordance with the provisions of Rule 112-A of the Commission's Rules and Regulations.

Any well presently completed in such a manner that the well bore is open to more than one common source of supply shall be assigned to the applicable pool by the Commission staff. Any operator of any well completed in such a manner shall submit to the Commission office at Hobbs, New Mexico, all pertinent well completion data on Form C-105, together with electric logs, sample logs, drill stem test records, etc. All data shall be submitted in duplicate on or before May 15, 1955. Failure of any operator to submit the required data will result in cancellation of Form C-110 and subsequent cancellation of allowables.

If the operator is not satisfied with the well's assignment he may apply for a hearing on the matter in accordance with Commission Rule 1203.

PROVIDED FURTHER, That in filing Form C-101 "Notice of Intention to Drill or Recomplete" all operators shall strictly comply with the provisions of Rule 104, paragraph (e).

PROVIDED FURTHER, That failure to comply with the provisions of this order or the rules contained herein shall result in the cancellation of allowable assigned to the affected well. No further allowable shall be assigned to the affected well until all rules and regulations are complied with. The Proration Manager shall notify the operator of the well and the purchaser in writing of the date of allowable cancellation and the reason therefor.

EXHIBIT "A"

Horizontal limits of the Tubb Gas Pool

TOWNSHIP 21 SOUTH, RANGE 37 EAST

All of Secs. 3, 9, 10, 15, 16, 17
All of Secs. 20 to 23, and 26 to 29 incl.
SW/4, & Lots 3, 4, 5, 6, 11, 12, 13, 14 of Sec. 2
SE/4, & Lots 1, 2, 7, 8, 9, 10, 15, 16 of Sec. 4
E/2 of Sec. 8
W/2 of Sec. 11
W/2 of Sec. 14
E/2 of Sec. 19
W/2 of Sec. 25
E/2 of Sec. 30
E/2 of Sec. 31
All of Secs. 32 to 36 incl.

TOWNSHIP 22 SOUTH, RANGE 37 EAST

All of Secs. 1 to 5 incl.
E/2 Sec. 6
All Secs. 8 to 16 incl.
E/2 Sec. 21
All Secs. 22 to 25 incl.

TOWNSHIP 22 SOUTH, RANGE 38 EAST

W/2 Sec. 6
W/2 Sec. 7
W/2 Sec. 18
All Secs. 19 & 30

EXHIBIT "B"

Horizontal limits of the Byers-Queen Gas Pool

TOWNSHIP 18 SOUTH, RANGE 38 EAST

All Secs. 29 to 32 incl.

-22-

Case No. 728
Order No. R-586

EXHIBIT "C"

Horizontal limits of the Justis Gas Pool

TOWNSHIP 25 SOUTH, RANGE 37 EAST

SW/4 Sec. 1

SE/4 Sec. 2

E/2 Sec. 11

W/2 Sec. 12

All Sec. 13

E/2 Sec. 14

E/2 Sec. 23

W/2 Sec. 24

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JOHN F. SIMMS, Chairman

E. S. WALKER, Member

W. B. MACEY, Member and Secretary

S E A L

ir

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 728
Order No. R-586-A

THE APPLICATION OF THE OIL
CONSERVATION COMMISSION UPON
ITS OWN MOTION FOR AN ORDER
AMENDING, REVISING OR ABROGATING
EXISTING RULES AND REGULATIONS OF
THE OIL CONSERVATION COMMISSION
AND/OR PROMULGATING RULES AND
REGULATIONS RELATING TO GAS POOL
DELINEATION, GAS PRORATION, AND
OTHER RELATED MATTERS, AFFECTING
OR CONCERNING THE TUBB, BYERS-
QUEEN AND JUSTIS GAS POOLS, LEA
COUNTY, NEW MEXICO.

NUNC PRO TUNC ORDER OF THE COMMISSION

BY THE COMMISSION:

It appearing to the Commission that Order R-586, dated April 11, 1955, does not define the horizontal limits of the Justis Gas Pool in a manner which indicates the true horizontal extent of that pool, the Commission

FINDS:

That Exhibit "C" of said order should be revised to redefine the horizontal limits of the Justis Gas Pool.

IT IS THEREFORE ORDERED:

That Order R-586, as the same appears in the records of the Commission, and the original of said order, be amended in the following respects and particulars:

That Exhibit "C" of Order R-586, be changed to read as follows:

EXHIBIT "C"

Horizontal Limits of the Justis Gas Pool:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
SW/4 Section 1
SE/4 Section 2
E/2 Section 11
W/2 Section 12

-2-
Order No. R-586-A

EXHIBIT "C" (continued)

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM (continued)
W/2 Section 13
E/2 Section 14
E/2 Section 23
All Section 24

IT IS FURTHER ORDERED:

That the corrections and changes set forth in this order be entered nunc
pro tunc as of April 11, 1955, the date of said Order R-586.

DONE at Santa Fe, New Mexico, on this 18th day of May, 1955.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JOHN F. SIMMS, Chairman

E. S. WALKER, Member

W. B. MACEY, Member and Secretary

S E A L

/ir

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 1221
Order No. R-586-B

APPLICATION OF THE OIL CONSERVATION
COMMISSION UPON ITS OWN MOTION FOR
AN ORDER AMENDING THE SPECIAL RULES
AND REGULATIONS FOR THE TUBB GAS POOL
TO MAKE PROVISION IN SAID RULES FOR
THE REGULATION OF OIL WELLS COMPLETED
WITHIN THE DEFINED LIMITS OF SAID POOL;
AND FURTHER, TO CONSIDER THE DELETION
OF THAT PORTION OF ORDER R-586 WHICH
RELATES TO THE BYERS-QUEEN GAS POOL.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on March 14, 1957, May 16, 1957 and again on July 17, 1957, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 9th day of September, 1957, the Commission, a quorum being present, having considered the testimony and evidence adduced 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 several wells have been completed within the defined limits of the Tubb Gas Pool which are capable of producing liquid hydrocarbons with gravities in the range which is commonly accepted to be that of crude petroleum oil, and that such wells should be classified as oil wells.

(3) That to classify, space, and prorate the aforesaid wells as though they were gas wells could be unfair to the royalty owners in the Tubb Gas Pool.

(4) That an oil well in the Tubb Gas Pool should be defined as a well which produces liquid hydrocarbons possessing a gravity of 45° API or less.

-2-

Case No. 1221

Order No. R-586-B

(5) That an oil well in the Tubb Gas Pool should have dedicated thereto a proration unit consisting of 40 acres, more or less, being a governmental quarter-quarter section legal subdivision of the United States Public Land Surveys.

(6) That no acreage should be simultaneously dedicated to an oil well and to a gas well in the Tubb Gas Pool.

(7) That the limiting gas-oil ratio for oil wells in the Tubb Gas Pool should be 2000 cubic feet of gas for each barrel of oil produced.

(8) That the Special Rules and Regulations for the Byers-Queen Gas Pool as set forth in Order R-586 should be deleted since the production from the said Byers-Queen Gas Pool is no longer of sufficient consequence to warrant its continued prorationing.

IT IS THEREFORE ORDERED:

(1) That the Special Rules and Regulations for the Tubb Gas Pool, as set forth in Order R-586, be and the same are hereby amended to include the following rules:

SPACING AND OPERATION OF OIL WELLS

RULE 16. An oil well in the Tubb Gas Pool shall be defined as a well which produces hydrocarbons possessing a gravity of 45° API or less.

RULE 17. An oil well in the Tubb Gas Pool shall have dedicated thereto a proration unit consisting of 40 acres, more or less, being a governmental quarter-quarter section legal subdivision of the United States Public Land Surveys.

RULE 18. No acreage shall be simultaneously dedicated to an oil well and to a gas well in the Tubb Gas Pool.

RULE 19. The limiting gas-oil ratio for oil wells in the Tubb Gas Pool shall be 2000 cubic feet of gas for each barrel of oil produced.

(2) That the Special Rules and Regulations for the Byers-Queen Gas Pool, as set forth in Order R-586, be and the same are hereby deleted effective September 30, 1957.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

MURRAY E. MORGAN, Member

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

S E A L

ir/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 1293
Order No. R-586-C

APPLICATION OF AMERADA PETROLEUM
CORPORATION FOR AN ORDER AMENDING
THE SPECIAL RULES AND REGULATIONS
FOR THE JUSTIS GAS POOL IN LEA
COUNTY, NEW MEXICO AS SET FORTH
IN ORDER R-586, R-586-A AND R-586-B,
AS AMENDED BY ORDER R-967, TO PROVIDE
FOR 320-ACRE GAS PRORATION UNITS.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a. m. on August 15, 1957, and again on September 18, 1957, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 3rd day of October, 1957, the Commission, a quorum being present, having considered the application and the evidence adduced 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 Commission by Order R-586 dated April 11, 1955, established 160-acre spacing for the Justis Gas Pool.
- (3) That the applicant, Amerada Petroleum Corporation, has proved by the evidence in this case that one well will drain 320 acres in the Justis Gas Pool.
- (4) That at present, the Justis Gas Pool has not been so far developed as to prevent the adoption of 320-acre spacing in said pool.
- (5) That the adoption of 320-acre spacing in the Justis Gas Pool will not cause waste nor impair correlative rights.

CASE NO. 1293
Order No. R-586-C

(6) That the adoption of 320-acre spacing in the Justis Gas Pool will prevent the drilling of unnecessary wells in said pool.

IT IS THEREFORE ORDERED:

(1) That any well which was projected to or completed in the Justis Gas Pool prior to the effective date of this order be and the same is hereby granted an exception to Rule 5 hereinafter set forth.

(2) That an increase in the acreage dedicated to any such excepted well shall become effective the first day of the month following receipt by the Commission of Form C-128, Well Location and Acreage Dedication Plat, provided said Form C-128 indicates that the acreage dedicated to such well has been increased in conformance with the Special Rules and Regulations for the Justis Gas Pool.

(3) That Rule 5 of the Special Rules and Regulations for the Justis Gas Pool be and the same is hereby superseded by the following rule:

SPECIAL RULES AND REGULATIONS FOR THE
JUSTIS GAS POOL

RULE 5. (a) The acreage allocated to a gas well for proration purposes shall be known as the Gas Proration Unit for that well. For the purpose of Gas Allocation in the Justis Gas Pool, a standard proration unit shall consist of between 316 and 324 contiguous surface acres, substantially in the form of a rectangle which shall be a legal subdivision (half section) of the U. S. Public Land Surveys with a well located at least 660 feet from the nearest property lines;

(b) The allowable production from any non-standard gas proration unit as compared with the allowable production therefrom if such tract were a standard unit shall be in the ratio of the area of such non-standard proration unit expressed in acres to the area of 320 acres. Any gas proration unit containing between 316 and 324 acres shall be considered to contain 320 acres for the purpose of computing allowables.

(c) A non-standard gas proration unit may be formed after notice and hearing by the Commission, or by administrative approval under the provisions of Paragraph (d) of this Rule.

(d) The Secretary-Director of the Commission shall have authority to grant an exception to Rule 5 (a) without notice and hearing where a verified application has been filed in due form and where the following facts exist and the following provisions are complied with;

1. The proposed non-standard proration unit consists of less than 320 acres or where the unorthodox size or shape of the tract is due to a variation in legal subdivision of the U. S. Public Land Surveys.

-3-

Case No. 1293

Order No. R-586-C

2. The non-standard gas proration unit consists of contiguous quarter-quarter sections and/or lots.

3. The non-standard gas proration unit lies wholly within a single governmental section.

4. The entire non-standard gas proration unit may reasonably be presumed to be productive of gas from the Justis Gas Pool.

5. The length or width of the non-standard gas proration unit does not exceed 5280 feet.

6. The applicant presents written consent in the form of waivers from (a) all operators owning interests in section in which any part of the non-standard gas proration unit is situated and which acreage is not included in said non-standard gas proration unit, and (b) all operators owning interests within 1500 feet of the well to which such gas proration unit is proposed to be allocated.

7. In lieu of sub-paragraph 6 of this rule, the applicant may furnish proof of the fact that said offset operators were notified by registered mail of his intent to form such non-standard gas proration unit. The Secretary of the Commission may approve the application if, after a period of 30 days following the mailing of said notice, no operator has made objection to formation of such non-standard gas proration unit.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

MURRAY E. MORGAN, Member

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

S E A L

ga/

BEFORE THE
OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF EL PASO NATURAL GAS COMPANY
FOR AN ORDER REVISING AND AMENDING
ORDER NO. R-586 TO PROVIDE FOR AN
EXTENSION OF THE VERTICAL LIMITS
OF THE JUSTIS GAS POOL, LEA COUNTY,
NEW MEXICO

CASE NO. _____

APPEARANCE

Come now Seth, Montgomery, Federici & Andrews, and enter their
appearance as attorneys for the applicant, El Paso Natural Gas Com-
pany, in the above entitled proceeding.

SETH, MONTGOMERY, FEDERICI & ANDREWS

By


Attorneys for Applicant,
Santa Fe, New Mexico

*Docketed
1-7-59
EP*

Case No.

728

Application, Transcript,
Small Exhibits, Etc.

— CASE 728 - ORDER R-586
Dated April 11, 1955

Entered 4-12-55

BEFORE THE
Oil Conservation Commission
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 728 Regular Hearing

TRANSCRIPT OF PROCEEDINGS

ADA DEARNLEY AND ASSOCIATES
COURT REPORTERS
ROOMS 105, 106, 107 EL CORTEZ BUILDING
TELEPHONE 7-9546
ALBUQUERQUE, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 15, 1957

IN THE MATTER OF:

Application of the Commission, upon its own motion, for an order amending, revising, or abrogating existing rules and regulations of the Oil Conservation Commission and promulgating additional rules and regulations relating to gas pool delineation, gas proration, and other related matters affecting or concerning the Tubb, Byers-Queen and Justis Gas Pools, Lea County, New Mexico.

Case No.
728

The order contemplated will pertain to gas pool delineation, gas proration, gas well spacing, gas well allowable, gas proration units and related matters affecting the following designated gas pools situated in Lea County: Byers-Queen Gas Pool, Justis Gas Pool, Tubb Gas Pool.

BEFORE:

Mr. R. R. Spurrier
Mr. E. S. (Johnny) Walker

TRANSCRIPT OF HEARING

MR. SPURRIER: The next case on the docket is Case 728.

MR. YOST: In this case it is likewise requested that it be continued to August 18th. However, if anyone is here that has testimony to put on, the Commission will hear it.

MR. SPURRIER: Is there any objection to continuance? Does anyone have testimony to present? Then we will continue the case to August 18th.

ADA DEARNLEY & ASSOCIATES
STENOGRAPHIC REPORTERS
ROOM 105-106-107 EL CORTEZ BLDG.
PHONES 7-9645 AND 5-9546
ALBUQUERQUE, NEW MEXICO

STATE OF NEW MEXICO)
 : ss.
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter, do hereby
certify that the foregoing and attached transcript of proceedings
before the New Mexico Oil Conservation Commission at Santa Fe,
New Mexico, is a true and correct record to the best of my
knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial
seal this 17th day of July, 1954.

Ada Dearnley
Notary Public, Court Reporter

My Commission Expires:

June 19, 1955

BEFORE THE
Oil Conservation Commission
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 728

TRANSCRIPT OF PROCEEDINGS

ADA DEARNLEY AND ASSOCIATES
COURT REPORTERS
ROOMS 105, 106, 107 EL CORTEZ BUILDING
TELEPHONE 7-9546
ALBUQUERQUE, NEW MEXICO

REPORT
OF THE COMMISSIONER OF LANDS
Santa Fe, New Mexico
August 18, 1934

IN THE MATTER OF:

Application of the Commission, upon its own motion, for an order defining, revising, or abrogating existing rules and regulations of the Oil Conservation Commissioner and promulgating additional rules and regulations relating to gas pool delineation, gas proration, and other related matters affecting or concerning the Tubb, Myers-Queen and Justice Gas Pools, Lea County, New Mexico.

Case 724

The order contemplated will pertain to gas pool delineation, gas proration, gas well spacing, gas well allowable, gas proration units and related matters affecting the following designated gas pools situated in Lea County:

Myers-Queen Gas Pool
Justice Gas Pool
Tubb Gas Pool

BEFORE:

Honorable Siwir L. Meehan
Mr. E. S. (Johnny) Walker
Mr. William P. Macey

TRANSCRIPT OF HEARING

MR. MACEY: The next case on the docket is Case 724. Does anyone have any comments or suggestions to make on this?

MR. TUBB: A. P. Tubbs, for himself. Atlantic well cover the production of gas from a well, 40 acres, will produce gas from the well in excess of 100,000 cubic feet per day.

MR. MACEY: All right, the case is closed.

ADA DEARNLEY & ASSOCIATES
STENOGRAPHIC REPORTERS
ROOM 105-106-107 EL CORTEZ BLDG.
PHONES 7-9645 AND 5-9546
ALBUQUERQUE, NEW MEXICO

...has just been filed, and I am sure, ... party would be
in order to continue the case until September, with the idea in
mind of dispensing with the case at that time. Unless there is an
objection on the part of anyone -- is there objection to the
continuation of the case until September 10th?

MR. STANLEY: If Case 727 is to be postponed to the
September hearing, I think that 728 should be, since actually the
Tubb and Blinchy Pools, although they are two different reservoirs,
they are still allied with each other. I think that the rules in
effect for the Blinchy Pool should automatically be initiated for
the Tubb.

MR. MACEY: I don't know whether anyone will agree with
you. Do I take it you want a continuance?

MR. STANLEY: Yes.

MR. MACEY: If so, the case will be continued to September
1961.

STATE OF NEW MEXICO)
COUNTY OF SERNALILLO) ss.

I, ADA DEARNLEY, Court Reporter, do hereby certify that the
foregoing and attached transcripts of proceedings before the Hon.
Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a
true and correct record of the proceedings, skill and
ability.

IN WITNESS WHEREOF, I have hereunto set my hand and notarial seal
this 22nd day of August, 1961.

Ada Dearnley

Notary Public for New Mexico

ADA DEARNLEY & ASSOCIATES
STENOGRAPHIC REPORTERS
ROOM 105-106-107 EL CORTEZ BLDG.
PHONES 7-9545 AND 5-9546
ALBUQUERQUE, NEW MEXICO

BEFORE THE
Oil Conservation Commission
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 728

TRANSCRIPT OF PROCEEDINGS

ADA DEARNLEY AND ASSOCIATES
COURT REPORTERS
ROOMS 105, 106, 107 EL CORTEZ BUILDING
TELEPHONE 7-9546
ALBUQUERQUE, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 16, 1954

IN THE MATTER OF:

The application of the Oil Conservation Commission, upon its own motion, for an order amending, revising, or abrogating existing rules and regulations relating to gas pool delineation, gas proration, and other related matters affecting or concerning the Tubb, Byers, Queen and Justis Gas Pools, Lea County, New Mexico.

Case No.
728

BEFORE:

Honorable Edwin L. Mechem
Mr. E. S. (Johnny) Walker
Mr. R. R. Spurrier

TRANSCRIPT OF HEARING

MR. SPURRIER: Does anyone have testimony they would like to present in Case 728?..... Is there objection to continuing that case to July 15th?..... If not we will recommend that it is continued to July 15th.

STATE OF NEW MEXICO)
: ss.
COUNTY OF BERNALILLO)

I, Ada Dearnley, Court Reporter, do hereby
certify that the foregoing and attached transcript of proceedings
before the New Mexico Oil Conservation Commission at Santa Fe,
New Mexico, is a true and correct record to the best of my
knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial
seal this 17th day of June, 1954.

Ada Dearnley
Notary Public, Court Reporter

My Commission Expires:

June 19, 1955

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 728
Order No. R-586-A

THE APPLICATION OF THE OIL
CONSERVATION COMMISSION UPON
ITS OWN MOTION FOR AN ORDER
AMENDING, REVISING OR ABROGATING
EXISTING RULES AND REGULATIONS OF THE
OIL CONSERVATION COMMISSION AND/OR
PROMULGATING RULES AND REGULATIONS
RELATING TO GAS POOL DELINEATION, GAS
PRORATION, AND OTHER RELATED MATTERS,
AFFECTING OR CONCERNING THE TUBB,
BYERS-QUEEN AND JUSTIS GAS POOLS, LEA
COUNTY, NEW MEXICO.

NUNC PRO TUNC ORDER OF THE COMMISSION

BY THE COMMISSION:

It appearing to the Commission that Order R-586, dated
April 11, 1955, does not define the horizontal limits of the Justis Gas
Pool in a manner which indicates the true horizontal extent of that pool,
the Commission

FINDS:

That Exhibit "C" of said order should be revised to redefine
the horizontal limits of the Justis Gas Pool.

IT IS THEREFORE ORDERED:

That Order R-586, as the same appears in the records of the
Commission, and the original of said order, be amended in the following
respects and particulars:

That Exhibit "C" of Order R-586, be changed to read as
follows:

EXHIBIT "C"

Horizontal Limits of the Justis Gas Pool:

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
SW/4 Section 1
SE/4 Section 2
E/2 Section 11
W/2 Section 12
W/2 Section 13
E/2 Section 14
E/2 Section 23
All Section 24

IT IS FURTHER ORDERED:

That the corrections and changes set forth in this order be entered nunc pro tunc as of April 11, 1955, the date of said Order R-586.

DONE at Santa Fe, New Mexico, on this 12 day of May, 1955.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

John F. Simms
JOHN F. SIMMS, Chairman

E. S. Walker
E. S. WALKER, Member

W. B. Macey
W. B. MACEY, Member and Secretary



ir/

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. 728
Order No. R-586

THE APPLICATION OF THE OIL
CONSERVATION COMMISSION
UPON ITS OWN MOTION FOR AN
ORDER AMENDING, REVISING OR
ABROGATING EXISTING RULES AND
REGULATIONS OF THE OIL CONSERVATION
COMMISSION, AND/OR PROMULGATING
RULES AND REGULATIONS, RELATING TO
GAS POOL DELINEATION, GAS PRORATION,
AND OTHER RELATED MATTERS, AFFECTING
OR CONCERNING THE TUBB, BYERS-QUEEN,
AND JUSTIS GAS POOLS, LEA COUNTY, NEW
MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a. m. on June 16, 1954, July 15, 1954, August 18, 1954 and September 16, 1954, at Santa Fe, New Mexico, and on October 20, 1954 at Hobbs, New Mexico, before the Oil Conservation Commission, hereinafter referred to as the "Commission".

NOW, on this 24 day of April, 1955, the Commission, a quorum being present, having considered the records, evidence and testimony adduced and being fully advised in the premises,

FINDS:

(1) That due notice of the time and place of hearing and the purpose thereof having been given as required by law, the Commission has jurisdiction of this case and the subject matter thereof.

(2) That under date of January 1, 1950, the Commission issued its Order No. 850 creating the Justis Gas Pool, and that said Order No. 850 defined the horizontal and vertical limits thereof. That on February 17, 1953, the Commission issued Order No. R-264 creating the Tubb and Byers-Queen Gas Pools, and defining the horizontal and vertical limits of said gas pools. That by Order No. R-264 and subsequent orders the Commission extended the horizontal and vertical limits of the Justis Gas Pool. That by Order R-407 the vertical limits of the Tubb Gas Pool were extended.

(3) That under date of September 28, 1953, the Commission issued its Orders Nos. R-373, R-375, and R-376 and under date of November 10, 1953, the Commission issued its Orders Nos. R-373-A, R-375-A and R-376-A, providing rules, definitions and procedures to be followed in prorating gas in the Tubb, Justis, and Byers-Queen gas pools, respectively; and by subsequent orders issued after due notice and hearing, the Commission allocated production of gas in said pools commencing January 1, 1954.

(4) That the Tubb, Byers-Queen and Justis Gas Pools are separate gas reservoirs and should be defined vertically and horizontally as set forth in this order.

(5) That the producing capacity of the gas wells in the Tubb, Byers-Queen and Justis Gas Pools is greater than the market demand for gas from each of such pools.

(6) That in order to prevent waste it is necessary to allocate and prorate the gas production among the gas wells in the Tubb, Byers-Queen, and Justis Gas Pools in accordance with provisions of this order.

(7) That the protection and proper recognition of correlative rights as such rights are defined by Section 26 (h) Chapter 168, New Mexico Session Laws of 1949, require that the gas production from the Tubb, Byers-Queen and Justis gas pools be prorated, in accordance with the terms and provisions of this order.

(8) That the Rules and Regulations hereinafter set forth in this order are in all respects in the interests of conservation and provide for the allocation of the allowable production among the gas wells in the Tubb, Byers-Queen and Justis Gas Pools upon a reasonable basis and give appropriate recognition to correlative rights.

(9) That no evidence was presented to justify a change in the size of the standard proration unit in the Tubb, Byers-Queen, or Justis Gas Pools from 160-acres.

(10) That in order to prevent waste and protect correlative rights, the special rules contained in this order should be adopted to govern the production from wells completed or recompleted in such a manner that the bore hole of the well is open in more than one common source of supply.

(11) That in order to prevent waste a "no-flare" rule should be adopted to prohibit the flaring, venting, or wasting of natural gas or any other type of gas in any of the gas pools referred to and affected by this order.

IT IS THEREFORE ORDERED:

(1) That the Tubb Gas Pool heretofore created, shall have vertical limits which extend from a point 100 feet above the "Tubb Marker" to a point 225 feet below the "Tubb Marker", as said marker is designated in Order R-464. The horizontal limits of the Tubb Gas Pool shall be the area as described in Exhibit "A", attached hereto and made a part hereof.

(2) That the Byers-Queen Gas Pool, heretofore created, shall have vertical limits which include all of the Queen formation. The horizontal limits of the Byers-Queen Gas Pool shall be the area as described in Exhibit "B", attached hereto and made a part hereof.

(3) That the Justis Gas Pool, heretofore created, shall have vertical limits which extend from the top of the Glorieta formation to a point 200 feet immediately below the Glorieta datum. The horizontal limits of the Justis Gas Pool shall be the area as described in Exhibit "C", attached hereto and made a part hereof.

(4) That special pool rules applicable to the Tubb Gas Pool be, and the same hereby are promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE TUBB GAS POOL

Well Spacing and Acreage Requirements for Drilling Tracts.

RULE 1. Any well drilled a distance of one mile or more outside the boundary of the Tubb Gas Pool shall be classified as a wildcat well. Any well drilled less than one mile outside the boundary of the Tubb Gas Pool shall be spaced, drilled, operated and prorated in accordance with the regulations in effect in the Tubb Gas Pool.

RULE 2. Each well drilled or recompleted within the Tubb Gas Pool on a standard proration unit after the effective date of this rule shall be drilled not closer than 660 feet to any boundary line of the tract nor closer than 330 feet to a quarter-quarter section line or subdivision inner boundary line. Any well drilled to and producing from the Tubb Gas Pool prior to the effective date of this order at a location conforming to the spacing requirements effective at the time said well was drilled shall be considered to be located in conformance with this rule.

RULE 3. The Secretary-Director of the Commission shall have authority to grant exception to the requirements of Rule 2 without notice and hearing where a verified application therefor has been filed in due form and the necessity for the unorthodox location is based on topographical conditions or is occasioned by the recompletion of a well previously drilled to another horizon.

Applicants shall furnish all operators within a 1960-foot radius of the subject well a copy of the application to the Commission, and applicant shall include with his application a list of names and addresses of all operators within such radius, together with a stipulation that proper notice has been given said operators at the addresses given. The Secretary-Director of the Commission shall wait at least 20 days before approving any such unorthodox location, and shall approve such unorthodox location only in the absence of objection of any offset operators. In the event an operator objects to the unorthodox location the Commission shall consider the matter only after proper notice and hearing.

RULE 4. The provisions of Statewide Rule 104, Paragraph (k), shall not apply to the Tubb Gas Pool located in Lea County, New Mexico.

GAS PRORATION

RULE 5. (a) The acreage allocated to a gas well for proration purposes shall be known as the gas proration unit for that well. For the purpose of gas allocation in the Tubb Gas Pool, a standard proration unit shall consist of between 158 and 162 contiguous surface acres substantially in the form of a square which shall be a legal subdivision (quarter-section) of the U. S. Public Land Surveys with a well located at least 660 feet from the nearest property lines;

(b) The allowable production from any non-standard gas proration unit as compared with the allowable production therefrom if such tract were a standard unit shall be in the ratio of the area of such non-standard proration unit expressed in acres to the area of 160 acres. Any gas proration unit containing between 158 and 162 acres shall be considered to contain 160 acres for the purpose of computing allowables.

(c) A non-standard gas proration unit of less than 160 acres may be formed after notice and hearing by the Commission, or by administrative approval under the provisions of Paragraph (d) of this Rule. Non-standard gas proration units of more than 160 acres may be formed only after notice and hearing by the Commission.

(d) The Secretary-Director of the Commission shall have authority to grant an exception to Rule 5 (a) without Notice and Hearing where a verified application has been filed in due form and where the following facts exist and the following provisions are complied with;

1. The non-standard gas proration unit consists of contiguous quarter-quarter sections and/or lots.

2. The non-standard gas proration unit lies wholly within a single governmental section.

3. The entire non-standard gas proration unit may reasonably be presumed to be productive of gas from the Tubb Gas Pool.

4. The length or width of the non-standard gas proration unit does not exceed 2640 feet.

5. The applicant presents written consent in the form of waivers from (a) all operators owning interests in the quarter section in which any part of the non-standard gas proration unit is situated and which acreage is not included in said non-standard gas proration unit, and (b) all operators owning interests within 1500 feet of the well to which such gas proration unit is proposed to be allocated.

6. In lieu of sub-paragraph 5 of this rule, the applicant may furnish proof of the fact that said offset operators were notified by registered mail of his intent to form such non-standard gas proration unit. The Secretary-Director of the Commission may approve the application if, after a period of 30 days following the mailing of said notice, no operator has made objection to formation of such non-standard gas proration unit.

RULE 6. (a) The Commission after notice and hearing, shall consider the nominations of gas purchasers from the Tubb Gas Pool and other relevant data and shall fix the allowable production of the Tubb Gas Pool.

RULE 7. At least 30 days prior to the beginning of each gas proration period the Commission shall hold a hearing after due notice has been given. The Commission shall cause to be submitted by each gas purchaser its "Preliminary Nominations" of the amount of gas which each in good faith actually desires to purchase within the ensuing proration period, by months, from the Tubb Gas Pool. The Commission shall consider the "Preliminary Nominations" of purchasers, actual production, and such other factors as may be deemed applicable in determining the amount of gas that may be produced without waste within the ensuing proration period. "Preliminary Nominations" shall be submitted on a form prescribed by the Commission.

RULE 8. In the event a gas purchaser's market shall have increased or decreased, he may file with the Commission prior to the 10th day of the month a "supplemental" nomination, showing the amount of gas he actually in good faith desires to purchase during the ensuing proration month from the Tubb Gas Pool. The Commission shall hold a public hearing between the 13th and 20th days of each month to determine the reasonable market demand for gas for the ensuing proration month, and shall issue a proration schedule setting out the amount of gas which each well may produce during the ensuing proration month.

"Supplemental Nominations" shall be submitted on a form prescribed by the Commission.

Included in the monthly proration schedule shall be:

- (a) A summary of the total pool allocation for that month showing nominations, and adjustments made for underage or overage applied from a previous month,
- (b) A tabulation of the net allowable, and production for the second preceding month together with a cumulative overage or underage computation,
- (c) A tabulation of the current and net allowables for the preceding month,
- (d) A tabulation of current monthly allowables for the ensuing proration month,
- (e) A tabulation of the acreage assigned each well together with a tabulation of the acreage factor assigned each well. For the purpose of allocation a proration unit of 160 acres shall be assigned an acreage factor of 1.00; a proration unit of 80 acres a factor of 0.50, etc.

The allowable assigned to any well capable of producing its normal gas allowable in the Tubb Gas Pool shall be the same proportion of the total remaining allowable allocated to said pool after deducting allowables of marginal wells that the number of acres contained in the gas proration unit for that well bears to the acreage contained in all gas proration units assigned to non-marginal wells in the Tubb Gas Pool.

The Commission shall include in the proration schedule the gas wells in the Tubb Gas Pool delivering to a gas transportation facility, or lease gathering system, and shall include in the proration schedule of the Tubb Gas Pool any well which it finds is being unreasonably discriminated against through denial of access to a gas transportation facility, which is reasonably capable of handling the type of gas produced by such well. The total allowable to be allocated to the pool each month shall be equal to the sum of the preliminary or supplemental nominations (whichever is applicable), together with any adjustment which the Commission deems advisable.

If during a proration month the acreage assigned a well is increased by commission order or as otherwise provided in this order, the increased allowable assigned the gas proration unit for the well shall be effective on the first day of the month following approval of such increase by the Commission.

BALANCING OF PRODUCTION

RULE 9. Underproduction: The dates 7:00 a. m., January 1, and 7:00 a. m., July 1, shall be known as balancing dates and the periods of time bounded by these dates shall be known as gas proration periods. The amount of current gas allowable remaining unproduced at the end of each proration period shall be carried forward to and may be produced during the next succeeding proration period in addition to the normal gas allowable for such succeeding period; but whatever amount thereof is not made up within the first succeeding proration period shall be cancelled.

If it appears that such continued underproduction has resulted from inability of the well to produce its allowable, it may be classified as a marginal well and its allowable reduced to the well's ability to produce.

If at the end of a proration period a marginal well has produced more than the total allowable assigned a non-marginal unit of corresponding size, the marginal well shall be reclassified as a non-marginal well and its allowable adjusted accordingly.

If during a proration period a marginal well is reworked or re-completed in such a manner that its productive capacity is increased to the extent that it should be reclassified as a non-marginal well, the reclassification shall be effective on the first day of the proration month following the date of recompletion.

The Proration Manager may reclassify a well at any time if production data or deliverability tests reflect the need for such a reclassification.

RULE 10. Overproduction: A well which has produced a greater amount of gas than was allowed during a given proration period shall have its allowable for the first succeeding proration period reduced by the amount of such overproduction and such overproduction shall be made up within the first succeeding proration period. If, at any time, a well is overproduced an amount equaling six times its current monthly allowable, it shall be shut-in until it is in balance.

The Commission may allow overproduction to be made up at a lesser rate than would be the case if the well were completely shut-in upon a showing at public hearing after due notice that complete shut-in of the well would result in material damage to the well.

GRANTING OF ALLOWABLES

RULE 11. No gas well shall be given an allowable until Form C-104 and Form C-110 have been filed together with a plat showing acreage attributed to said well and the locations of all wells on the lease.

RULE 12. Allowables to newly completed gas wells shall commence on the date of connection to a gas transportation facility, as determined from an affidavit furnished to the Commission (Box 2045, Hobbs, New Mexico) by the purchaser, or the date of filing of Form C-104, Form C-110 and the plat described above, or the date of application for a non-standard gas proration unit as provided in Rule 5, whichever date is the later.

RULE 13. The monthly gas production from each well shall be metered separately and the gas production therefrom shall be reported to the Commission on Form C-115 so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the gas produced.

Each purchaser or taker of gas in the Tubb Gas Pool shall submit a report to the Commission so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was purchased or taken.

Such report shall be filed on either Form C-111 or Form C-114 (whichever is applicable) with the wells being listed in approximately the same order as they are listed on the proration schedule.

Forms C-111 and C-114 referred to herein shall be submitted in duplicate, the original being sent to the Commission at Box 371, Santa Fe, New Mexico, the other copy being sent to Box 2045, Hobbs, New Mexico.

Form C-115 shall be submitted in accordance with Rule 114 of the Commission's Rules and Regulations.

The full production of gas from each well shall be charged against the well's allowable regardless of what disposition has been made of the gas; provided, however, that gas used on the lease for consumption in lease houses, treaters, compressors, combustion engines and other similar lease equipment shall not be charged against the well's allowable; further, the production of intermediate or low-pressure gas derived from the staging of the well fluids need not be charged against the well's gas allowable, provided that said intermediate or low-pressure gas is utilized in accordance with the provisions of Order R-464.

RULE 14. The term "gas purchaser" as used in these rules, shall mean any "taker" of gas either at the wellhead or at any point on the lease where connection is made for gas transportation or utilization. It shall be the responsibility of said "taker" to submit a nomination.

RULE 15. No gas, either dry gas or casinghead gas, produced from the Tubb Gas Pool shall be flared or vented.

PROVIDED FURTHER, After the effective date of this order no well shall be completed or recompleted in such a manner that the producing zone of the Tubb Gas Pool and the producing zone of any other common source of supply are both open in the same well bore unless specifically authorized by order of the Commission after notice and hearing. Dual completions may be effected in accordance with the provisions of Rule 112-A of the Commission's Rules and Regulations.

Any well presently completed in such a manner that the well bore is open to more than one common source of supply shall be assigned to the applicable pool by the Commission staff. Any operator of any well completed in such a manner shall submit to the Commission office at Hobbs, New Mexico, all pertinent well completion data on Form C-105, together with electric logs, sample logs, drill stem test records, etc. All data shall be submitted in duplicate on or before May 15, 1955. Failure of any operator to submit the required data will result in cancellation of Form C-110 and subsequent cancellation of allowables.

If the operator is not satisfied with the well's assignment he may apply for a hearing on the matter in accordance with Commission Rule 1203.

PROVIDED FURTHER, That in filing Form C-101 "Notice of Intention to Drill or Recomplete" all operators shall strictly comply with the provisions of Rule 104, paragraph (e).

PROVIDED FURTHER, That failure to comply with the provisions of this order or the rules contained herein shall result in the cancellation of allowable assigned to the affected well. No further allowable shall be assigned to the affected well until all rules and regulations are complied with. The Proration Manager shall notify the operator of the well and the purchaser in writing of the date of allowable cancellation and the reason therefor.

PROVIDED FURTHER, That special pool rules applicable to the Byers-Queen Gas Pool be, and the same hereby are promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE BYERS-QUEEN GAS POOL

Well Spacing and Acreage Requirements for Drilling Tracts.

RULE 1. Any well drilled a distance of one mile or more outside the boundary of the Byers-Queen Gas Pool shall be classified as a wildcat well. Any well drilled less than one mile outside the boundary of the Byers-Queen Gas Pool shall be spaced, drilled, operated and prorated in accordance

with the regulations in effect in the Byers-Queen Gas Pool,

RULE 2. Each well drilled or recompleted within the Byers-Queen Gas Pool on a standard proration unit after the effective date of this rule shall be drilled not closer than 660 feet to any boundary line of the tract nor closer than 330 feet to a quarter-quarter section line or subdivision inner boundary line. Any well drilled to and producing from the Byers-Queen Gas Pool prior to the effective date of this order at a location conforming to the spacing requirements effective at the time said well was drilled shall be considered to be located in conformance with this rule.

RULE 3. The Secretary-Director of the Commission shall have authority to grant exception to the requirements to Rule 2 without notice and hearing where a verified application therefor has been filed in due form and the necessity for the unorthodox location is based on topographical conditions or is occasioned by the recompletion of a well previously drilled to another horizon.

Applicants shall furnish all operators within a 1980-foot radius of the subject well a copy of the application to the Commission, and applicant shall include with his application a list of names and addresses of all operators within such radius, together with a stipulation that proper notice has been given said operators at the addresses given. The Secretary-Director of the Commission shall wait at least 20 days before approving any such unorthodox location, and shall approve such unorthodox location only in the absence of objection of any offset operators. In the event an operator objects to the unorthodox location the Commission shall consider the matter only after proper notice and hearing.

RULE 4. The provisions of Statewide Rule 104, Paragraph (k), shall not apply to the Byers-Queen Gas Pool located in Lea County, New Mexico.

GAS PRORATION

RULE 5. (a) The acreage allocated to a gas well for proration purposes shall be known as the gas proration unit for that well. For the purpose of gas allocation in the Byers-Queen Gas Pool, a standard proration unit shall consist of between 158 and 162 contiguous surface acres substantially in the form of a square which shall be a legal subdivision (quarter section) of the U. S. Public Land Surveys with a well located at least 660 feet from the nearest property lines;

(b) The allowable production from any non-standard gas proration unit as compared with the allowable production therefrom if such tract were a standard unit shall be in the ratio of the area of such non-standard proration unit expressed in acres to the area of 160 acres. Any gas proration unit containing between 158 and 162 acres shall be considered to contain 160 acres for the purpose of computing allowables.

(c) A non-standard gas proration unit of less than 160 acres may be formed after notice and hearing by the Commission, or by administrative approval under the provisions of Paragraph (b) of this Rule. Non-standard gas proration units of more than 160 acres may be formed only after notice and hearing by the Commission.

(d) The Secretary-Director of the Commission shall have authority to grant an exception to Rule 5 (a) without Notice and Hearing where a verified application has been filed in due form and where the following facts exist and the following provisions are complied with;

1. The non-standard gas proration unit consists of contiguous quarter-quarter sections and/or lots.

2. The non-standard gas proration unit lies wholly within a single governmental section.

3. The entire non-standard gas proration unit may reasonably be presumed to be productive of gas from the Byers-Queen Gas Pool.

4. The length or width of the non-standard gas proration unit does not exceed 2640 feet.

5. The applicant presents written consent in the form of waivers from (a) all operators owning interests in the quarter section in which any part of the non-standard gas proration unit is situated and which acreage is not included in said non-standard gas proration unit, and (b) all operators owning interests within 1500 feet of the well to which such gas proration unit is proposed to be allocated.

6. In lieu of sub-paragraph 5 of this rule, the applicant may furnish proof of the fact that said offset operators were notified by registered mail of his intent to form such non-standard gas proration unit. The Secretary-Director of the Commission may approve the application if, after a period of 30 days following the mailing of said notice, no operator has made objection to formation of such non-standard gas proration unit.

RULE 6. (a) The Commission after notice and hearing, shall consider the nominations of gas purchasers from the Byers-Queen Gas Pool and other relevant data and shall fix the allowable production of the Byers-Queen Gas Pool.

RULE 7. At least 30 days prior to the beginning of each gas proration period the Commission shall hold a hearing after due notice has been given. The Commission shall cause to be submitted by each gas purchaser its "Preliminary Nominations" of the amount of gas which each in good faith actually desires to purchase within the ensuing proration period, by months, from the Byers-Queen Gas Pool. The Commission shall consider the "Preliminary Nominations" of purchasers, actual production, and such other

factors as may be deemed applicable in determining the amount of gas that may be produced without waste within the ensuing proration period. "Preliminary Nominations" shall be submitted on a form prescribed by the Commission.

RULE 8. In the event a gas purchaser's market shall have increased or decreased, he may file with the Commission prior to the 10th day of the month a "supplemental" nomination, showing the amount of gas he actually in good faith desires to purchase during the ensuing proration month from the Byers-Queen Gas Pool. The Commission shall hold a public hearing between the 13th and 20th days of each month to determine the reasonable market demand for gas for the ensuing proration month, and shall issue a proration schedule setting out the amount of gas which each well may produce during the ensuing proration month.

"Supplemental Nominations" shall be submitted on a form prescribed by the Commission.

Included in the monthly proration schedule shall be:

- (a) A summary of the total pool allocation for that month showing nominations, and adjustments made for underage or overage applied from a previous month,
- (b) A tabulation of the net allowable, and production for the second preceding month together with a cumulative overage or underage computation,
- (c) A tabulation of the current and net allowables for the preceding month,
- (d) A tabulation of current monthly allowables for the ensuing proration month,
- (e) A tabulation of the acreage assigned each well together with a tabulation of the acreage factor assigned each well. For the purpose of allocation a proration unit of 160 acres shall be assigned an acreage factor of 1.00; a proration unit of 80 acres a factor of 0.50, etc.

The allowable assigned to any well capable of producing its normal gas allowable in the Byers-Queen Gas Pool shall be the same proportion of the total remaining allowable allocated to said pool after deducting allowables of marginal wells that the number of acres contained in the gas proration unit for that well bears to the acreage contained in

all gas proration units assigned to non-marginal wells in the Byers-Queen Gas Pool.

The Commission shall include in the proration schedule the gas wells in the Byers-Queen Gas Pool delivering to a gas transportation facility, or lease gathering system, and shall include in the proration schedule of the Byers-Queen Gas Pool any well which it finds is being unreasonably discriminated against through denial of access to a gas transportation facility, which is reasonably capable of handling the type of gas produced by such well. The total allowable to be allocated to the pool each month shall be equal to the sum of the preliminary or supplemental nominations (whichever is applicable), together with any adjustment which the Commission deems advisable.

If during a proration month the acreage assigned a well is increased by commission order or as otherwise provided in this order, the increased allowable assigned the gas proration unit for the well shall be effective on the first day of the month following approval of such increase by the Commission.

BALANCING OF PRODUCTION

RULE 9. Underproduction: The dates 7:00 a. m., January 1, and 7:00 a. m., July 1, shall be known as balancing dates and the periods of time bounded by these dates shall be known as gas proration periods. The amount of current gas allowable remaining unproduced at the end of each proration period shall be carried forward to and may be produced during the next succeeding proration period in addition to the normal gas allowable for such succeeding period; but whatever amount thereof is not made up within the first succeeding proration period shall be cancelled.

If it appears that such continued underproduction has resulted from inability of the well to produce its allowable, it may be classified as a marginal well and its allowable reduced to the well's ability to produce.

If at the end of a proration period a marginal well has produced more than the total allowable assigned a non-marginal unit of corresponding size, the marginal well shall be reclassified as a non-marginal well and its allowable adjusted accordingly.

If during a proration period a marginal well is reworked or re-completed in such a manner that its productive capacity is increased to the extent that it should be reclassified as a non-marginal well, the reclassification shall be effective on the first day of the proration month following the date of recompletion.

The Proration Manager may reclassify a well at any time if production data or deliverability tests reflect the need for such a reclassification.

RULE 10. Overproduction: A well which has produced a greater amount of gas than was allowed during a given proration period shall have its allowable for the first succeeding proration period reduced by the amount of such overproduction and such overproduction shall be made up within the first succeeding proration period. If, at any time, a well is overproduced an amount equaling six times its current monthly allowable, it shall be shut-in until it is in balance.

The Commission may allow overproduction to be made up at a lesser rate than would be the case if the well were completely shut-in upon a showing at public hearing after due notice that complete shut-in of the well would result in material damage to the well.

GRANTING OF ALLOWABLES

RULE 11. No gas well shall be given an allowable until Form C-104 and Form C-110 have been filed together with a plat showing acreage attributed to said well and the locations of all wells on the lease.

RULE 12. Allowables to newly completed gas wells shall commence on the date of connection to a gas transportation facility, as determined from an affidavit furnished to the Commission (Box 2045, Hobbs, New Mexico) by the purchaser, or the date of filing of Form C-104, Form C-110 and the plat described above, or the date of application for a non-standard gas proration unit as provided in Rule 5.

RULE 13. The monthly gas production from each well shall be metered separately and the gas production therefrom shall be reported to the Commission on Form C-115 so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the gas produced.

Each purchaser or taker of gas in the Byers-Queen Gas Pool shall submit a report to the Commission so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was purchased or taken.

Such report shall be filed on either Form C-111 or Form C-114 (whichever is applicable) with the wells being listed in approximately the same order as they are listed on the proration schedule.

Forms C-111 and C-114 referred to herein shall be submitted in duplicate, the original being sent to the Commission at Box 871, Santa Fe, New Mexico, the other copy being sent to Box 2045, Hobbs, New Mexico.

Form C-115 shall be submitted in accordance with Rule 1114 of the Commission's Rules and Regulations.

The full production of gas from each well shall be charged against the well's allowable regardless of what disposition has been made of the gas; provided, however, that gas used on the lease for consumption in lease houses, treaters, compressors, combustion engines and other similar lease equipment shall not be charged against the well's allowable.

DEFINITIONS

RULE 14. The term "gas purchaser" as used in these rules, shall mean any "taker" of gas either at the wellhead or at any point on the lease where connection is made for gas transportation or utilization. It shall be the responsibility of said "taker" to submit a nomination.

RULE 15. No gas, either dry gas or casinghead gas, produced from the Byers-Queen Gas Pool shall be flared or vented.

PROVIDED FURTHER, After the effective date of this order no well shall be completed or recompleted in such a manner that the producing zone of the Byers-Queen Gas Pool and the producing zone of any other common source of supply are both open in the same well bore unless specifically authorized by order of the Commission after notice and hearing. Dual completions may be effected in accordance with the provisions of Rule 112-A of the Commission's Rules and Regulations.

Any well presently completed in such a manner that the well bore is open to more than one common source of supply shall be assigned to the applicable pool by the Commission staff. Any operator of any well completed in such a manner shall submit to the Commission office at Hobbs, New Mexico, all pertinent well completion data on Form C-105, together with electric logs, sample logs, drill stem test records, etc. All data shall be submitted in duplicate on or before April 15, 1955. Failure of any operator to submit the required data will result in cancellation of Form C-110 and subsequent cancellation of allowables.

If the operator is not satisfied with the well's assignment he may apply for a hearing on the matter in accordance with Commission Rule 1203.

PROVIDED FURTHER, That in filing Form C-101 "Notice of Intention to Drill or Recomplete" all operators shall strictly comply with the provisions of Rule 104, paragraph (e).

PROVIDED FURTHER, That failure to comply with the provisions of this order or the rules contained herein shall result in the cancellation of allowable assigned to the affected well. No further allowable shall be assigned to the affected well until all rules and regulations are complied with. The Proration Manager shall notify the operator of the well and the purchaser in writing of the date of allowable cancellation and the reason therefor.

Forms C-115 shall be submitted in accordance with Rule 1114 of the Commission's Rules and Regulations.

The full production of gas from each well shall be charged against the well's allowable regardless of what disposition has been made of the gas; provided, however, that gas used on the lease for consumption in lease houses, treaters, compressors, combustion engines and other similar lease equipment shall not be charged against the well's allowable.

DEFINITIONS

RULE 14. The term "gas purchaser" as used in these rules, shall mean any "taker" of gas either at the wellhead or at any point on the lease where connection is made for gas transportation or utilization. It shall be the responsibility of said "taker" to submit a nomination.

RULE 15. No gas, either dry gas or casinghead gas, produced from the Byers-Queen Gas Pool shall be flared or vented.

PROVIDED FURTHER, After the effective date of this order no well shall be completed or recompleted in such a manner that the producing zone of the Byers-Queen Gas Pool and the producing zone of any other common source of supply are both open in the same well bore unless specifically authorized by order of the Commission after notice and hearing. Dual completions may be effected in accordance with the provisions of Rule 112-A of the Commission's Rules and Regulations.

Any well presently completed in such a manner that the well bore is open to more than one common source of supply shall be assigned to the applicable pool by the Commission staff. Any operator of any well completed in such a manner shall submit to the Commission office at Hobbs, New Mexico, all pertinent well completion data on Form C-105, together with electric logs, sample logs, drill stem test records, etc. All data shall be submitted in duplicate on or before May 15, 1955. Failure of any operator to submit the required data will result in cancellation of Form C-110 and subsequent cancellation of allowables.

If the operator is not satisfied with the well's assignment he may apply for a hearing on the matter in accordance with Commission Rule 1203.

PROVIDED FURTHER, That in filing Form C-101 "Notice of Intention to Drill or Recomplete" all operators shall strictly comply with the provisions of Rule 104, paragraph (e).

PROVIDED FURTHER, That failure to comply with the provisions of this order or the rules contained herein shall result in the cancellation of allowable assigned to the affected well. No further allowable shall be assigned to the affected well until all rules and regulations are complied with. The Proration Manager shall notify the operator of the well and the purchaser in writing of the date of allowable cancellation and the reason therefor.

PROVIDED FURTHER, That special pool rules applicable to the Justis Gas Pool be, and the same hereby are promulgated as follows:

**SPECIAL RULES AND REGULATIONS
FOR THE JUSTIS GAS POOL**

Well Spacing and Acreage Requirements for Drilling Tracts.

RULE 1. Any well drilled a distance of one mile or more outside the boundary of the Justis Gas Pool shall be classified as a wildcat well. Any well drilled less than one mile outside the boundary of the Justis Gas Pool shall be spaced, drilled, operated and prorated in accordance with the regulations in effect in the Justis Gas Pool.

RULE 2. Each well drilled or recompleted within the Justis Gas Pool on a standard proration unit after the effective date of this rule shall be drilled not closer than 660 feet to any boundary line of the tract nor closer than 330 feet to a quarter-quarter section line or subdivision inner boundary line. Any well drilled to and producing from the Justis Gas Pool prior to the effective date of this order at a location conforming to the spacing requirements effective at the time said well was drilled shall be considered to be located in conformance with this rule.

RULE 3. The Secretary-Director of the Commission shall have authority to grant exception to the requirements of Rule 2 without notice and hearing where a verified application therefor has been filed in due form and the necessity for the unorthodox location is based on topographical conditions or is occasioned by the recompletion of a well previously drilled to another horizon.

Applicants shall furnish all operators within a 1980-foot radius of the subject well a copy of the application to the Commission, and applicant shall include with his application a list of names and addresses of all operators within such radius, together with a stipulation that proper notice has been given said operators at the addresses given. The Secretary-Director of the Commission shall wait at least 20 days before approving any such unorthodox location, and shall approve such unorthodox location only in the absence of objection of any offset operators. In the event an operator objects to the unorthodox location the Commission shall consider the matter only after proper notice and hearing.

RULE 4. The provisions of Statewide Rule 104, Paragraph (k), shall not apply to the Justis Gas Pool located in Lea County, New Mexico.

GAS PRORATION

RULE 5. (a) The acreage allocated to a gas well for proration purposes shall be known as the gas proration unit for that well. For the purpose of gas allocation in the Justis Gas Pool, a standard proration unit shall consist of between 158 and 162 contiguous surface acres substantially in the form of a square which shall be a legal subdivision (quarter section) of the U. S. Public Land Surveys with a well located at least 660 feet from the nearest property lines;

(b) The allowable production from any non-standard gas proration unit as compared with the allowable production therefrom if such tract were a standard unit shall be in the ratio of the area of such non-standard proration unit expressed in acres to the area of 160 acres. Any gas proration unit containing between 158 and 162 acres shall be considered to contain 160 acres for the purpose of computing allowables.

(c) A non-standard gas proration unit of less than 160 acres may be formed after notice and hearing by the Commission, or by administrative approval under the provisions of Paragraph (d) of this Rule. Non-standard gas proration units of more than 160 acres may be formed after notice and hearing by the Commission.

(d) The Secretary-Director of the Commission shall have authority to grant an exception to Rule 5 (a) without Notice and Hearing where a verified application has been filed in due form and where the following facts exist and the following provisions are complied with;

1. The non-standard gas proration unit consists of contiguous quarter-quarter sections and/or lots.

2. The non-standard gas proration unit lies wholly within a single governmental section.

3. The entire non-standard gas proration unit may reasonably be presumed to be productive of gas from the Justis Gas Pool.

4. The length or width of the non-standard gas proration unit does not exceed 2640 feet.

5. The applicant presents written consent in the form of waivers from (a) all operators owning interests in the quarter-section in which any part of the non-standard gas proration unit is situated and which acreage is not included in said non-standard gas proration unit, and (b) all operators owning interests within 1500 feet of the well to which such gas proration unit is proposed to be allocated.

6. In lieu of sub-paragraph 5 of this rule, the applicant may furnish proof of the fact that said offset operators were notified by registered mail of his intent to form such non-standard gas proration unit.

The Secretary of the Commission may approve the application if, after a period of 30 days following the mailing of said notice, no operator has made objection to formation of such non-standard gas proration unit.

RULE 6. (a) The Commission after notice and hearing, shall consider the nominations of gas purchasers from the Justis Gas Pool and other relevant data and shall fix the allowable production of the Justis Gas Pool.

RULE 7. At least 30 days prior to the beginning of each gas proration period the Commission shall hold a hearing after due notice has been given. The Commission shall cause to be submitted by each gas purchaser its "Preliminary Nominations" of the amount of gas which each in good faith actually desires to purchase within the ensuing proration period, by months, from the Justis Gas Pool. The Commission shall consider the "Preliminary Nominations" of purchasers, actual production, and such other factors as may be deemed applicable in determining the amount of gas that may be produced without waste within the ensuing proration period. "Preliminary Nominations" shall be submitted on a form prescribed by the Commission.

RULE 8. In the event a gas purchaser's market shall have increased or decreased, he may file with the Commission prior to the 10th day of the month a "supplemental" nomination, showing the amount of gas he actually in good faith desires to purchase during the ensuing proration month from the Justis Gas Pool. The Commission shall hold a public hearing between the 13th and 20th days of each month to determine the reasonable market demand for gas for the ensuing proration month, and shall issue a proration schedule setting out the amount of gas which each well may produce during the ensuing proration month.

"Supplemental Nominations" shall be submitted on a form prescribed by the Commission.

Included in the monthly proration schedule shall be:

- (a) A summary of the total pool allocation for that month showing nominations, and adjustments made for underage or overage applied from a previous month,
- (b) A tabulation of the net allowable, and production for the second preceding month together with a cumulative overage or underage computation,
- (c) A tabulation of the current and net allowables for the preceding month,
- (d) A tabulation of current monthly allowables for the ensuing proration month,

- (e) A tabulation of the acreage assigned each well together with a tabulation of the acreage factor assigned each well. For the purpose of allocation a proration unit of 160 acres shall be assigned an acreage factor of 1.00; a proration unit of 80 acres a factor of 0.50, etc.

The allowable assigned to any well capable of producing its normal gas allowable in the Justis Gas Pool shall be the same proportion of the total remaining allowable allocated to said pool after deducting allowables of marginal wells that the number of acres contained in the gas proration unit for that well bears to the acreage contained in all gas proration units assigned to non-marginal wells in the Justis Gas Pool.

The Commission shall include in the proration schedule the gas wells in the Justis Gas Pool delivering to a gas transportation facility, or lease gathering system, and shall include in the proration schedule of the Justis Gas Pool any well which it finds is being unreasonably discriminated against through denial of access to a gas transportation facility, which is reasonably capable of handling the type of gas produced by such well. The total allowable to be allocated to the pool each month shall be equal to the sum of the preliminary or supplemental nominations (whichever is applicable), together with any adjustment which the Commission deems advisable.

If during a proration month the acreage assigned a well is increased by commission order or as otherwise provided in this order the increased allowable assigned the gas proration unit for the well shall be effective on the first day of the month following approval of such increase by the Commission.

BALANCING OF PRODUCTION

RULE 9. Underproduction: The dates 7:00 a. m., January 1, and 7:00 a. m., July 1, shall be known as balancing dates and the periods of time bounded by these dates shall be known as gas proration periods. The amount of current gas allowable remaining unproduced at the end of each proration period shall be carried forward to and may be produced during the next succeeding proration period in addition to the normal gas allowable for such succeeding period; but whatever amount thereof is not made up within the first succeeding proration period shall be cancelled.

If it appears that such continued underproduction has resulted from inability of the well to produce its allowable, it may be classified as a marginal well and its allowable reduced to the well's ability to produce.

If at the end of a proration period a marginal well has produced more than the total allowable assigned a non-marginal unit of corresponding size, the marginal well shall be reclassified as a non-marginal well and its allowable adjusted accordingly.

If during a proration period a marginal well is reworked or re-completed in such a manner that its productive capacity is increased to the extent that it should be reclassified as a non-marginal well, the reclassification shall be effective on the first day of the proration month following the date of recompletion.

The Proration Manager may reclassify a well at any time if production data or deliverability tests reflect the need for such a reclassification.

RULE 10. Overproduction: A well which has produced a greater amount of gas than was allowed during a given proration period shall have its allowable for the first succeeding proration period reduced by the amount of such overproduction and such overproduction shall be made up within the first succeeding proration period. If, at any time, a well is overproduced an amount equaling six times its current monthly allowable, it shall be shut-in until it is in balance.

The Commission may allow overproduction to be made up at a lesser rate than would be the case if the well were completely shut-in upon a showing at public hearing after due notice that complete shut-in of the well would result in material damage to the well.

GRANTING OF ALLOWABLES

RULE 11. No gas well shall be given an allowable until Form C-104 and Form C-110 have been filed together with a plat showing acreage attributed to said well and the locations of all wells on the lease.

RULE 12. Allowables to newly completed gas wells shall commence on the date of connection to a gas transportation facility, as determined from an affidavit furnished to the Commission (Box 2045, Hobbs, New Mexico) by the purchaser, or the date of filing of Form C-104, Form C-110 and the plat described above, or the date of application for a non-standard gas proration unit as provided in Rule 5.

RULE 13. The monthly gas production from each well shall be metered separately and the gas production therefrom shall be reported to the Commission on Form C-115 so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was produced. The operator shall show on such report what disposition has been made of the gas produced.

Each purchaser or taker of gas in the Justis Gas Pool shall submit a report to the Commission so as to reach the Commission on or before the 20th day of the month next succeeding the month in which the gas was purchased or taken.

Such report shall be filed on either Form C-111 or Form C-114 (whichever is applicable) with the wells being listed in approximately the same order as they are listed on the proration schedule.

Forms C-111 and C-114 referred to herein shall be submitted in duplicate, the original being sent to the Commission at Box 871, Santa Fe, New Mexico, the other copy being sent to Box 2045, Hobbs, New Mexico.

Form C-115 shall be submitted in accordance with Rule 1114 of the Commission's Rules and Regulations.

The full production of gas from each well shall be charged against the well's allowable regardless of what disposition has been made of the gas; provided, however, that gas used on the lease for consumption in lease houses, treaters, compressors, combustion engines and other similar lease equipment shall not be charged against the well's allowable.

RULE 14. The term "gas purchaser" as used in these rules, shall mean any "taker" of gas either at the wellhead or at any point on the lease where connection is made for gas transportation or utilization. It shall be the responsibility of said "taker" to submit a nomination.

RULE 15. No gas, either dry gas or casinghead gas, produced from the Justis Gas Pool shall be flared or vented.

PROVIDED FURTHER, After the effective date of this order no well shall be completed or recompleted in such a manner that the producing zone of the Justis Gas Pool and the producing zone of any other common source of supply are both open in the same well bore unless specifically authorized by order of the Commission after notice and hearing. Dual completions may be effected in accordance with the provisions of Rule 112-A of the Commission's Rules and Regulations.

Any well presently completed in such a manner that the well bore is open to more than one common source of supply shall be assigned to the applicable pool by the Commission staff. Any operator of any well completed in such a manner shall submit to the Commission office at Hobbs, New Mexico, all pertinent well completion data on Form C-105, together with electric logs, sample logs, drill stem test records, etc. All data shall be submitted in duplicate on or before May 15, 1955. Failure of any operator to submit the required data will result in cancellation of Form C-110 and subsequent cancellation of allowables.

If the operator is not satisfied with the well's assignment he may apply for a hearing on the matter in accordance with Commission Rule 1203.

PROVIDED FURTHER, That in filing Form C-101 "Notice of Intention to Drill or Recomplete" all operators shall strictly comply with the provisions of Rule 104, paragraph (e).

PROVIDED FURTHER, That failure to comply with the provisions of this order or the rules contained herein shall result in the cancellation of allowable assigned to the affected well. No further allowable shall be assigned to the affected well until all rules and regulations are complied with.

The Proration Manager shall notify the operator of the well and the purchaser in writing of the date of allowable cancellation and the reason therefor.

EXHIBIT "A"

Horizontal limits of the Tubb Gas Pool

TOWNSHIP 21 SOUTH, RANGE 37 EAST

All of Secs. 3, 9, 10, 15, 16, 17
All of Secs. 20 to 23, and 26 to 29 incl.
SW/4, & Lots 3, 4, 5, 6, 11, 12, 13, 14 of Sec. 2
SE/4, & Lots 1, 2, 7, 8, 9, 10, 15, 16 of Sec. 4
E/2 of Sec. 8
W/2 of Sec. 11
W/2 of Sec. 14
E/2 of Sec. 19
W/2 of Sec. 25
E/2 of Sec. 30
E/2 of Sec. 31
All of Secs. 32 to 36 incl.

TOWNSHIP 22 SOUTH, RANGE 37 EAST

All of Secs. 1 to 5 incl.
E/2 Sec. 6
All Secs. 8 to 16 incl.
E/2 Sec. 21
All Secs. 22 to 25 incl.

TOWNSHIP 22 SOUTH, RANGE 38 EAST

W/2 Sec. 6
W/2 Sec. 7
W/2 Sec. 18
All Secs. 19 & 30

EXHIBIT "B"

Horizontal limits of the Byers-Queen Gas Pool

TOWNSHIP 18 SOUTH, RANGE 38 EAST
All Secs. 29 to 32 incl.

-23-

Case No. 728

Order No. R-586

EXHIBIT "C"

Horizontal limits of the Justis Gas Pool

TOWNSHIP 25 SOUTH, RANGE 37 EAST

SW/4 Sec. 1

SE/4 Sec. 2

E/2 Sec. 11

W/2 Sec. 12

All Sec. 13

E/2 Sec. 14

E/2 Sec. 23

W/2 Sec. 24

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

John F. Simms

JOHN F. SIMMS, Chairman

E. S. Walker

E. S. WALKER, Member

W. B. Macey

W. B. MACEY, Member and Secretary

