

CASE 3515:

SOUTHEASTERN NEW MEXICO
NOMENCLATURE

CASE NO.
35 / 58

Application,
TRANSCRIPTS,
SMALL Exhibits
ETC.

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

February 15, 1967

Mr. Sim Christy IV
Hinkle, Bondurant & Christy
Attorneys at Law
P. O. Box 10
Roswell, New Mexico 88201

Re: Commission Order No. R-3182

Dear Mr. Christy:

Reference is made to Commission Order No. R-3182, entered January 25, 1967, in Case No. 3515.

Paragraph (b) of said order created the Northeast Bagley-Wolfcamp Pool and assigned, effective May 1, 1967, a bonus discovery allowable in the amount of 44,240 barrels of oil to your client's well, the Southern Natural Gas Company State "C" Well No. 1, located in Unit C of Section 11, Township 11 South, Range 33 East, Lea County, New Mexico.

The above figure of 44,240 barrels is the correct amount of bonus allowable the discovery well is eligible to receive. However, in computing the daily rate for production (44,240 barrels divided by 731 days) an error was made, and the rate should be 61 barrels per day rather than 66 barrels per day as stated in the order.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/DSN/ear

cc: Mr. Joe D. Ramey, Supervisor, District 1
Oil Conservation Commission, Hobbs, New Mexico

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. 3515
Order No. R-3182

THE APPLICATION OF THE OIL CONSERVATION
COMMISSION UPON ITS OWN MOTION FOR AN
ORDER CREATING AND EXTENDING CERTAIN POOLS
IN LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 18, 1967, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 25th day of January, 1967, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

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

(2) That Paragraph (a) of Case No. 3515 is the readvertising and the reCocketing of Paragraph (a) of Case No. 3503 to clarify the legal description of the location of the Vada-Pennsylvanian Pool comprising the NW/4 of Section 20, Township 9 South, Range 34 East, NMPM, Lea County, New Mexico. Inasmuch as no appearances were made nor objections received in Paragraph (a) of Case 3515, Paragraph (a) of Order No. R-3166 should be reaffirmed.

(3) That the evidence presently available indicates that the Southern Natural Gas Company State C Well No. 1, located in Unit C of Section 11, Township 11 South, Range 33 East, NMPM, Lea County, New Mexico, has discovered a previously unknown common source of supply in the Wolfcamp formation. Said well was

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CASE No. 3515

Order No. W-3182

completed November 14, 1966, with the top of the perforations at 8848 feet. That due to the possibility that further development in the subject area may prove that the subject well has not in fact discovered a new and separate common source of supply, but is an extension of nearby existing Wolfcamp production to the south, no oil discovery allowable for said well should be effective prior to May 1, 1967.

(4) That there is need for the creation of a new gas pool in Lea County, New Mexico, for the production of gas from the Devonian formation, said pool to bear the designation of West Ranger Lake-Devonian Gas Pool. Said West Ranger Lake-Devonian Gas Pool was discovered by Phillips Petroleum Company (Operator) and Texas Pacific Oil Company (Sub-operator) West Ranger Unit Well No. 2, located in Unit K of Section 23, Township 12 South, Range 34 East, NMPM. It was completed in the Devonian formation on August 13, 1966. The depth to casing shoe is 12,907 feet.

(5) That there is need for certain extensions to the Arkansas Junction-San Andres Pool, the North Bagley-Lower Pennsylvanian Pool, the North Bagley-Middle Pennsylvanian Pool, the Inbe-Pennsylvanian Pool, the Monument-Tubb Pool, the Scarborough Yates-Seven Rivers Pool, the North Vacuum-Abo Pool, and the Wants-Abo Pool, all in Lea County, New Mexico.

IT IS THEREFORE ORDERED:

(a) That Paragraph (a) of Order No. R-3166, entered in Case No. 3515 effective January 1, 1967, is hereby reaffirmed. Said Paragraph (a) created the Vada-Pennsylvanian Pool for Bough C production and defined said pool to comprise the NW/4 of Section 20, Township 9 South, Range 34 East, NMPM, Lea County, New Mexico, and assigned to the discovery well for said pool, the Midwest Oil Corporation Vada Lee Pruitt Well No. 1, located in Unit C of said Section 20, an oil discovery allowable in the amount of 48,960 barrels of oil to be assigned to said well at the rate of 67 barrels per day in accordance with Rule 509 of the Commission Rules and Regulations.

(b) That a new pool in Lea County, New Mexico, classified as an oil pool for Wolfcamp production, is hereby created and designated as the Northeast Bagley-Wolfcamp Pool, consisting of the following-described area:

TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM
Section 11: NW/4

CASE No. 3515

Order No. R-3182

(b) CONTINUED FROM PAGE 2

That the discovery well for said pool, the Southern Natural Gas Company State C Well No. 1, located in Unit C of Section 11, Township 11 South, Range 33 East, NMPM, is hereby authorized to receive an oil discovery allowable in the amount of 44,240 barrels effective May 1, 1967, in the absence of conclusive evidence by that date to the effect that the subject well is an extension of a previously known Wolfcamp pool. Said discovery allowable, if and when effective, shall be assigned at the rate of 66 barrels per day to be produced in accordance with Rule 509 of the Commission Rules and Regulations.

(c) That a new pool in Lea County, New Mexico, classified as a gas pool for Devonian production, is hereby created and designated as the West Ranger Lake-Devonian Gas Pool, consisting of the following-described area:

TOWNSHIP 12 SOUTH, RANGE 34 EAST, NMPM

Section 23: S/2

(d) That the Arkansas Junction-San Andres Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 18 SOUTH, RANGE 36 EAST, NMPM

Section 1: SW/4

(e) That the North Bagley-Lower Pennsylvanian Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM

Section 3: S/2

Section 10: SE/4

Section 11: SW/4

Section 16: NE/4

(f) That the North Bagley-Middle Pennsylvanian Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM

Section 10: SE/4

Section 16: SW/4

Section 17: SE/4

Section 22: W/2 and SE/4

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CASE No. 3515
Order No. R-3182

(g) That the Inbe-Pennsylvanian Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM
Section 24: NE/4

(h) That the Monument-Tubb Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 20 SOUTH, RANGE 37 EAST, NMPM
Section 14: E/2 NW/4

(i) That the Scarborough Yates-Seven Rivers Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 26 SOUTH, RANGE 37 EAST, NMPM
Section 31: W/2 W/2

(j) That the North Vacuum-Abo Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
Section 23: SE/4
Section 24: SW/4

(k) That the Wantz-Abo Pool in Lea County, New Mexico, as heretofore classified, defined, and described, is hereby extended to include therein:

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM
Section 26: SE/4

IT IS FURTHER ORDERED:

That the effective date of this order and all creations and extensions included herein shall be February 1, 1967.

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CASE No. 3515

Order No. R-3182

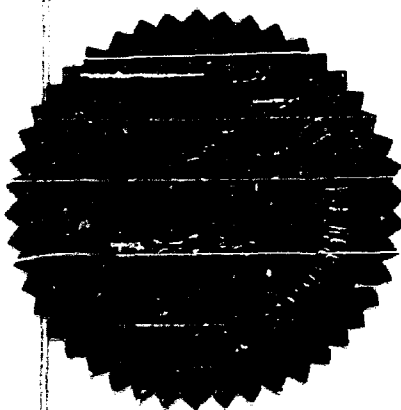
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


DAVID F. CARGO, Chairman


GUYTON B. HAYS, Member


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



END/

CLASS OF SERVICE

This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION TELEGRAM

W. P. MARSHALL, PRESIDENT

The filing time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination

SYMBOLS

DL=Day Letter
NL=Night Letter
LT=International Letter Telegram

1-104 DA302

D MDA124 PD 5 EXTRA=MIDLAND TEX 17 413P CST=
NEW MEXICO OIL CONSERVATION COMMISSION=
SANTA FE NMEX=

1967 JAN 17 PM 3 00

THIS IS TO ADVISE THAT WE CONCUR WITH SOUTHERN
NATURAL IN THEIR NEW POOL APPLICATION WOLF CAMP
SECTION 11-113-33E LEA COUNTY NEW MEXICO=

ROBERT W ARRENDIELL SUNSET INTERNATIONAL
PETROLEUM CORPORATION 201 WALL BLDG SUITE 308=

67 JAN 17 PM 3 00

11-113-33E 201 308.

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

CLASS OF SERVICE

This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION TELEGRAM

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LA046 DA116

1967 JAN 17 PM 11 02

D PHA007 PD=NYX PANPA TEX 17 1128A CST=
NEW MEXICO OIL & GAS CONSERVATION COMMISSION=
ATTN A L PORTER SANTA FE NMEX=

REFERENCE REQUEST OF SOUTHERN NATURAL GAS COMPANY FOR
NEW FIELD DESIGNATION THEIR STATE C-1 SECTION 11, 113,
R33E, LEA COUNTY CABOT CORPORATION DOES NOT OBJECT TO
ESTABLISHMENT OF NEW FIELD DESIGNATION=

W M SARGENT JR CABOT CORP=

C-1 11 113 R33E.

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

GOVERNOR
DAVID F. CARGO
CHAIRMAN

State of New Mexico
Oil Conservation Commission



LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

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

P. O. BOX 2088
SANTA FE

January 25, 1967

Mr. Sim Christy
Hinkle, Bondurant & Christy
Attorneys at Law
Post Office Box 10
Roswell, New Mexico

Re: Case No. 3515
Order No. R-3182
Applicant:
OCC & SOUTHERN NATURAL

Dear Sir:

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

Very truly yours,

A. L. Porter, Jr.
A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Carbon copy of order also sent to:

Hobbs OCC x
Artesia OCC x
Aztec OCC _____
Other _____

ALLOWABLE:

- (1) Consideration of the oil allowable for January, 1967;
- (2) Consideration of the allowable production of gas for January, 1967 from thirteen prorated pools in Lea, Eddy, and Roosevelt Counties. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico for January, 1967. Presentation of purchaser's nominations for the six-month period beginning February 1, 1967, for that area.

CASE 3473: (De Novo)

In the matter of the application of the Oil Conservation Commission of New Mexico upon its own motion for an order for the creation of the Veda-Pennsylvanian Pool in Lea County comprising the NW $\frac{1}{4}$ of Section 20, Township 9 South, Range 34 East, and for the assignment of approximately 48,960 barrels of oil discovery allowable to the discovery well, Midwest Oil Corporation's Veda Lee Pruitt Well No. 1, located in Unit C of said Section 20 ~~Lea~~

(a) Create a new pool in Lea County, New Mexico, classified as an oil pool for Pennsylvanian production and designated the Vada-Pennsylvanian Pool, comprising the following-described acreage:

TOWNSHIP 9 SOUTH, RANGE 34 EAST, NMPM
SECTION 20: NW/4

Further, for the assignment of approximately 48,960 barrels of oil discovery allowable to the discovery well, Midwest Oil Corporation's Vada Lee Pruitt Well No. 1, located in Unit C of said Section 20. *(This portion of Case ———, relating only*

In the matter of the application of the Oil Conservation Commission of New Mexico upon its own motion for an order for the creation of the Vada-Pennsylvanian Pool in Lea County comprising the NW/4 of Section 20, Township 9 South Range 34 East, and for the assignment of approximately 48,960 barrels of oil discovery allowable to the discovery well, Midwest Oil Corporation's Vada Lee Pruitt Well located in Unit C of said Section 20 ~~order~~

NONENCLATURE ADVERTISEMENT FOR JANUARY, 1967

CASE 3515

In the matter of the application of the Oil Conservation Commission of New Mexico upon its own motion for an order for the creation of a new pool in Lea County, New Mexico, and the extension of certain existing pools in Lea County, New Mexico, and giving notice to all persons and parties interested in the subject matter thereof to appear and show cause why such creations and extensions should not be made.

(b) (a) from previous order

a) CREATE A new pool in Lea County, New Mexico, classified as a gas pool for Devonian production and designated as the West Ranger Lake-Devonian Gas Pool. The discovery well is Phillips Petroleum Company (Operator) and Texas Pacific Oil Company (Sub-operator), West Ranger Unit No. 2, located in Unit K of Section 23, Township 12 South, Range 34 East, NMPM. Said pool described as:

✓ TOWNSHIP 12 SOUTH, RANGE 34 EAST, NMPM
SECTION 23: S/2

b) EXTEND the Arkansas Junction-San Andres Pool in Lea County, New Mexico, to include therein:

✓ TOWNSHIP 18 SOUTH, RANGE 36 EAST, NMPM
SECTION 1: SW/4

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

✓ TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM
SECTION 3: S/2
SECTION 10: SE/4
SECTION 11: SW/4

d) EXTEND the North Bagley-Middle Pennsylvanian Pool in Lea County, New Mexico, to include therein:

✓ TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM
SECTION 10: SE/4
SECTION 22: W/2 and SE/4

e) EXTEND the Inbe-Pennsylvanian Pool in Lea County, New Mexico, to include therein:

✓ TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM
SECTION 24: NE/4

f) EXTEND the Monument-Tubb Pool in Lea County, New Mexico, to include therein:

✓ TOWNSHIP 20 SOUTH, RANGE 37 EAST, NMPM
SECTION 14: E/2 NW/4

g) EXTEND the Scarborough Yates-Seven Rivers Pool in Lea County, New Mexico, to include therein:

✓ TOWNSHIP 26 SOUTH, RANGE 37 EAST, NMPM
SECTION 31: W/2 W/2

(b) Create a new pool in Lea County, New Mexico, classified as an oil pool for Wolfcamp production and designated the North Bigley-Wolfcamp Pool, comprising the following-described area:

Township 11 South Range 33 East, NMPM

Section 11 $\frac{1}{2}$ NW/4

Further, for the assignment of approximately 44,240 barrels of oil discovery allowable to the discovery well, ~~Midwest Oil Corporation~~ Southern Natural Gas Company's State "C" Well No. 1, located in Unit C of said Section 11

January, 1967 Nomenclature

g N) EXTEND the North Vacuum-Abo Pool in Lea County, New Mexico, to include therein:

✓ TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 23: SE/4

h EXTEND the Wantz-Abo Pool in Lea County, New Mexico, to include therein:

✓ TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM
SECTION 26: SE/4

Docket No. 2-67

DOCKET: REGULAR HEARING - WEDNESDAY - JANUARY 18, 1967

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

- ALLOWABLE: (1) Consideration of the oil allowable for February, 1967.
- (2) Consideration of the allowable production of gas for February, 1967, from thirteen prorated pools in Lea, Eddy, and Roosevelt Counties, New Mexico. Consideration of the allowable production of gas from nine prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico for February, 1967.

IMPORTANT NOTICE:

ON NOVEMBER 1, 1966, A TENTATIVE SCHEDULE OF 1967 ALLOWABLE HEARING DATES WAS CIRCULATED TO OUR MAILING LIST. SINCE THAT SCHEDULE WAS MAILED, IT HAS BECOME NECESSARY TO CHANGE THE JUNE HEARING DATE FROM THE 14th TO THE 16th. PLEASE NOTE THIS ON YOUR CALENDAR!

CASE 3515: Southeastern New Mexico nomenclature case calling for an order for the creation of two new oil pools and the assignment of oil discovery allowables therein, the creation of one gas pool, and the extension of certain other pools, all in Lea County, New Mexico.

(a) Create a new pool in Lea County, New Mexico, classified as an oil pool for Pennsylvanian production and designated the Vada-Pennsylvanian Pool, comprising the following-described acreage:

TOWNSHIP 9 SOUTH, RANGE 34 EAST, NMPM
SECTION 20: NW/4

Further, for the assignment of approximately 48,960 barrels of oil discovery allowable to the discovery well, Midwest Oil Corporation's Vada Lee Pruitt Well No. 1, located in Unit C of said Section 20. (This portion of Case 3515, relating only to the creation of the Vada-Pennsylvanian Pool, is being readvertised and redocketed to clarify the description of the pool's location. The pool actually came on for hearing December 16, 1966, and was created by Order No. R-3166).

(b) Create a new pool in Lea County, New Mexico, classified as an oil pool for Wolfcamp production and designated the North Bagley-Wolfcamp Pool, comprising the following-described area:

TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM
SECTION 11: NW/4

Further, for the assignment of approximately 44,240 barrels

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January 18, 1966, Regular Hearing

of oil discovery allowable to the discovery well, Southern Natural Gas Company's State "C" Well No. 1, located in Unit C of said Section 11.

(c) Create a new pool in Lea County, New Mexico, classified as a gas pool for Devonian production and designated as the West Ranger Lake-Devonian Gas Pool. The discovery well is Phillips Petroleum Company (Operator) and Texas Pacific Oil Company (Sub-operator), West Ranger Unit No. 2, located in Unit K of Section 23, Township 12 South, Range 34 East, NMPM. Said pool described as:

TOWNSHIP 12 SOUTH, RANGE 34 EAST, NMPM
SECTION 23: S/2

(d) Extend the Arkansas Junction-San Andres Pool to include therein:

TOWNSHIP 18 SOUTH, RANGE 36 EAST, NMPM
SECTION 1: SW/4

(e) Extend the North Bagley-Lower Pennsylvanian Pool to include therein:

TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM
SECTION 3: S/2
SECTION 10: SE/4
SECTION 11: SW/4

(f) Extend the North Bagley-Middle Pennsylvanian Pool to include therein:

TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM
SECTION 10: SE/4
SECTION 22: W/2 and SE/4

(g) Extend the Inbe-Pennsylvanian Pool to include therein:

TOWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM
SECTION 24: NE/4

(h) Extend the Monument-Tubb Pool to include therein:

TOWNSHIP 20 SOUTH, RANGE 37 EAST, NMPM
SECTION 14: E/2 NW/4

(i) Extend the Scarborough Yates-Seven Rivers Pool to include therein:

TOWNSHIP 26 SOUTH, RANGE 37 EAST, NMPM
SECTION 31: W/2 W/2

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January 18, 1966, Regular Hearing

(j) Extend the North Vacuum-Abo Pool to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 23: SE/4

(k) Extend the Wantz-Abo Pool to include therein:

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM
SECTION 26: SE/4

C O P Y

HINKLE, BONDURANT & CHRISTY
ROSWELL, NEW MEXICO

February 21, 1967

Southern Natural Gas Company
P. O. Box 1513
Houston, Texas 77001

Attention: Mr. Walter Stark, Legal Department

Re: Northeast Bagley - Wolfeamp Pool
Lea County, New Mexico
NM - OGC Case No. 3315

Gentlemen:

Enclosed is a letter of February 15, 1967, from the New Mexico Oil Conservation Commission in connection with the captioned, and particularly its Order R-3182 entered January 25, 1967.

As stated in the enclosed letter, a typographical error was made in the Order in that the "make-up" rate of production should be 61 barrels per day rather than the 66 barrels per day stated in the Order.

Respectfully,

HINKLE, BONDURANT & CHRISTY

By

S. B. Christy IV

SBC:pv

Enclosure

cc: Mr. A. L. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission
State Land Office Building
Santa Fe, New Mexico

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182

ALBUQUERQUE, N. M.
PHONE 243-6691

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
January 18, 1967

REGULAR HEARING

IN THE MATTER OF:

Southeastern New Mexico nomenclature
case calling for an order for the creation
of two new oil pools and the assignment
of oil discovery allowables therein,
and the creation of one gas pool and
the extension of certain other pools,
all in Lea County, New Mexico.

Case No. 3515

BEFORE:

Honorable David F. Cargo, Governor, Chairman

A. L. "Pete" Porter, Secretary

TRANSCRIPT OF HEARING



MR. PORTER: We will now proceed to Case 3315 which is the nomenclature case for Southeast New Mexico.

MR. HATCH: I believe that's case 3515.

MR. PORTER: 3515, that is correct.

MR. HATCH: Case 3515 Southeastern New Mexico nomenclature case calling for an order for the creation of two new oil pools and the assignment of oil discovery allowables therein, the creation of one gas pool, and the extension of certain other pools, all in Lea County, New Mexico. (a) Create a new pool in Lea County, New Mexico, classified as an oil pool for Pennsylvanian production and designated the Vada-Pennsylvanian Pool, comprising the following-described acreage: Township 9 South, Range 34 East, NMPM, Section 20: NW/4.

Further for the assignment of approximately 48,960 barrels of oil discovery allowable to the discovery well, Midwest Oil Corporation's Vada Lee Pruitt Well No. 1, located in Unit C of said Section 20. (This portion of Case 3515 relating only to the creation of the Vada-Pennsylvanian Pool, is being readvertised and redocketed to clarify the description of the pool's location. The pool actually came on for hearing December 16, 1966, and was created by Order No. R 3166.) (E) Create a new pool in Lea County, New Mexico classified as an oil pool for Wolfcamp production

and designated the North Bagley-Wolfcamp Pool, comprising the following-described area: Township 11 South, Range 33 East, NMPM, Section 11: NW/4.

MR. PORTER: In connection with Case 3515, we're going to call paragraph (b) first. We have an application for bonus discovery allowable in this case. This is as a result of a recent rule established by the Commission granting bonus allowables for new discoveries. This can either be handled by the Commission Staff, or if there is objection, the person who is making applications will present the testimony, or if in the opinion of the Commission or its staff, they can request that the applicant present the testimony. In this case, the Commission has requested that the applicant present the testimony. Mr. Christy.

MR. CHRISTY: Sim Christy, of Hinkle, Bondurant and Christy for the applicant and Southern Natural Gas Company. We have two witnesses I would like to have sworn, please.

(Witnesses sworn.)

MR. PORTER: Before we get into the testimony, may I ask for other appearances in the case. Will there be any other appearances?

MR. NUTTER: Dan Nutter for the Commission Staff.

MR. PORTER: The Commission Staff wishes to make

deanley-meier reporting service inc.

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

1120 SIMMS BLDG. • P.O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO 87101
1205 FIRST NATIONAL BANK EAST • PHONE 256-1294 • ALBUQUERQUE, NEW MEXICO 87101

PAGE

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an appearance in the case.

(Whereupon, Exhibits 1 to 9 inclusive, marked for identification.)

MR. CHRISTY: Mr. Porter, Governor, this is an application of Southern Natural Gas Company for the establishment of the Northeast Bagley field which is the nomination we have used.

MR. PORTER: Northeast, since there is already in existence a North Bagley Wolfcamp?

MR. CHRISTY: This is correct, Mr. Porter. In the North Bagley Pool, in the Wolfcamp portion of it, there are two producing wells. Approximately two miles to the north, Southern Natural drilled another Wolfcamp pool which is producing from the same type or relative structure which we believe to be two separate pools, but they're both in the Wolfcamp.

That well was completed in about November of 1966. It was located, for the record, in the northeast northwest of 11 South, 33 East, Lea County. Subsequent to that Sunset International drilled another Wolfcamp pool approximately one half mile south of the Southern Natural well, and that, for the record, is located in the northwest southwest of said Section 11.

We are going to present here today both

geological information and engineering information as to what we believe results in a determination of two separate pools, the North Bagley and what we choose to call the Northeast Bagley. Our first witness is Mr. Scherer, who is a geologist.

DONALD ROY SCHERER

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

DIRECT EXAMINATION

BY MR. CHRISTY:

Q For the record, sir, would you please state your name, address and by whom you are employed and in what capacity?

A My name is Donald Roy Scherer.

MR. PORTER: Would you spell that name for the record, please?

A Yes, S-c-h-e-r-e-r.

MR. PORTER: Thank you.

A I am employed by Southern Natural Gas Company in Houston, Texas, in the capacity of exploitation geologist.

Q Have you previously testified before this regulatory body?

A No, sir, I have not.

Q Would you briefly give us a statement as to your

schools of higher learning attended, the degrees received, if any, and what work you have done in the geological field and the areas covered thereby?

A I graduated from Tulane University, New Orleans, Louisiana, in June 1949. I was employed by Gulf Refining Company from June 1949 'til June 1952. I was then employed by Southern Natural Gas Company. My first employment involved Gulf Coastal areas involving geological interpretations of Louisiana, Mississippi and East Texas. Since 1961, I have been directly responsible for the development of Southern Natural's properties, field properties, producing properties.

Q Mr. Scherer, this hearing concerns some Wolfcamp wells in Township 11 South, Range 33 East, Lea County. Are you familiar with the wells in that area and the general geological history of the area?

A Yes, I am.

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

MR. PORTER: The Commission considers the witness qualified to testify in the case.

Q (By Mr. Christy) I would like you to refer to Exhibit 1 in this case, which purports to be a structure map -- the top of the Wolfcamp porosity. Would you please

comment on that exhibit, what you feel it has of interest in connection with this case?

A Yes, I think the most important thing about this exhibit is it shows that there is a structural anomaly located and steering around Section 10, and also a separate structural feature steering around Section 22. The exhibit shows that there is what we commonly refer to as a saddle, or a synclinal area between the structural features. This saddle has in many cases indicated barriers because of the relationship of water levels and permeability barriers. In this specific case here, I have indicated with orange circles those wells that we would like to discuss in detail today.

The first well at the top in Section 11 is the Southern Natural Number 1, C-1 State, completed in the Wolfcamp formation from the perforation is 8848 to 58 and 8868 to 75. The Sunset well located approximately a half a mile to the southwest was subsequently completed in the correlative interval of the Wolfcamp zone from perforations 8805 to 8811.

We also note on this exhibit that there are two thin lines connecting these two wells. Then continuing due south to two other wells located in Section 23, which are also represented by the colored orange circles. These

two thin lines represent a line of section of a cross section that will be discussed in more detail as Exhibit Number 3.

Also in this exhibit, you will note that there is a north-south striking fault which dips to the east. It is shown by the two parallel lines. Also you'll note that the "U" designates the up-thrown side of this fault and the "D" designates the down-thrown side of this fault.

Q This fault is what appears to be a road running through Sections 2, 11, 14 and 23 on Exhibit 1?

A That is correct.

Q What is that caused by, is that when the earth kind of drops?

A It's a shifting of the formation due to stress and pressures.

Q Does that create a barrier between the two?

A Yes, sir, it certainly does.

Q Now, you mentioned the high areas in Section 22 and the high areas in Section 10, we have two hills here with what you termed saddle in between.

A Yes, sir.

Q If that saddle would result in a fault, would that give a definite separation between these two pools?

A Yes, sir, I think in most cases in this

reservoirs such as what we're talking about here in the Wolfcamp, that any fault that we might find that would parallel this saddle would certainly be a reservoir barrier between the wells on each side of that fault.

Q So Exhibit 1 doesn't prove or disprove it, but it has an indication of the possibility of it?

A Yes; in other words, we could interpret this structural map, by the saddle to mean that it also could be a fault. We have chosen here to show it as a saddle, but it could also mean that a fault could exist in the same position.

Q It's compatible with a fault?

A That is correct.

Q Now, lets turn to Exhibit 2. Exhibit 2, I believe, is an isopac map. Would you just briefly tell me what an isopac map means?

A Yes, an isopac map means simply showing the net thickness of a particular zone. These lines represent the thickness of the particular formation or reservoir in question.

Q Would you please explain Exhibit 2?

A Exhibit No. 2 was prepared by a study of the sonic logs available for the wells drilled in this area. You will note that there is a number shown by each well

and this number represents the net effective porosity encountered in the Wolfcamp Zone. By then, knowing the thickness encountered in each well we draw the isopac lines so as we can get our relationships as to the thickness of the Wolfcamp Zone in the general area. You will notice that this particular interpretation of the porosity of the Wolfcamp Zone shows that there is a separation between the two wells circled in orange, colored orange, in Section 11 and the two wells colored orange located in Section 23.

It further shows, if you relate it with Exhibit No. 1, that there is a relationship between the net porosity of the isopac map to the structural interpretation, as seen on Exhibit No. 1. This is what I would think a reasonable interpretation and is in keeping with the general ideas and thoughts of how porosities relate to structure.

Q Exhibit 2 then really shows this thing vertically where Exhibit 1 shows it horizontally, is that correct?

A Well, that is correct, in showing the thickness of the bed, yes.

Q Let me refer you to Exhibit 3, you mentioned previously in your testimony in connection with Exhibit 1, as to a prime line and I believe Exhibit 3 shows that line also, does it not, but showing it vertically rather than horizontally?

A That is correct.

Q What does Exhibit 3 show?

A Exhibit No. 3 actually shows the sonic logs of the pertinent wells in this case. It is the sonic logs of a portion of the hole drilled, those wells that are circled and colored orange on Exhibits 1 and 2. You'll note that on the left side of this exhibit --

Q This is Exhibit 3?

A Exhibit 3.

Q All right.

A We have the electrical log of the Southern Natural No. 1, State C-1 and the Sunset Number 1 State. We see that the perforations of the well, in each well, are shown near the interval that is perforated. You will also note that we have a zone which is indicated on this Exhibit as the porosity pinchout. This simply means if you refer back to Exhibit No. 2 and look at these two wells in Section 11, as I explained in discussion Exhibit No. 2, the isopac reflects that this is a pinchout of the porosity in a Southern direction, that is as you go from the Southern Natural C-1 to the Sunset No. 1 and then continues southerly, you go from ten feet to five feet, to zero feet of porosity in the Wolfcamp Zone. This Exhibit No. 3, the cross section, simply shows in cross section what Exhibit

No. 2 shows in a plain view.

Q Now, Exhibit 3 does have all four Wolfcamp wells shown on the orange dots in either exhibit, doesn't it?

A That is correct. Likewise on the right side of this Exhibit No. 3, we have the two wells located in Section 23, the Cabot No. 1 State-L and the Cabot No. 1 Humble State.

Also on Exhibit No. 3, we show that there is a porosity pinchout going north from the Cabot No. 1-L, north to the Cabot No. 1 Humble State and continuing north into Section 14, that there is a pinchout of the porosity reflected by the isopac lines discussed on Exhibit No. 2.

Q Now, pinchout of porosity would indicate separation, would it not?

A Yes, sir, certainly would.

Q Do you have a log on your well, Mr. Scherer?

A Yes, I do.

Q Mr. Scherer, were Exhibits 1, 2 and 3 prepared by you or under your direct supervision?

A Yes, sir, they were.

Q As a result of these Exhibits and your other work and study on this, do you have an opinion as to whether or not there is a separation between the North Bagley Wolfcamp Pool and the two wells we mentioned in Section 11?

A Yes, sir, I believe there is a definite separation there between those wells.

Q Is there anything else that I failed to ask you about in connection with these Exhibits, or your study, that would be of relevance to the Commission?

A Yes, one thing that did occur to me that I thought was really pertinent and that is with respect to the fault that I discussed in Exhibit No. 1. I feel like there is strong evidence that this fault does exist and that this fault is a reservoir barrier. I think that there is evidence in the Williamson No. 1 Guy well which is the well located in the northeast quarter of Section 23. I believe that if the electric log of this well is studied with those of the surrounding wells, we'll see that there is a missing section in that well at approximately 9110 feet. There is a missing section of approximately 200 feet and this 200 feet of missing section is the throw of the fault which has been shown and is depicted on Exhibit No. 1.

Q So that the fault line you strike more south on Exhibit 1 is not only seismic but is also based on the Williamson - Guy well?

A Yes.

MR. CHRISTY: Thank you very much. That's all



we have from this witness.

MR. PORTER: Do you want to offer your exhibits?

MR. CHRISTY: Not yet; I will.

MR. PORTER: Are there any questions of Mr. Scherer? Mr. Nutter?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Scherer, the line of your cross section as shown on your structure map, that runs from the Sunset International well due south to the northern most of the Cabot wells, is that correct?

A That is right, yes, sir.

Q By virtue of the fault which exists on your Exhibit, the Penzoil well in the southeast quarter of Section 14 cannot be shown on the cross section without crossing the fault twice?

A That is correct, yes.

Q You stated, Mr. Scherer, that you were acquainted with the general geology of the Southeastern New Mexico area. It is a common thing to encounter faults in the Mississippian and the Devonian formations, is it not?

A Yes, sir, that is true.

Q Faults are also frequently encountered in the lower Pennsylvanian formation?

A Yes.

Q There is an unconformity separating the lower formations from the upper and the middle portions of the Pennsylvanian?

A Yes.

Q Faulting is rare but you have this unconformity, is it not?

A Yes.

Q Is faulting common in the Permian section of Southeastern New Mexico?

A No, sir, I wouldn't think.

Q Is faulting common in the Wolfcamp formation in the extreme lower portion of the Permian?

A No, sir, I wouldn't say that either.

Q Is faulting common in the upper Pennsylvanian?

A Well, I think.

Q Above the unconformity?

A No, sir.

Q Can you name the one instance where there has been a fault in the Wolfcamp formations which has been established beyond any question of doubt?

A No, sir, I can't.

Q It would appear then that the faulting which occurred in Lea County occurred before the time of the

unconformity in Lower Pennsylvanian age, is that correct?

A Are you referring to any particular fault now?

Q Now, I asked you if there had been any fault that had been proven consistently to be in existence?

A No, sir.

Q It would appear that all of the faulting in Lea County occurred prior to the time of the Lower Pennsylvanian unconformity?

A Yes, sir, I believe that's the general feeling.

Q And that the beds above that unconformity were laid down after the area of faulting?

A Yes, sir.

Q In designing your cross section which shows Wolfcamp porosity in the Cabot well, and Wolfcamp porosity in the Sunset International well, you have porosity in both of these and then you have a large white area where there is no porosity?

A Yes, sir, that is correct.

Q The fact that there has been no well drilled there establishes that there is no porosity, is that it?

A No, sir, the fact that this is my interpretation of the porosity is what establishes the missing porosity area.

Q In other words, this cross section was built on

the isopac of the Wolfcamp porosity.

A Yes, sir, that is correct.

Q And the reason that you couldn't show any porosity in Section 14, was the fact that you had to show the fifteen foot of porosity in the Penzoil well on the east side of the fault?

A No, sir, that is not true at all.

Q Well, couldn't you have drawn an isopac showing some Wolfcamp porosity in Section 14 if you hadn't had the fault there?

A Yes, sir. I certainly could but I don't believe that's the way it is. What I tried to imply here, this is my interpretation of what I think is reasonable.

Q But you base this interpretation on a fault in the Wolfcamp when the Wolfcamp normally is not faulted?

A No, sir, my interpretation of the porosity of this formation is strictly based on the relationship of that porosity with respect to all the wells in the area. I believe that if you refer back again to Exhibit No. 2 that there are instances in other wells where the net porosity is greater, and I believe that to me, if I study these that it indicates to me that there is a strong possibility that the porosity decreases southeasterly of structure. I firmly believe that this is a reasonable

interpretation of what happens to the porosity in this area.

Q The porosity doesn't indicate that there is any production there, though, does it?

A No, sir, this porosity map, Exhibit No. 2, shows that a well drilled in, say, the northwest quarter of Section 14 would encounter no porosity in the Wolfcamp Zone and therefore it would be a dry hole with respect to production from the Wolfcamp Zone.

Q But the reason why it would show that a well there would encounter no porosity is because you had to discontinue the line coming from the Sunset well to the Cabot Well and could not take in the Penzoil Well because of the fault?

A But that isn't the reason why I didn't do it, that's what I want to be clear.

Q But you couldn't do it with the fault, could you?

A That may be true, but like I said, I feel like this is a reasonable interpretation of what happens to the porosity, irrespective of the fault.

Q There's a lots of porosity up there in Section 10, but there's no production from the Wolfcamp up there?

A That is correct, yes.

Q So the porosity itself doesn't prove anything?

A No, sir, but those wells that are completed in Section 10 are wells completed in the formations deeper than the Wolfcamp Zones, so it is more prudent operations that those wells would be completed in deeper formations that are connected.

Q Do you know of any efforts made to complete in Section 10 that resulted in failure in the Wolfcamp formation?

A No, sir, I don't.

MR. NUTTER: I believe that's all.

CROSS EXAMINATION

BY MR. PORTER:

Q Mr. Scherer, now from your testimony here I see it is your contention that your well establishes a separate source of supply for all of the other wells in there.

A From the wells to the south, it does.

Q Was that Sunset No. 1?

A No, sir, I believe they're connected.

Q You think they're in the same pool that you are in?

A Yes.

MR. PORTER: Anyone else have a question?

MR. CHRISTY: May I ask one more question, please?

MR. PORTER: Yes, Mr. Christy.

REDIRECT EXAMINATION

BY MR. CHRISTY:

Q On Cross Examination, Mr. Nutter asked you, although you had porosity up in Section 10, they didn't complete them in the Wolfcamp, you are not trying to say that with porosity you always get production, but what you are saying is it not, that you can't have production without porosity?

A That is correct.

MR. CHRISTY: That's all.

RECROSS EXAMINATION

BY MR. PORTER:

Q Did you have knowledge, Mr. Scherer that Sunset International has asked for an extension of the North Wolfcamp Pool which is the pool south of both wells?

A I understand that there is in this case today an application or request to add Section 10 to the North Bagley Field, but it is only for the deeper formations. It has no relationship to the zone which we are discussing here today.

MR. PORTER: Does anyone else have a question of the witness. He may be excused.

(Witness excused.)

MR. CHRISTY: At this time, I would like to call Mr. Heberling.

Let the record please show that at the request of the Commission, we are furnishing the Commission a copy of the log of the Southern Natural well involved in this case. As I mentioned to the Commission to start out that we would present not only geological testimony but engineering testimony with respect to our belief there is a separation here. As can easily be seen on geological interpretations, you can have different interpretations. I think the engineering testimony is going to make it rather conclusive.

HAROLD HEBERLING

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

DIRECT EXAMINATION

BY MR. CHRISTY:

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

A My name is Harold Heberling. I reside in Houston, Texas; I am employed by Southern Natural Gas Company, as Chief Engineer in the Exploration-Production Division.

Q Have you previously testified before this regulatory body and had your qualifications accepted?

A No, sir, I have not.

Q Would you state to the Commission the schools of higher learning you have attended, the degrees received and what engineering experience you have had and in what areas?

A I graduated from the Pennsylvania State University in 1951 and received a B. S. Degree in Petroleum - Natural Gas Engineering. I then was employed by Stanolind Oil and Gas Company for a period of a little over five years. I left Stanolind in late 1956, and have been employed by Southern since then.

Q As a petroleum engineer.

A As a petroleum engineer. I have mainly worked in the Gulf Coast areas. However, I also have done work in West Texas, some in New Mexico, and Mississippi.

Q Have you made a study of the wells located in the Wolfcamp, wells located in Township 11 South, 33 East in connection with this hearing?

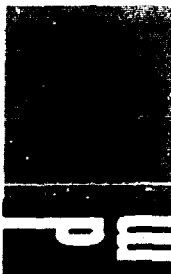
A Yes, I have.

MR. CHRISTY: Are the qualifications of the witness acceptable?

MR. PORTER: They are.

MR. CHRISTY: Thank you.

Q (By Mr. Christy) Now, Mr. Heberling, I would



like to refer you to Exhibit 4 which I believe is an oil production graph and a gas - oil ratio graph on the Humble State 1 well which is the orange dot in the northwest northwest of Section 23 on Exhibits 1 and 2. Is that a correct identification of the exhibit?

A Yes, it is.

Q It would indicate a decline, I gather, a decline in oil production except for one large increase of production in mid '66 and an increase in gas-oil ratios for that well, is that correct?

A That is correct.

Q What kind of well would that indicate to you, with a history like that?

A Well, it would indicate to me that this well is, in all likelihood completed in a relatively small closed depletion type of reservoir. This is a typical curve from this type of reservoir.

Q Exhibit 5 is the same data as Exhibit 4 except it relates to the Cabot State 1-L well, does it not?

A That is correct.

Q Again it shows, with the one exception of flush production in '66, a decline in oil production, an incline in gas-oil ratios?

A That's correct.

Q So I assume a similar type of well is what you would envisage?

A That is correct.

Q Incidentally, on that Exhibit I believe it's marked Cabot Corns 1-L E, that "E" should be "L", should it not?

A I am not sure that the oil, gas and the engineering books show it as L-1-E.

Q However Exhibit 5 does relate to the well shown on Exhibits 1 and 2 and located in the southwest northwest of Section 23?

A That is correct.

Q However, there was one well slightly south of that, known as the Thompson, was there not, completed in the Wolfcamp?

A That is correct.

Q And Exhibit 6 shows the same gas-oil ratio until the well was abandoned in '65?

A Exhibit 6, yes.

Q And again, an increase in oil production and decrease in GORs, the same type of well you have mentioned in connection with Exhibit 4?

A That is correct.

Q Have you made a study of the bottom hole pressures

for these three wells mentioned in Exhibits 4, 5 and 6 and the two wells up in Section 11?

A In all of the wells except the Thompson. I have no pressures indicated in the Thompson. I have studied this pressure data that is available to me and it's shown on Exhibit 7.

Q Would you briefly discuss Exhibit 7 and it's relevancy to this hearing?

A Exhibit 7 is a graphical presentation of the bottom hole pressure measurements taken in four Wolfcamp completions in this area versus time. This type of graph will usually show you which wells are connected and which wells are not connected in common pools. You'll notice that the first curve with the arrow, it's dashed with the arrow pointing; Cabot Corporation State 1 there has been three pressure measurements taken in this well. The initial pressure was 3112 pounds. That well's present bottom hole pressure is 948 pounds. I interpret this 3112 pounds to be approximately the original reservoir pressure.

Q Is that known as virgin pressure?

A Yes, sir. You'll note that the Cabot 1-L curve I have two pressure surveys, one was taken upon recompletion into this reservoir. It's initial pressure measurement was 2,778 pounds. It's present pressure is 691 pounds.

I also have listed on this graph Sunset International State-1 with a little arrow toward a dot. This dot represents the bottom hole pressure measurement taken on January 13th of this year in this well. The bottom hole pressure was 2,242 pounds.

You'll notice on the Southern Natural Gas Company State C-1, I have two pressure measurements. The first one was 3,149 pounds. Now, this pressure was taken before any production. It was a drillstem test build-up pressure while we were drilling a well. The current pressure in this well after some two months of production is 2,502 pounds.

Q Before we proceed, would you give us a little history on that Southern Natural well, when was it completed, what was its initial pressure, and how many barrels it produces and so forth?

A This well was completed on November 15th of 1966. On an initial potential test we flowed the rate of 678 barrels of oil per day. This is not a two-hour built up to twenty-four hours, this is actually that we had in the tanks.

Q That's a twenty-four-hour test?

A Yes, sir, the well made 993 MCF of gas, this would be a gasGOR of less than 1500 cubic feet per barrel,

the flowing pressure was 550 pounds. This was 1864 choke. It's a high capacity type of well.

Q It had an initial bottom hole pressure of 3149?

A That is correct.

Q Would that be it's virgin pressure?

A I would say so.

Q That was in December of 1966?

A The drillstem test build-up pressure was measured October 14th, of '66.

Q Now, referring back to Exhibit 7. What was the pressures in the two Wolfcamp wells in North Bagley at the date you took, or approximate date you took your initial pressure tests in your well?

A They would have been less than a thousand pounds.

Q And your initial was 3149?

A That is correct.

Q Now, the Sunset well is actually a recompletion, is it not?

A That is correct.

Q It was producing in the lower Pennsylvanian horizon and then plugged back up?

A Yes.

Q Was it producing in the Wolfcamp originally?

A No, it was originally completed in the lower

Pennsylvanian.

Q Plugged back to the Wolfcamp? Now if the wells on Exhibit 2 are in the same reservoir, would you expect somewhat comparable pressures at a given point of time such as October, '66?

A I certainly would and you certainly wouldn't expect the two wells at the south to be less than one thousand pounds and the Southern Natural Gas well to the north to still have virgin pressure and not drop to any pressure at all.

Q But the difference in the pressure could be accounted for by low permeabilities, would it not?

A It would have to be extremely low.

Q What is extremely low, please?

A From, say, two to five millidarcies.

Q Is a millidarcy a unit of measurement of permeability?

A Yes, it is.

Q Now, let's refer to Exhibit 8. Tell me what Exhibit 8 shows?

A Exhibit 8 shows my calculations of the permeability of the reservoir in the vicinity of the Southern Natural Gas Company State 1-C well based upon a build-up test run in the well. This calculation sheet shows that we measure

somewhere on the order of 550 millidarcies permeability.

Q That's some hundred times the low permeabilities you were speaking of to account for this pressure differential?

A That is correct.

Q What is Exhibit 8-A?

A It is a plot of the pressure build-up test that was run in the Southern Natural Gas Company well by Johnson testers.

Q It is a companion to Exhibit 8, is it not?

A Yes.

Q We spoke of the pressures a minute ago and you said it would take low permeability to account for the high differential in pressure at a given point of time. Have you made a study as to what range or magnitudes of low permeability would be necessary in order to account for these differences in pressure data at a given point of time?

A Yes, Exhibit 9 more or less reflects my calculations in this regard. This Exhibit shows that the reservoir permeability would have to average about four millidarcies for the pressure differential to exist in this reservoir, as we have measured it on January 13th of 1967.

Q Mr. Heberling, were Exhibits 4 to 9 inclusive,

including Exhibit 8-A prepared by you or under your direct supervision?

A Yes.

Q From your study of these exhibits and from your studies in preparing these exhibits and from your knowledge of the pool, have you reached an opinion as to whether or not there is separation between the wells in Wolfcamp in Section 11 and Wolfcamp in Section 23?

A Yes, I have concluded from my exhibits that the Southern Natural Gas well, State 1-C is in a separate reservoir from the wells to the south, namely the Cabot Corporation State 1 and 1-L.

Q Do you believe that Sunset well is in the same common source of supply as the Southern Natural?

A Yes, I do.

Q Is there anything that I have failed to ask you that you feel might be of importance to the Commission in consideration of this application?

A No, sir.

MR. CHRISTY: That's all from this witness.

CROSS EXAMINATION

BY MR. PORTER:

Q Did you make a comparison of the gravities of the oil produced from Sunset well and from the Southern

Natural Wells?

A No, sir. Sunset has only had their well on production less than a month. I believe it's fairly close to the gravity of our well.

Q So you don't know about the characteristics of the oil produced there?

A Not between theirs and ours.

Q What about the others to the south. the Cabot wells?

A They were running slightly behind ours. I called their production man last week and he read me figures all the way from 45 degrees was the lowest one he read me in recent months, on up to as high as 48 degrees.

Q 45 to 48?

A Yes. These measurements, he said, were taken at the time they proved their meters on the leases. I understand they have a commingled battery.

Q Yes, sir, what was the gravity of your oil?

A Our runs are showing 45.

Q 45?

A Yes.

Q So really there's not too much difference in the gravity there?

A No, sir.

MR. PORTER: Mr. Nutter, do you have any questions?

MR. NUTTER: Yes, sir.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Heberling, in view of the extremely high permeability which you have calculated for your State C No. 1 well as shown on Exhibit 8, to what do you attribute the decrease in pressure from 3149 to 2502 pounds in just a relatively short period of time?

A Probably due to the fact that the size of our reservoir is not great big possibly a couple hundred acres.

Q In other words, you have had that much depression in a three or four months.

A It's an early indication of a not too large a reservoir.

Q What is your current cumulative production?

A Our well has made around 8500 barrels as of that pressure date.

Q You said that your first test on completion was an actual 678 barrels in the tanks and in 24 hours?

A That is correct.

Q What is that well capable of producing at the present time?

A I discussed this with our production superintendent the other day and he said it will still produce five or six hundred barrels a day.

Q You don't anticipate you would have any trouble producing your bonus then?

A No, sir.

Q For a little while at least. Now, Mr. Heberling, I notice here that the Sunset International pressure is 2242 taken on January 13th. How many barrels had been produced from that well at that time?

A I would estimate around 3,000. Mr. Nutter. There have been no reports published yet showing how much they have run. They have only been on about a month.

Q To what would you attribute the fact their pressure is lower than your pressure?

A Possibly that we are not completely built up and should have run our survey a little longer.

They have a mechanical problem in their well, too, Mr. Nutter. They have made their recompletion, their well produced some water and being up-dip from ours they couldn't understand this since we are not producing water. They ran a survey in the well and could show that water was coning behind the casing in our well from another porosity zone and they moved a rig on and attempted to

correct this situation but were unable to shut off the water. As a matter of fact, I don't know they were even able to squeeze any cement into the formation at all. I think this may also be part of the reason.

Q Well, at the rate your pressure is delining and also I presume their's, it's not going to be very long, by on Exhibit 7, your pressure decline would intercept Cabot's pressure decline, is that correct?

A That would be true. Of course --

Q Whether they are in the same pool or not they would intercept on this Exhibit?

A Yes, I think our pressure will go down and will blend off somewhat to the right. This is just early indication that it is not too large.

Q Is there any possibility, Mr. Heberling, that the reason that Sunset International's pressure is lower than your pressure, the fact that their well is closer to the Cabot wells than yours is?

A If the reservoir permeability is on the order of three to four millidarcies, that's possible.

Q If they were a common reservoir, it would be expected that their well would have a lower pressure than yours, would it not?

A Yes, they would.

MR. NUTTER: Thank you, that's all.

MR. PORTER: That would assume that your well is in a separate reservoir?

MR. NUTTER: No, that's assuming all wells are in the same reservoir and the Sunset International well is closer to the Cabot wells than the Southern Natural wells, you would assume that the Sunset well would have a lower pressure than the Southern Natural well.

MR. PORTER: Oh, yes. Does anyone have a question of Mr. Heberling? Mr. Christy.

MR. CHRISTY: I would like to ask one or two questions in connection with Mr. Nutter's Cross Examination.

REDIRECT EXAMINATION

BY MR. CHRISTY:

Q You mentioned a blending of the pressures on Exhibit 7. I assume by that you do not believe that the pressures in your well will continue to decline as rapidly as they have before?

A No, I don't.

Q We had a rather rapid decline in pressures on the Cabot State No. 1 and then a leveling off?

A Yes, sir.

Q This is what you would expect in yours?

A Yes.

Q In reference to Mr. Nutter's last question, he said that you would expect the pressures to be lower in the Sunset than in your well if it was all one common reservoir, with a relatively high permeability would you not expect the pressures to be somewhat in line with each other?

A We calculate this permeability to be on the order of 550 millidarcies, and with this type of permeability you would expect the pressures to be approximately the same, that is right.

Q And yet they are several thousand apart, more than one thousand?

A Yes, between Southern's well and Cabot's well.

MR. CHRISTY: That's all, thank you.

MR. PORTER: Does anyone else have a question of Mr. Heberling?

Governor Cargo, we have determined why engineering is called an exact science. In our hearing we find that one engineer takes an opposite stand from another.

GOVERNOR CARGO: It sounds like lawyers.

MR. PORTER: Any further questions?

MR. CHRISTY: No further questions.

MR. PORTER: Have you offered your exhibits?

MR. CHRISTY: Subject to the explanations on

Exhibit 5, we would like to offer Exhibits 1 to 9 inclusive, including Exhibit 8A.

MR. PORTER: If there is no objections, the exhibits will be admitted.

(Whereupon, Exhibits 1 - 9 inclusive were admitted in evidence.)

MR. CHRISTY: That's all.

MR. PORTER: Does the staff wish to present any testimony?

MR. NOTTER: No, we don't want to put on any testimony. I would like to make a statement, though.

MR. PORTER: At this time we have some communications. Mr. Hatch, would you indicate what they are?

MR. HATCH: Telegram dated January 17, 1967, addressed to New Mexico Oil Conservation Commission from Sunset International Petroleum Corporation. "This is to advise that we concur with Southern Natural in their new pool applications Wolfcamp, Sections 11, Township 11 South, Range 33 East, Lea County, New Mexico."

Telegram dated January 17, addressed to New Mexico Oil Conservation Commission from W. M. Sargent, Junior, Cabot Corporation, "Reference request of Southern Natural Gas Company for new field designation their State

C-1, Section 11, Township 11 South, Range 33 East, Lea County. Cabot Corporation does not object to establishment of new fields designation".

MR. PORTER: Mr. Nutter, would you make your statement at this time?

MR. NUTTER: First of all, I would like to say and make it crystal clear, Mr. Porter, that the staff in this matter, doesn't in any event want to deprive any operator from a discovery allowable when he has made a bonafide discovery of a hereto unknown common source of supply which is a part of the language which is placed on the Form 109 that the operator requests an allowable for hitherto unknown common source of supply.

The rule, as it was written and put into effect September 1st, provides that the Commission staff would put on the case, put on the testimony for the operator if the Commission Staff agreed that a discovery had been made, or if no other operator had objected to the discovery. In this case, no operator objected to the discovery. The Commission Staff made a detailed study of this particular instance and doesn't feel that there is sufficient evidence at this time to warrant the discovery allowable. Much of this case is based on the premise that there is a fault lying there to the east of these wells. This fault is in

the Wolfcamp formation. Faults are almost unknown in the Wolfcamp in Southeast New Mexico. We feel that basing a discovery on this sort of a premise is a rather hazardous operation. The assignment of a discovery allowable to a well which has not made a discovery deprives other operators of correlative rights. We feel that it would be best to withhold the assignment of any discovery allowable until further evidence is available to establish that the discovery allowable is warranted in this case.

I don't know what the time limit would be. I was discussing this particular area with a representative of Sunset International just this morning. He advises me that they're going to drill another well in the same section where they have their present well. Any additional information will be, if the assignment allowable is assigned at this time, I think the order should make some provision that it be paid back if it is produced and the pool is indeed found not to be a new pool, but an extension of an existing pool. That's all I have.

MR. PORTER: Mr. Nutter, you say Sunset had indicated they would drill another well in this Section 10, I believe it is?

MR. NUTTER: I don't know the section number, the same section they have the well in. He indicated that

it would probably be to the east, he wasn't sure of the exact location, however.

MR. PORTER: A well such as that wouldn't give us any further information as far as making a determination whether this is separate from the reservoir to the south, would it?

MR. NUTTER: Any well would help, Mr. Porter. Our exhibit which we haven't put on here, but I would like to mention that our exhibit shows that that Penzoil well which is southeast, is part of this same reservoir. We feel that this is a stratigraphic type of reservoir lying on the east flank of the North Bagley High and that the Wolfcamp formation will cross that entire east flank is proof. Any well that's drilled there will help to establish these facts.

Section 11 is where the Sunset International well is.

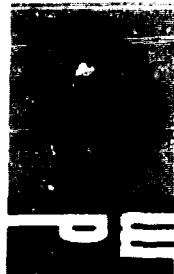
MR. PORTER: Anyone else like to make a statement? Mr. Christy?

MR. CHRISTY: Mr. Porter, initially, like any other matter, whether it is a regulatory body or Court hearing, we have to go on what the evidence is that's presented to us. First of all I would like to make it crystal clear, we are not basing this case solely on a fault.

dearnley-meier reporting service, inc.

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We believe the fault exists along that north-south line. We are quite confident of it, in our own opinion. We are not solely basing our case on that. We are basing our geological information on a porosity pinchout.

We think Exhibit 2 shows this clearly and Exhibit 3 bolsters it. We think the heart of this whole case lies in the fact that you have pressures of great magnitude, comparative pressures of great magnitude in our wells, versus the wells in the North Bagley, and there is no way possible to have that extreme variation of pressures unless you have low permeability, low communication and you have complete evidence and no other evidence that you have high, high; very high, I think Mr. Nutter used the word "permeability" in here in the magnitude of five to six hundred. So there is no way, I can't conceive of a way that you can have virgin pressures in the three thousand area in a well drilled in 1966, and say it's in the same common source of supply as wells drilled back in 1962, which, according to the exhibits, have produced several hundred thousand barrels of oil. It just doesn't make any sense. It makes good sense that these are two small separate reservoirs, unconnected, due to porosity pinchout.

Thank you very much. Incidentally, may I make one further statement? Mr. Nutter mentioned that he suggested

a delay in this discovery allowable. We are not asking for anything and we don't want anything unless we are justly entitled to it. We have no objections to holding off on our discovery allowable for three months to give them a chance if they want to get some more information. Conversely, we have no objections if the Commission should justifiably find they are one pool and we're wrong, we certainly ought to pay it back if you give it to us now. We have no objections to that.

MR. PORTER: You have no objections to the Commission postponing action on this case?

MR. CHRISTY: No, sir, we think the question ought to be decided. The question is whether or not it is a new pool. I think that question ought to be decided. If the Commission wants to further say, "we will reconsider this case three months from now and meanwhile no discovery allowable", we have no objections.

MR. PORTER: You have recommended that the pool be established regardless of whether we grant the bonus at this time or not?

MR. CHRISTY: That is correct.

MR. PORTER: I believe that your company has an Application pending before this Commission, Mr. Christy, or will be heard at some later date this month for pool rules.

MR. CHRISTY: That is correct.

MR. PORTER: This is why you are interested in going ahead and having the pool established?

MR. CHRISTY: Yes, it is difficult to hold the next hearing without knowing whether we have two separate pools.

MR. PORTER: And those pool rules which you wish to recommend differ from the ones in what we have been referring to as the North Bagley?

MR. CHRISTY: They are different, yes.

MR. PORTER: You are asking for eighty-acre where I think forty exists.

MR. CHRISTY: Yes, originally eighty existed. In 1964 it was taken off. We are going to ask for eighty-acre spacing for economic reasons in the Northeast Bagley Pool.

MR. PORTER: Anyone else have anything to offer in the case? If not, the Commission will take the case under advisement and proceed with the other part of the nomenclature case and Mr. Runyan, would you take the stand?

(Witness sworn.)

JOHN W. RUNYAN

having been first duly sworn, was examined and testified

as follows:

DIRECT EXAMINATION

BY MR. HATCH:

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

A John W. Runyan, Geologist, New Mexico Oil Conservation Commission.

Q Are you prepared to make recommendations to the Commission concerning the nomenclature of certain pools in Lea County, New Mexico?

A Yes, sir.

Q Are your recommendations prepared in the form of an exhibit?

A Yes, sir.

Q Will you please refer to this Exhibit and to the Docket that has been prepared and distributed to this hearing and point out any substantial differences between the two?

A Yes, sir. I recommend that Paragraph (a), (c), (d) be approved as advertised. Paragraph (e) has addition of the northeast quarter of Section 16; paragraph (f) has the addition of the southwest quarter of Section 16, the southeast quarter of Section 17; Paragraph (g), (h), (i) as advertised. Paragraph (j) the addition of the southwest

quarter of Section 24; Paragraph (k) as advertised.

MR. PORTER: What was that deviation that you recommended there in Paragraph (j), Mr. Runyan?

A (j), yes. The southwest quarter of Section 24.

MR. PORTER: Thank you. You have recommended additional acreage to be taken into these extensions that represents new completions?

A Yes, that is correct.

Q (By Mr. Hatch) Mr. Runyan, back on (a) that one was just a case of readvertising wasn't it, from a previous hearing?

A Yes, that is correct.

Q And you have not received any objections to that?

A That is right, no objections.

Q Of course, paragraph (b) has already been heard this morning and the Commission had already received testimony in that?

A Yes, sir.

Q Do you ask that all the other pools be extended then, as advertised?

A Yes, sir.

Q Do you have anything else to add to your testimony?

A No.

Q Was Exhibit 1 prepared by you or under your supervision?

A Yes, sir.

MR. HATCH: I would like to move the introduction of Exhibit 1 at this time.

MR. PORTER: Exhibit 1 will be admitted in evidence.

(Whereupon, Exhibit 1 was admitted in evidence.)

MR. PORTER: Are there any questions of Mr. Runyan?

If no further questions of the witness, he may be excused.

(Witness excused.)

MR. PORTER: If nothing further to be offered in Case 3515, we'll take the case under advisement and the hearing is adjourned.

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STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss

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 10th day of February, 1967.

Ada Dearnley
Notary Public, Court Reporter

My Commission Expires:

June 19, 1967

CASE 3515: (a) CREATION OF A NEW OIL POOL

COUNTY **LEA** POOL **VADA-PENNSYLVANIAN**

TOWNSHIP **9 South** RANGE **34 East** NMFM

5	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

PURPOSE: One completed oil well capable of producing.

MIDWEST OIL CORPORATION - Vada Lee Pruitt #1 in Unit C of Section 20-9-34.

Completed in Bough C on September 28, 1966. Top of Perforations 9792'.

Proposed pool boundary colored in red. **SECTION 20: NW/4**

(This portion of Case 3515, relating only to the creation of the Vada-Pennsylvanian Pool, is being readvertised and redocketed to clarify the description of the pool's location. The pool actually came on for hearing December 16, 1966, and was created by Order No. R-3166.)

CASE 3815: (b) CREATION OF A NEW OIL POOL

COUNTY **LEA**

POOL **NORTH BAGLEY-WOLF CAMP**

TOWNSHIP **11 South**

RANGE **33 East**

NMPM

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

PURPOSE: One completed oil well capable of producing.

SOUTHERN NATURAL GAS COMPANY - State C #1 in Unit C of Section 11-11-33.

Completed in Wolfcamp on November 14, 1966. Top of Perforations 8848'.

Proposed pool boundary colored in red. SECTION 11: NW/4

CASE 3515: (c) CREATION OF A NEW GAS POOL

COUNTY LEA POOL WEST RANGER LAKE-DEVONIAN GAS

TOWNSHIP 12 South RANGE 34 East NMPM

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

PURPOSE: One completed gas well capable of producing.

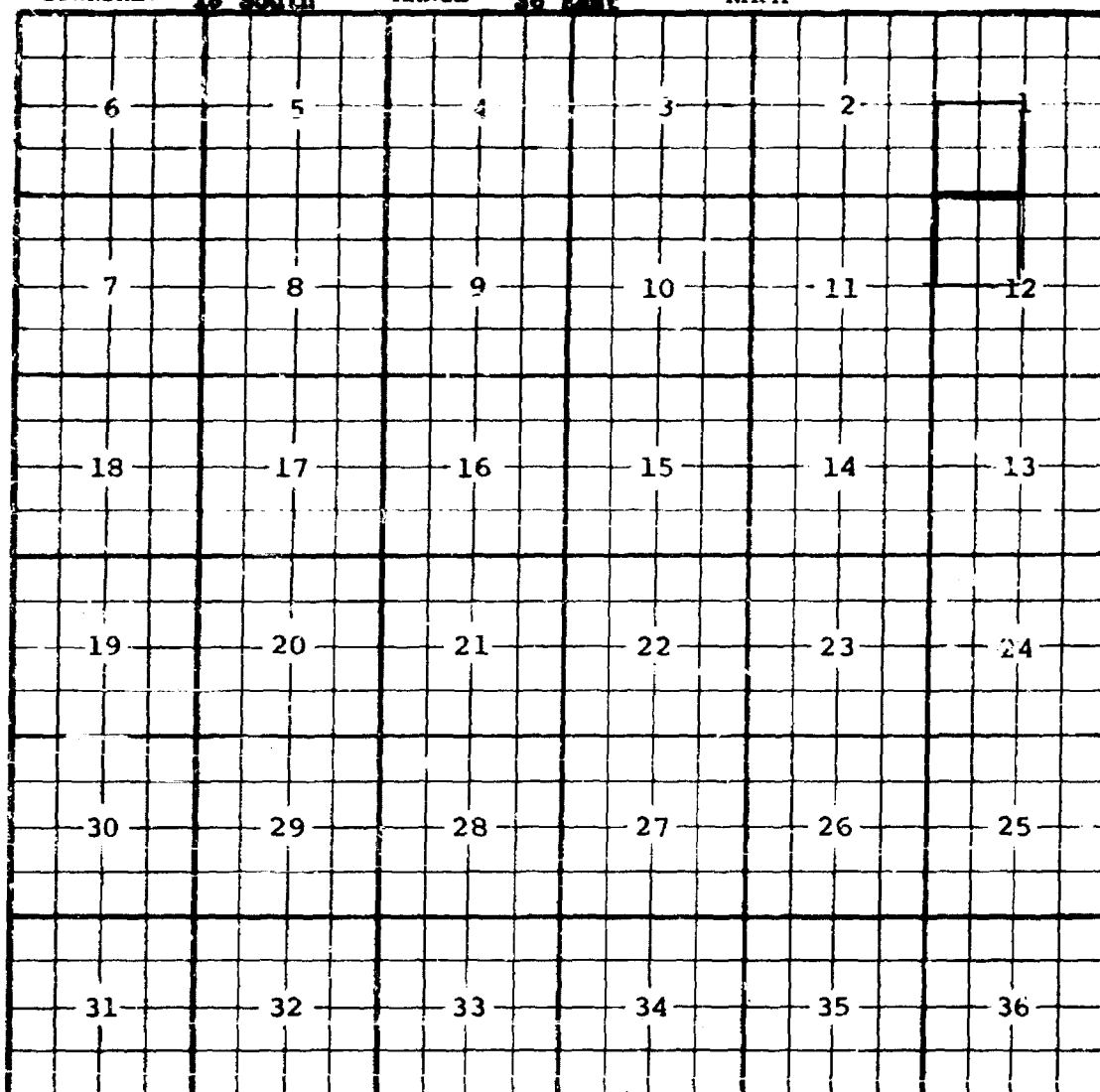
PHILLIPS PETROLEUM COMPANY (Operator) and TEXAS PACIFIC OIL COMPANY (Sub-Operator) - West Ranger Unit #2 in Unit K of Section 23-12-34. Completed in Devonian on August 13, 1966. Depth to Casing Shoe 12,907'.

Proposed pool boundary colored in red. SECTION 23: 3/2

CASE 3515: (d) EXTENSION OF AN EXISTING OIL POOL

COUNTY **LEA** POOL **ARKANSAS JUNCTION-SAN ANDRES**

TOWNSHIP **18 South** RANGE **36 East** NMFM



PURPOSE: Two completed oil wells capable of producing.

AZTEC OIL & GAS COMPANY - State AJ #1 in Unit M of Section 1-18-36. Completed in San Andres on November 28, 1966. Top of Perforations 4880'.

AZTEC OIL & GAS COMPANY - State AJ #2 in Unit N of Section 1-18-36. Completed in San Andres on November 15, 1966. Top of Perforations 5047'.

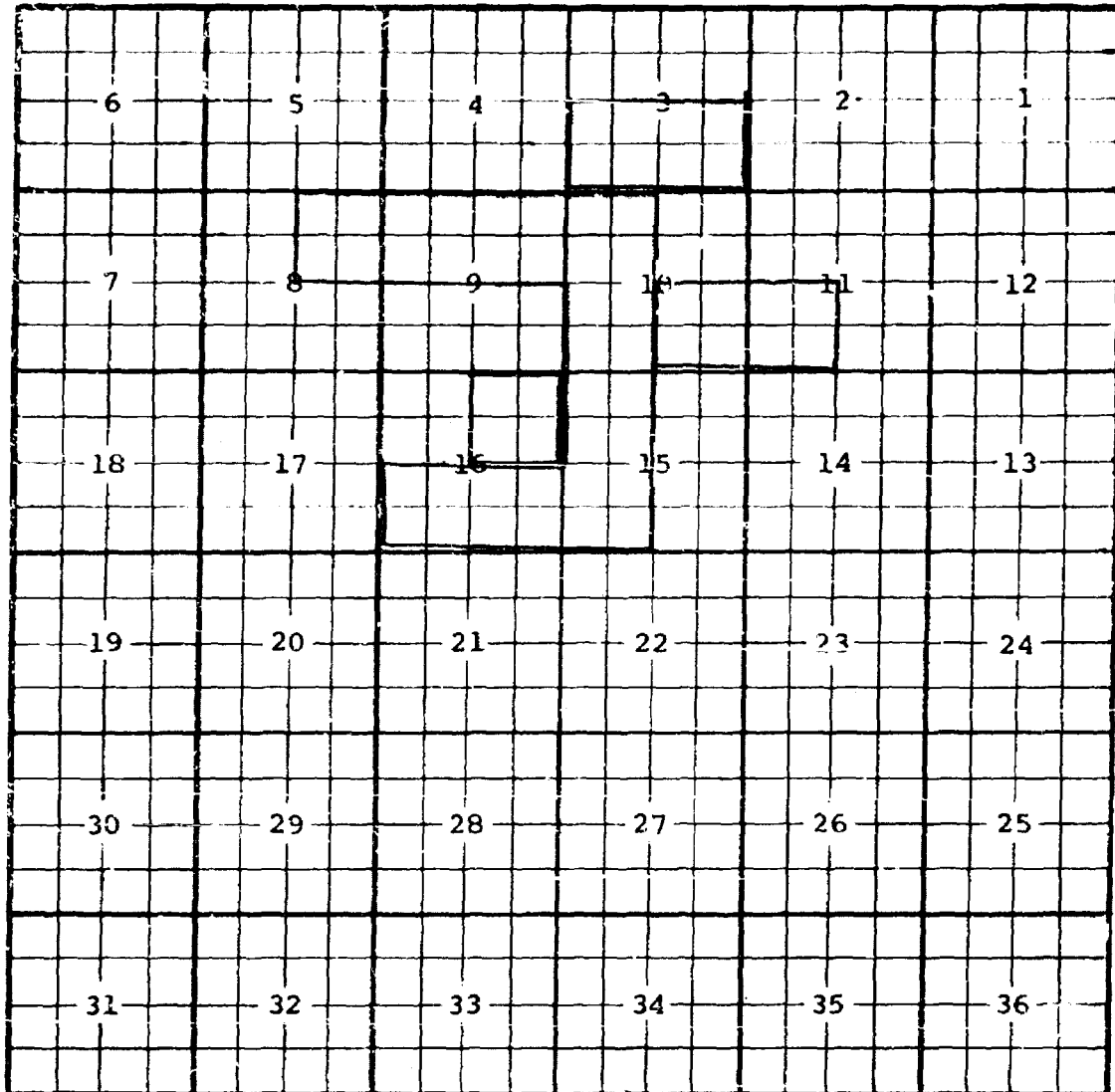
Pool boundary colored in red.

Proposed pool extension colored in green. SECTION 1: SW/4

CASE 3515: (a) EXTENSION OF AN EXISTING OIL POOL

COUNTY **LEA** POOL **NORTH BAGLEY-LOWER PENNSYLVANIAN**

TOWNSHIP **11 South** RANGE **33 East** NMFM



PURPOSE: Three completed oil wells capable of producing.

SOUTHLAND ROYALTY COMPANY - Graham State #1 in Unit O of Section 9-11-33. Completed in Pennsylvanian on October 25, 1966. Top of Perforations 11,120'.

SUNSET INTERNATIONAL PETROLEUM CORPORATION - T. P. "A" State #1 in Unit J of Section 10-11-33. Completed in Pennsylvanian on November 20, 1966. Top of Perforations 10,128'.

SUNSET INTERNATIONAL PETROLEUM CORPORATION - TP State #1 in Unit L of Section 11-11-33. Completed in Pennsylvanian on November 10, 1966. Top of Perforations 10,085'.

ADDITION--UNITED STATES SMELTING REFINING & MINING COMPANY - Bagley State #1 in Unit H of Section 16-11-33. Completed in Pennsylvanian on November 26, 1966. Top of Perforations 10,002'.

Pool boundary colored in red.

Proposed pool extensions colored in green. SECTION 3: 8/2

SECTION 10: SE/4

SECTION 11: SW/4

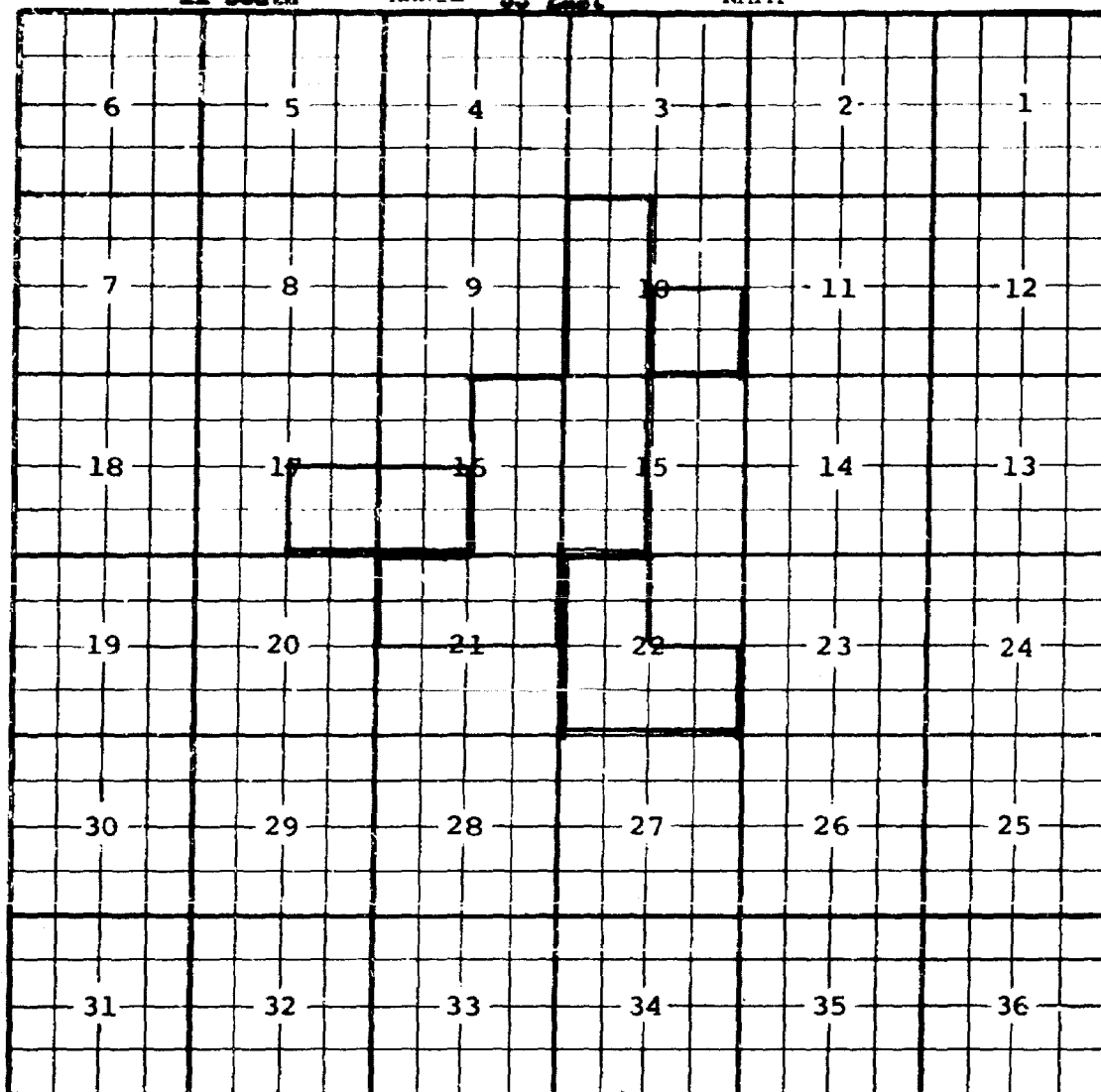
ADDITION-----SECTION 16: NE/4

COUNTY	LEA	POOL	NORTH BAGLEY-MIDDLE PENNSYLVANIAN
--------	-----	------	-----------------------------------

TOWNSHIP 11 South

RANGE 33 Feet

NM PM



SUNSET INTERNATIONAL PETROLEUM CORPORATION - T. P. A State #1 in Unit J
of Section 10-11-23. Completed in Middle Pennsylvanian on December 3,
1966. Top of Perforations 9889'.

STOLTZ & COMPANY - Sinclair A State #1 in Unit O of Section 22-11-23.
Completed in Middle Pennsylvanian on October 31, 1966. Top of Perforations
9696'.

ADDITION--STOLTZ & COMPANY-CLARK - Andover Federal #1 in Unit P of Section 17-11-23. Completed in Middle Pennsylvanian on December 4, 1966. Top of Perforations 9837'.

Pool boundary colored in red.

Proposed pool extensions colored in green. SECTION 10: SE/4

SECTION 22: W/2 and SE/4

ADDITIONS---SECTION 16: SW/4

SECTION 17: SE/4

CASE 3515: (g) EXTENSION OF AN EXISTING OIL POOL

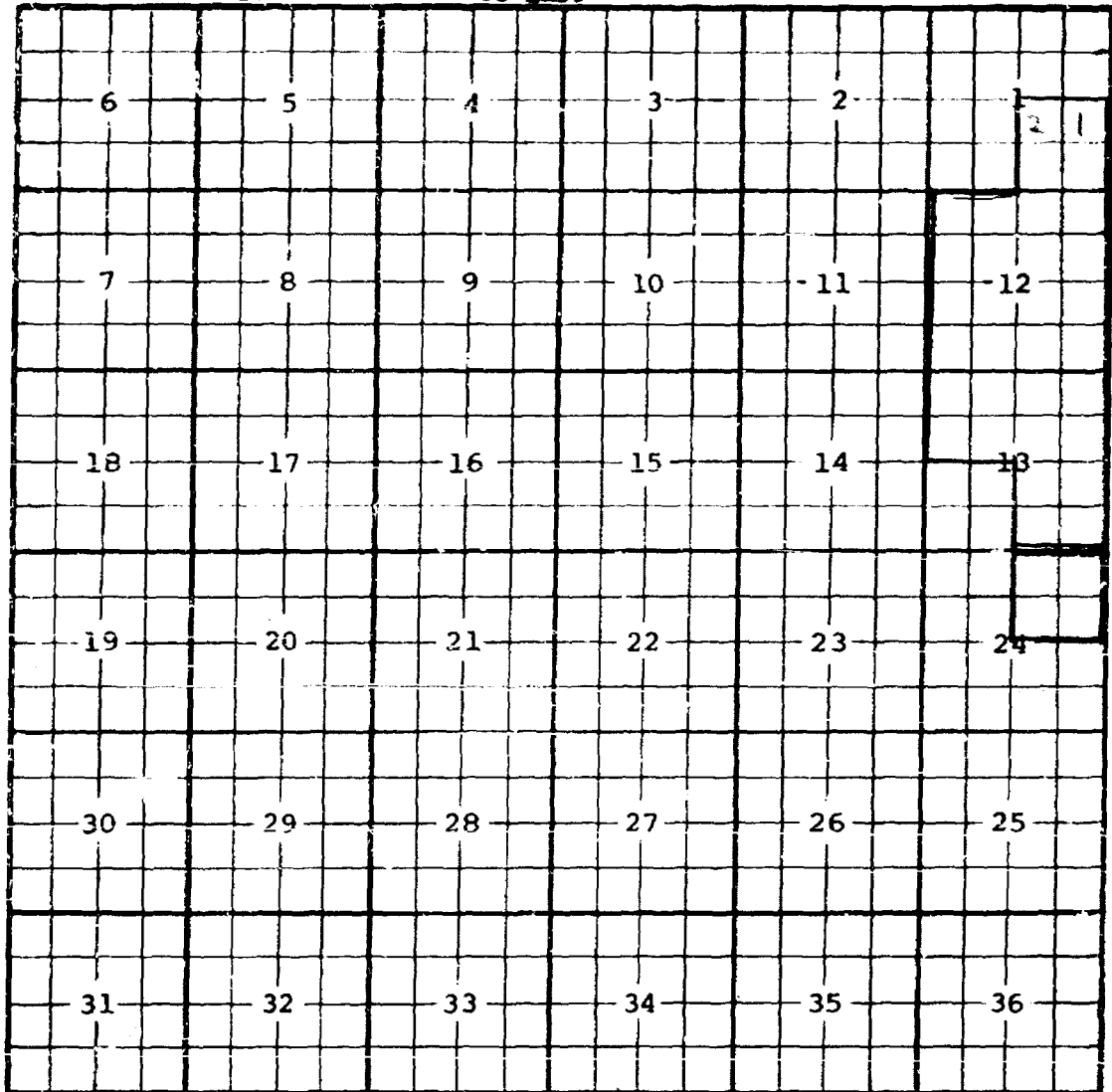
COUNTY LEA

POOL INRE-PENNSYLVANIAN

TOWNSHIP 11 South

RANGE 33 East

NMPM



PURPOSE: One completed oil well capable of producing.

SOUTHLAND ROYALTY COMPANY - Epperson #1 in Unit C of Section 24-11-33.

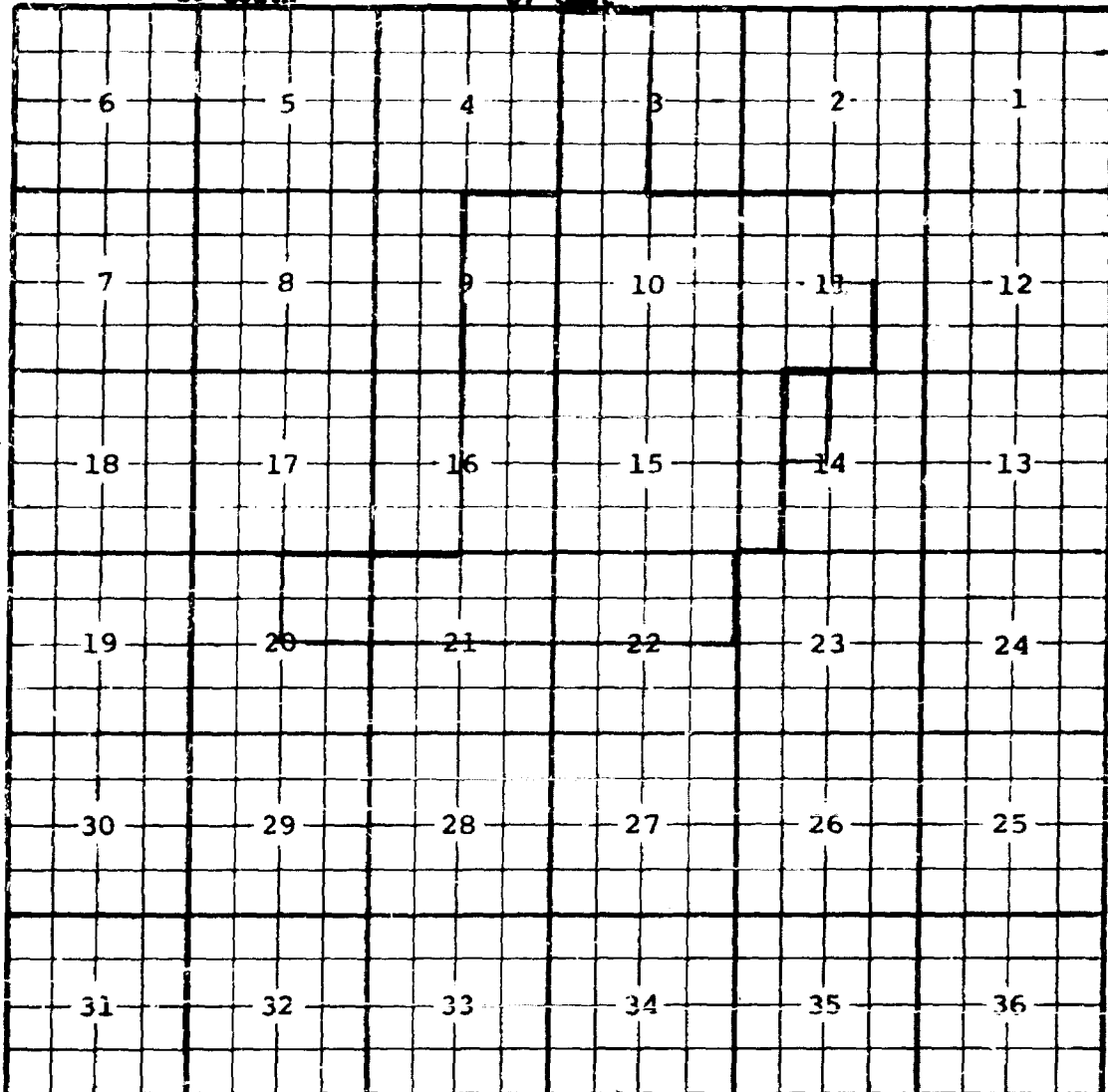
Completed in Bough C on November 2, 1966. Top of Perforations 9802'.

Pool boundary colored in red.

Proposed pool extension colored in green. SECTION 24: NE/4

CASE 8815: (h) EXTENSION OF AN EXISTING OIL POOL
COUNTY LEA POOL MONUMENT-TUBB

TOWNSHIP 20 South RANGE 37 East NMPM



PURPOSE: One completed oil well capable of producing.

CONTINENTAL OIL COMPANY - 88W Tubb #88 in Unit F of Section 14-20-37.

Completed in Tubb on October 21, 1966. Top of Perforations 6449'.

Pool boundary colored in red.

Proposed pool extension colored in green. SECTION 14: E/2 NW/4

CASE 3515: (1) EXTENSION OF AN EXISTING OIL POOL

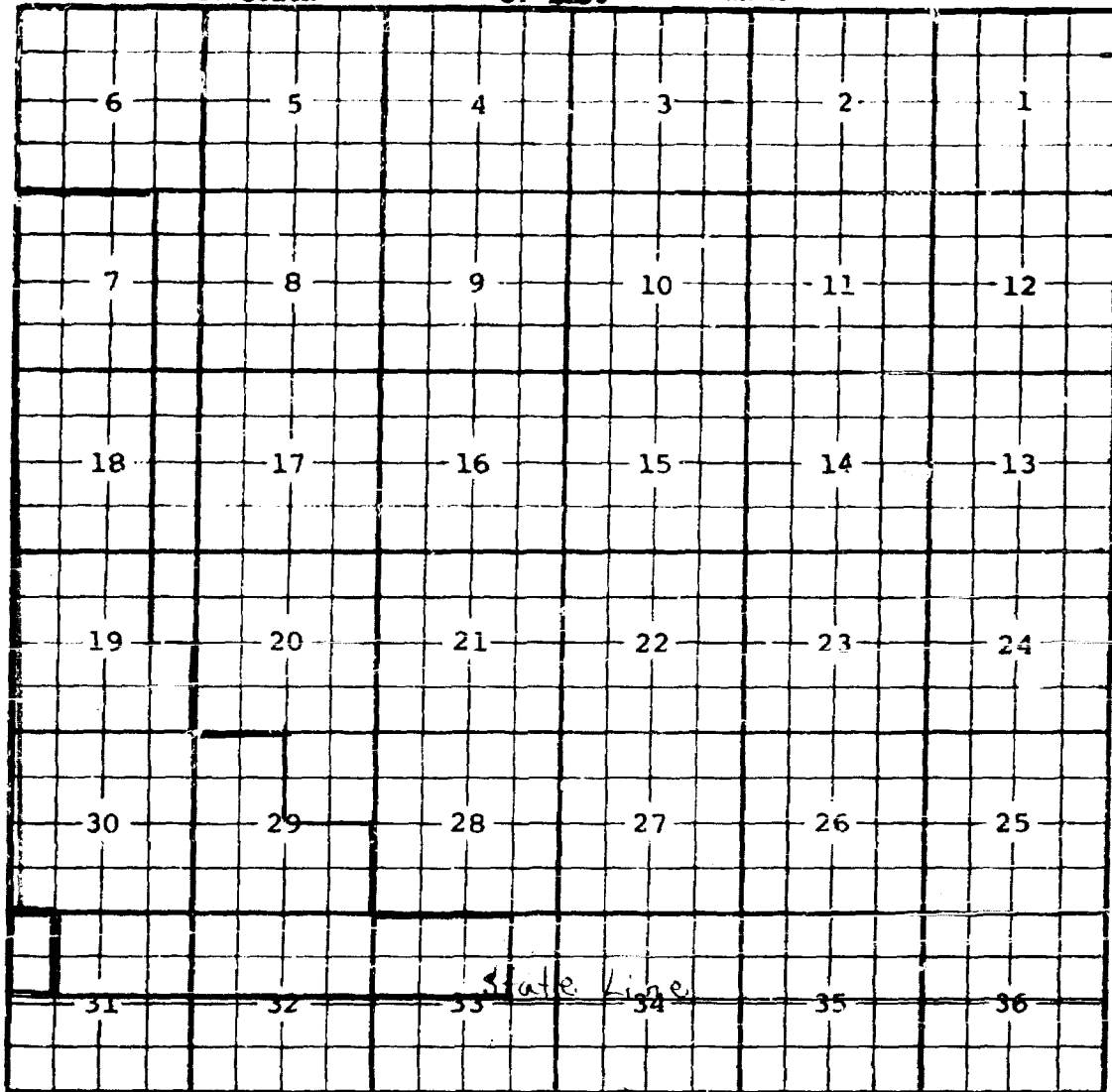
COUNTY **LEA**

POOL **SCARBOROUGH YATES-SEVEN RIVERS**

TOWNSHIP **26 South**

RANGE **37 East**

NMPM



PURPOSE: One completed oil well capable of producing.

CONTINENTAL OIL COMPANY - Leases B-1 #12 in Unit D of Section 31-26-37.

Completed in Yates on November 15, 1966. Top of Perforations 3172'.

Pool boundary colored in red.

Proposed pool extension colored in green. SECTION 31: W/2 H/2

CASE 3515: (j) EXTENSION OF AN EXISTING OIL POOL

COUNTY LEA POOL NORTH VACUUM-ABO

TOWNSHIP 17 South RANGE 34 East NMPM

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

PURPOSE: One completed oil well capable of producing.

MOBIL OIL CORPORATION - Bridges State #117 in Unit P of Section 28-17-34.

Completed in Abo on September 26, 1966. Top of Perforations 8445'.

ADDITION--MOBIL OIL CORPORATION - Bridges State #116 in Unit L of Section 24-17-34. Completed in Abo on August 22, 1966. Top of Perforations 8441'.

Pool boundary colored in red.

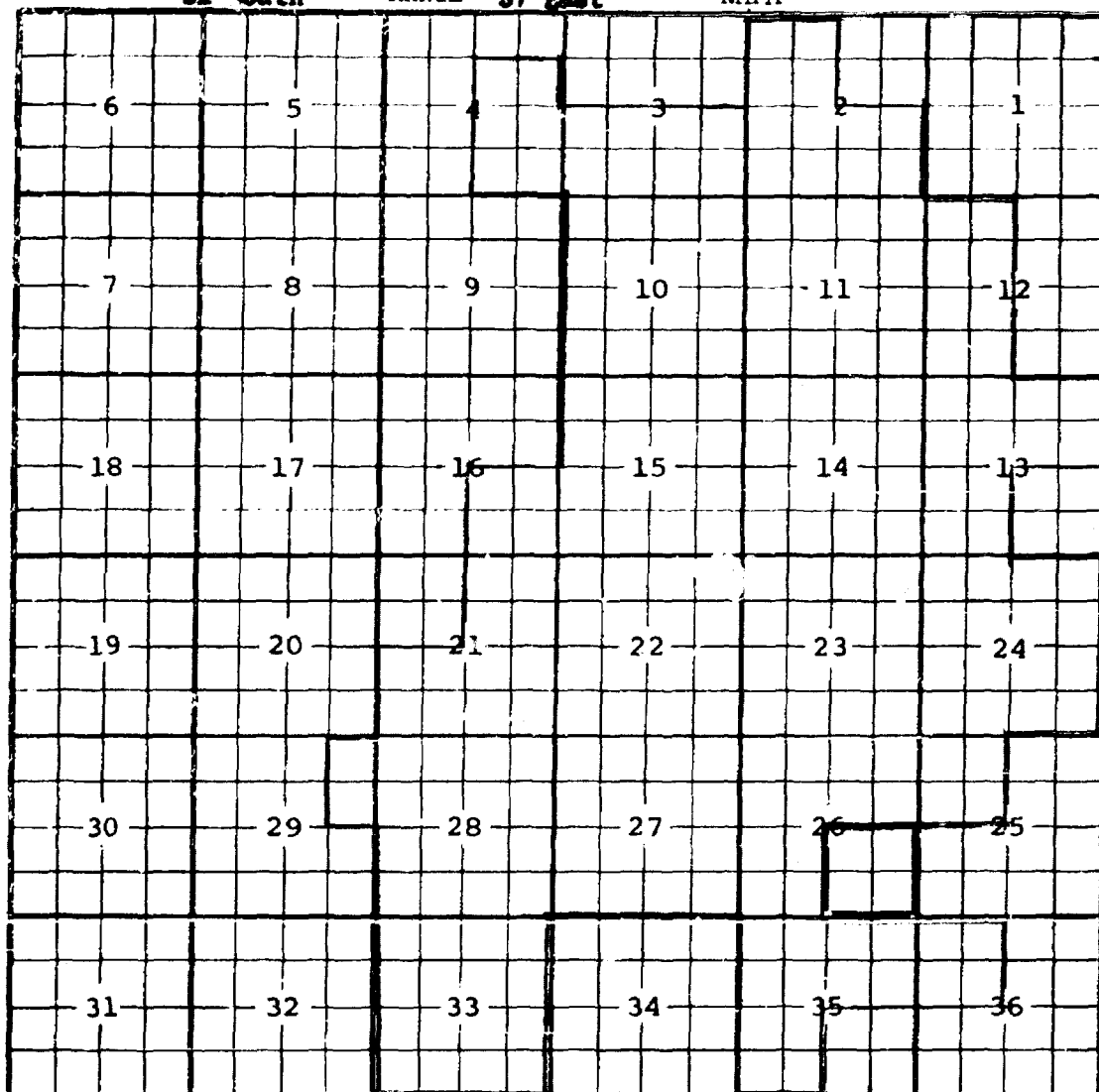
Proposed pool extensions colored in green. SECTION 22: SE/4

ADDITION-----SECTION 24: SW/4

CASE 3515: (k) EXTENSION OF AN EXISTING OIL POOL

COUNTY **LEA** POOL **WANTZ-ABO**

TOWNSHIP **21 South** RANGE **37 East** NMFM



PURPOSE: One completed oil well capable of producing.

SINCLAIR OIL & GAS COMPANY - Elmer C. Hill #2 in Unit P of Section 26-21-37. Completed in Abo on November 6, 1966. Top of Perforations 6855'.

Pool boundary colored in red.

Proposed pool extension colored in green. SECTION 26: SE/4

COPY

SOUTHERN NATURAL GAS COMPANY

P. O. BOX 1511 - RICHMOND TOWER BUILDING
HOUSTON, TEXAS 77001

COPY

December 2, 1966

3515

State of New Mexico
Oil Conservation Commission
P. O. Box 1980
Hobbs, New Mexico

Re: Form "C-109"
State "C" Well No. 1
North Bagley Area
Lea County, New Mexico

Gentlemen:

As per your letter of November 28, 1966, we are enclosing two copies each of the following on the subject well:

1. Form "C-109" (Application for Discovery Allowable and Creation of a New Pool).
2. Map (in accordance with Rule 509).
3. Sonic-Gamma Ray Log.

We are also sending the original and one copy of the above to the office of the Commission in Santa Fe.

Yours very truly,

SOUTHERN NATURAL GAS COMPANY

R. H. Kerr/ph

R. H. Kerr
Production Superintendent

RHK/pb
Enclosures

cc: State of New Mexico
Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico (w/enclosures)

HOBBS OFFICE O. C. C.
NOV 28 10 55 AM '66

SOUTHERN NATURAL GAS COMPANY
EXPLORATION AND PRODUCTION
P. O. BOX 1813 - ESPERSON BUILDING
HOUSTON, TEXAS 77001

November 22, 1966

New Mexico Oil Conservation Commission
P. O. Box 1980
Hobbs, New Mexico 88240

Re: Form "C-109" Application For Discovery Allowable, North Bagley Area, Lea County, New Mexico

Gentlemen:

Southern Natural Gas Company has completed its State "C" #1 well in the North Bagley Field area and more particularly, in Section 11, T11S R33E, and is hereby making application for a discovery allowable, since this well is completed in a new pool.

Attached is a copy of your form "C-109" (Application for Discovery Allowable and Creation of a New Pool) and in accordance with the provisions of Rule 509, we are attaching a map of the area, showing the wells and operators to the best of our knowledge; also attached is a copy of the Sonic-Gamma Ray log, indicating the tops of the major zones in this well. A drill stem test was conducted and the bottom hole shut-in pressure was found to be 3165 PSIG.

By copy of this letter, we are transmitting a copy of form "C-109" to all of the operators owning leases within one mile of Southern's State "C" #1 well. To the best of our knowledge, there are no wells completed in the Wolfcamp zone correlative to the Wolfcamp in Southern's well within a two mile radius.

It would be appreciated if you would grant a discovery allowable for this well. If you need any further information, please call me.

Yours very truly,

SOUTHERN NATURAL GAS COMPANY



R. H. Kerr
Production Superintendent

RHK/pb
Attachments

cc: Southland Royalty Company - 1405 Wilco Building - Midland, Texas
Texas Pacific Oil Company - P. O. Box 4067 - Midland, Texas
Sunset International Petroleum Company - 201 Wall Building - Midland, Texas

**NEW MEXICO OIL CONSERVATION COMMISSION
APPLICATION FOR DISCOVERY ALLOWABLE AND CREATION OF A NEW POOL**

Form C-100
Adopted 9-1-66

NOTE: This form is to be filed and attachments made in accordance with the provisions of Part 50.9. If discovery is claimed for more than one zone, separate forms must be submitted.

Nov 28 10 55 AM '66

Operator Southern Natural Gas Company		Address P. O. Box 1513 - Houston, Texas 77001	
Lesse Name		Well No. 1	County Lea
State C			
Well Location			
Unit Letter C , 660 Feet from The North Line and 1980 Feet			
From the West Line of Section 11 , Township 11S , Range 33E , NMPM			
Suggested Pool Names (List in order of preference)			
1. North Bagley			
Name of Producing Formation Wolfcamp		Perforations 8848-58 and 8868-75	
Date of Filing Form C-104 11-16-66		Date Well was Spudded 9-15-66	
Was "Affidavit of Discovery" Previously Filed For This Well in this Pool? No		Date Compl. Ready to Prod. 11-16-66	
Total Depth 10299	Plugged Back Depth 9319	Depth Casing Shoe 10299	Tubing Depth 8755
Elevation (Gr., D.F., RKB, RT, etc.) 4235.1			
Oil Well Potential (Test to be taken only after all load oil has been recovered)			
333 Bbls. Oil Per Day Based On 264 Bbls In 19 Hours; None Bbls Water Per Day Based On _____ Bbls			
In _____ Hours; Gas Production During Test: 231 MCF;		Gas-Oil Ratio: 875 Method Of Producing: Flow Chk. Size: 12/64	

NEAREST PRODUCTION TO THIS DISCOVERY (Includes past and present oil or gas producing areas and zones whether this discovery is based on horizontal or vertical separation):

Pool Name North Bagley	Name of Producing Formation Middle Penn	Top of Pay 9516	Bottom of Pay 9524	Currently Producing? Yes
Horizontal Distance and Direction from Subject Discovery Well to the Nearest Well in this Pool 4150' West		Vertical Distance from Subject Discovery Zone to Producing Interval this Pool 641		

NEAREST COMPARABLE PRODUCTION (includes past and present oil or gas production from this pay or formation only):

Pool Name	Top of Pay	Bottom of Pay	Currently Producing?
Horizontal Distance and Direction from Subject Discovery Well to the Nearest Well in this Comparable Pool			

None within 2 mile radius that was researched.

Is "County Deep" Discovery Allowable Requested for Subject Discovery Well?	If Yes, Give Name, Location, and Depth of Next Deepest Oil Production in this County
--	--

Is the Subject Well Multiple Completion?	Is Discovery Allowable Requested for other Zone(s)?	If Yes, Name all Such Formations
No	No	

LIST ALL OPERATORS OWNING LEASES WITHIN ONE MILE OF THIS WELL (Attach additional sheet if necessary)

NAME	ADDRESS
Southland Royalty Company	1405 Wilco Building - Midland, Texas
Texas Pacific Oil Company	Box 4067 - 511 W. Ohio - Midland, Texas
Sunset International Petroleum Company	Suite 308 - 201 Wall Building - Midland, Texas

Attach evidence that all of the above operators have been furnished a copy of this application. Any of said operators who intends to object to the designation of the subject well as a discovery well, eligible to receive a discovery allowable, must notify the appropriate District Office and the Santa Fe Office of the Commission of such intent in writing within ten days after receiving a copy of this application.

Remarks

CERTIFICATION

I hereby certify that all rules and regulations of the New Mexico Oil Conservation Commission have been complied with, with respect to the subject well, and that it is my opinion that a bona fide discovery of a hitherto unknown common source of oil supply has been made in said well. I further certify that the discovery allowable for the subject well, if authorized, will be produced from the subject zone in this well only. Further, that the information given herein and attached hereto is true and complete to the best of my knowledge and belief.

R. Kerr
R. Kerr Signature

Production Superintendent
Position

November 22, 1966
Date

January 18th regular hearing

Newspapers:

SF
Hobbs

CASE 3515

In the matter of the application of the Oil Conservation Commission of New Mexico upon its own motion for an order for the creation of the Vada-Pennsylvanian Pool in Lea County comprising the NW/4 of Section 20, Township 9 South, Range 34 East, and for the assignment of approximately 48,960 barrels of oil discovery allowable to the discovery well, Midwest Oil Corporation's Vada Lee Pruitt Well No. 1, located in Unit C of said Section 20. (This portion of Case 3515 for

and/the creation of the following pool:

West Ranger Lake-Devonian Gas Pool in
Township 12 South, Range 34 East, Lea
County;

and for the extension of the following pools in Lea County:

Arkansas Junction-San Andres Pool
North Bagley-Lower Pennsylvanian Pool
North Bagley-Middle Pennsylvanian Pool
Inbe-Pennsylvanian Pool
Monument-Tubb Pool
Scarborough Yates-Seven Rivers Pool
North Vacuum-Abo Pool
Wantz-Abo Pool

"And for the creation of the North Bagley Wolfcamp Pool in Lea County comprising the NW/4 of Section 11, Township 11 South, Range 33 East, and for the assignment of approximately 44,240 barrels of oil discovery allowable to the discovery well, Southern Natural Gas Company's State "C" well No 1, located in Unit C of said Section 11.

3515 only relating to the creation of the Vada-Pennsylvanian Pool only, is being readvertised and redocketed to clarify the description of the location of the pool's location. The pool actually came on for hearing December 16, 1966, and was created by Order No. R-3166.

December 16, 1966
Order

66 DEC 5 10 10 AM '66
SOUTHERN NATURAL GAS COMPANY

EXPLORATION AND PRODUCTION

P. O. BOX 1513 - ESPERSON BUILDING

HOUSTON, TEXAS 77001

November 22, 1966

HOBBS OFFICE O. C. C.

Nov 28 10 55 AM '66

New Mexico Oil Conservation Commission
P. O. Box 1980
Hobbs, New Mexico 88240

Re: Form "C-109" Application For Discovery Allowable, North Bagley Area, Lea County, New Mexico

Gentlemen:

Southern Natural Gas Company has completed its State "C" #1 well in the North Bagley Field area and more particularly, in Section 11, T11S R33E, and is hereby making application for a discovery allowable, since this well is completed in a new pool.

Attached is a copy of your form "C-109" (Application for Discovery Allowable and Creation of a New Pool) and in accordance with the provisions of Rule 509, we are attaching a map of the area, showing the wells and operators to the best of our knowledge; also attached is a copy of the Sonic-Gamma Ray log, indicating the tops of the major zones in this well. A drill stem test was conducted and the bottom hole shut-in pressure was found to be 3165 PSIG.

By copy of this letter, we are transmitting a copy of form "C-109" to all of the operators owning leases within one mile of Southern's State "C" #1 well. To the best of our knowledge, there are no wells completed in the Wolfcamp zone correlative to the Wolfcamp in Southern's well within a two mile radius.

It would be appreciated if you would grant a discovery allowable for this well. If you need any further information, please call me.

Yours very truly,

SOUTHERN NATURAL GAS COMPANY

R. H. Kerr
R. H. Kerr
Production Superintendent

DOCKET MAILED

RHK/pb
Attachments

cc: Southland Royalty Company - 1405 Wilco Building - Midland, Texas
Texas Pacific Oil Company - P. O. Box 4067 - Midland, Texas
Sunset International Petroleum Company - 201 Wall Building - Midland, Texas

Date 1-5-67

Exhibit 74

EUGENE DIETZGEN CO.
MADE IN U. S. A.

NO. 340-T33 DIETZGEN GRAPH PAPER
5 YEARS BY MONTHS

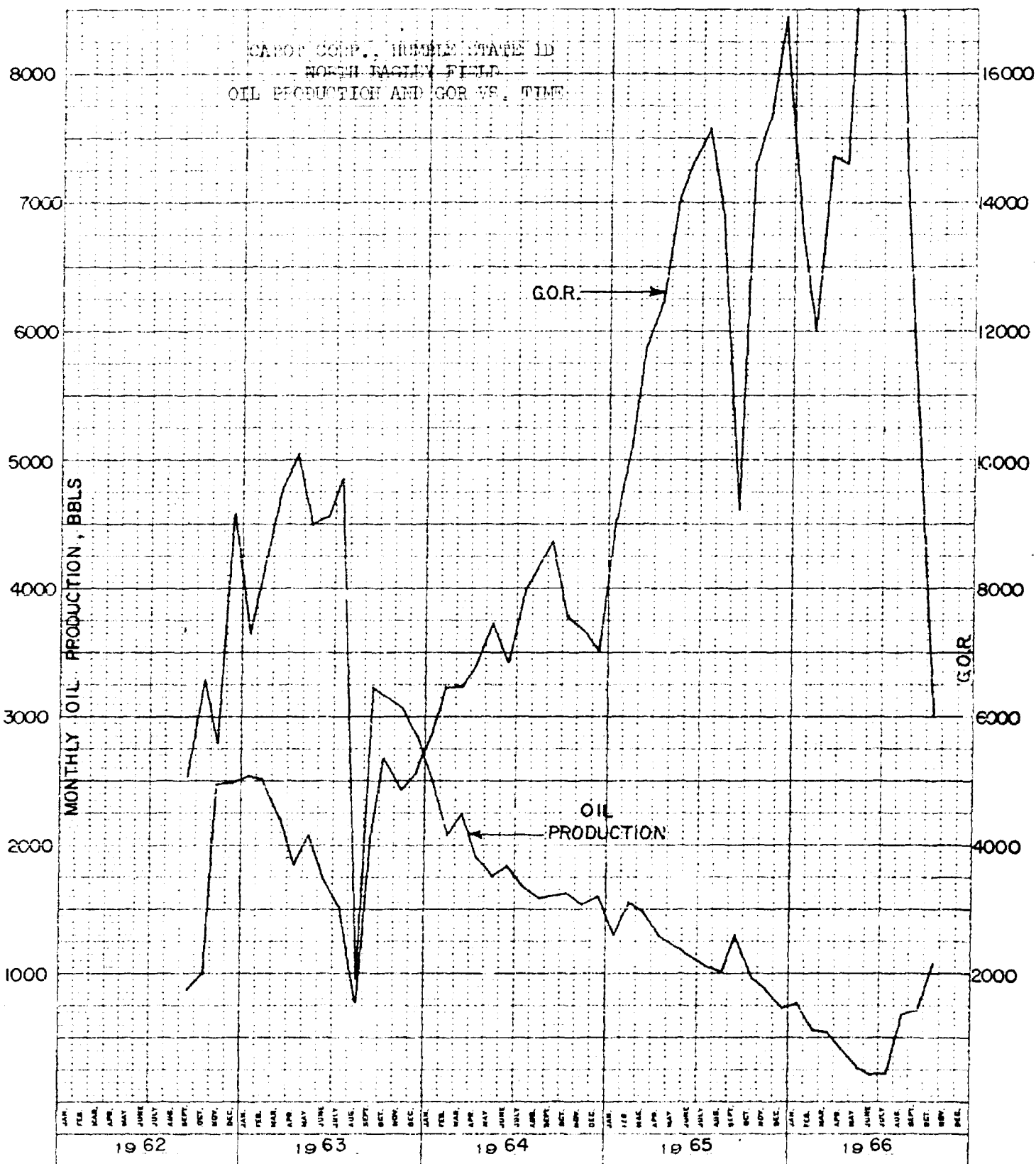


Exhibit #5

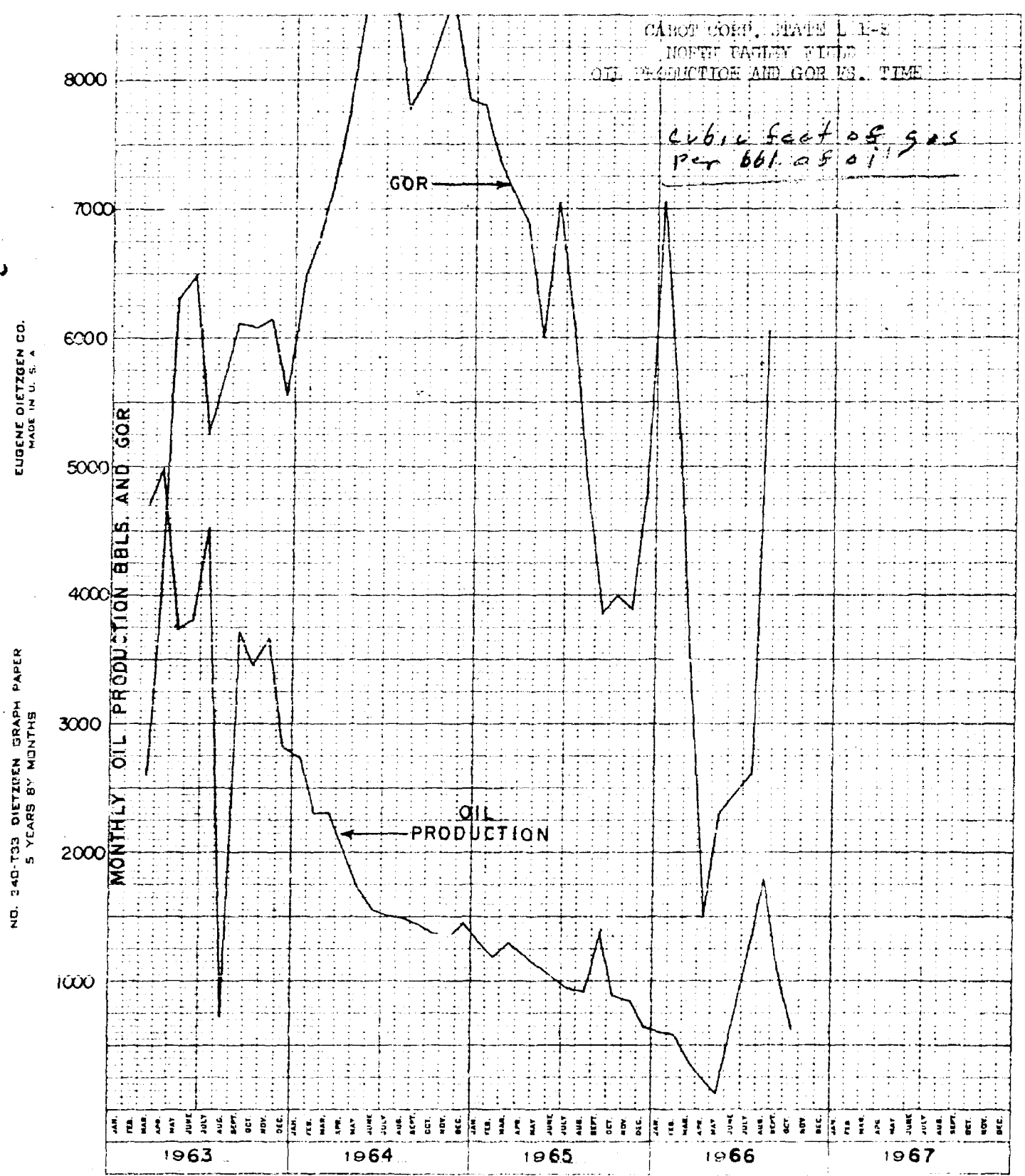


Exhibit #6

EUGENE DIETZGEN CO.
MADE IN U. S. A.

NO. 340-133 DIETZGEN GRAPH PAPER
5 YEARS BY MONTHS

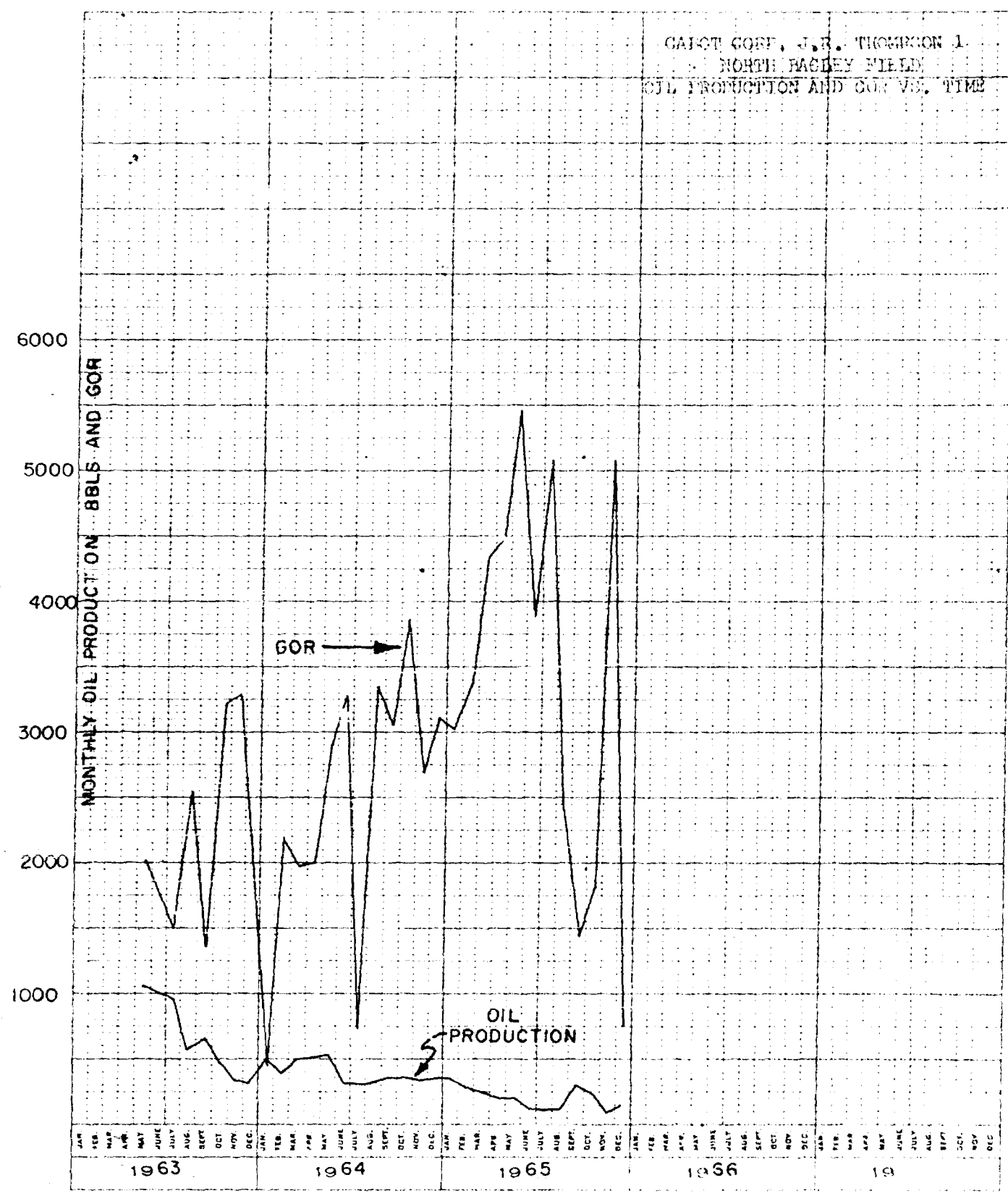


Exhibit #7

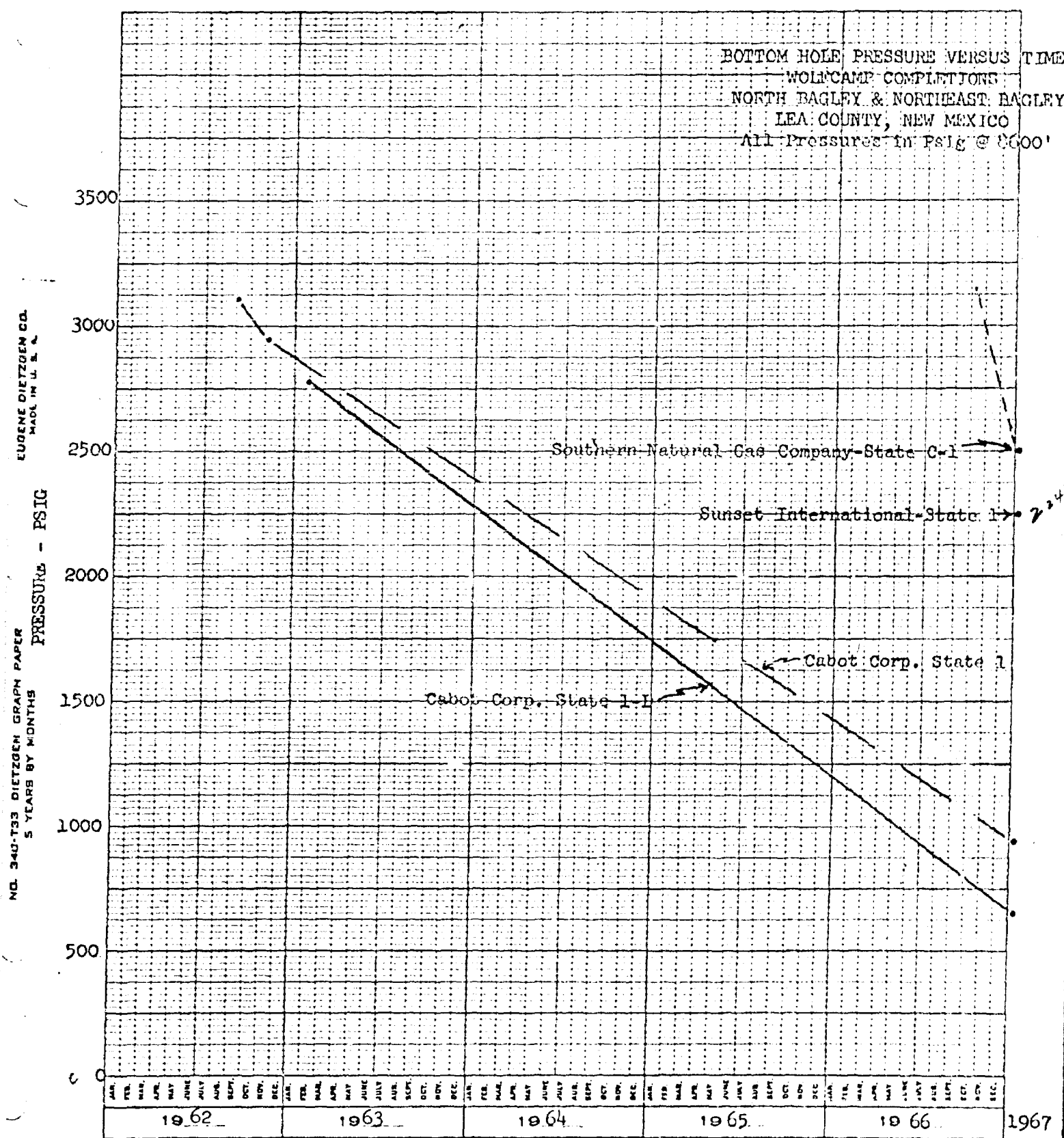


Exhibit #8

CALCULATION OF RESERVOIR PERMEABILITY
FROM DRILL STEM TEST PRESSURE BUILD UP
SOUTHERN NATURAL GAS COMPANY
STATE C-1 WELL
WOLFCAMP ZONE
NORTHEAST BAGLEY
LEA COUNTY, NEW MEXICO

$$k = \frac{(162.5) (QUB_0)}{(mh)}$$

Where:

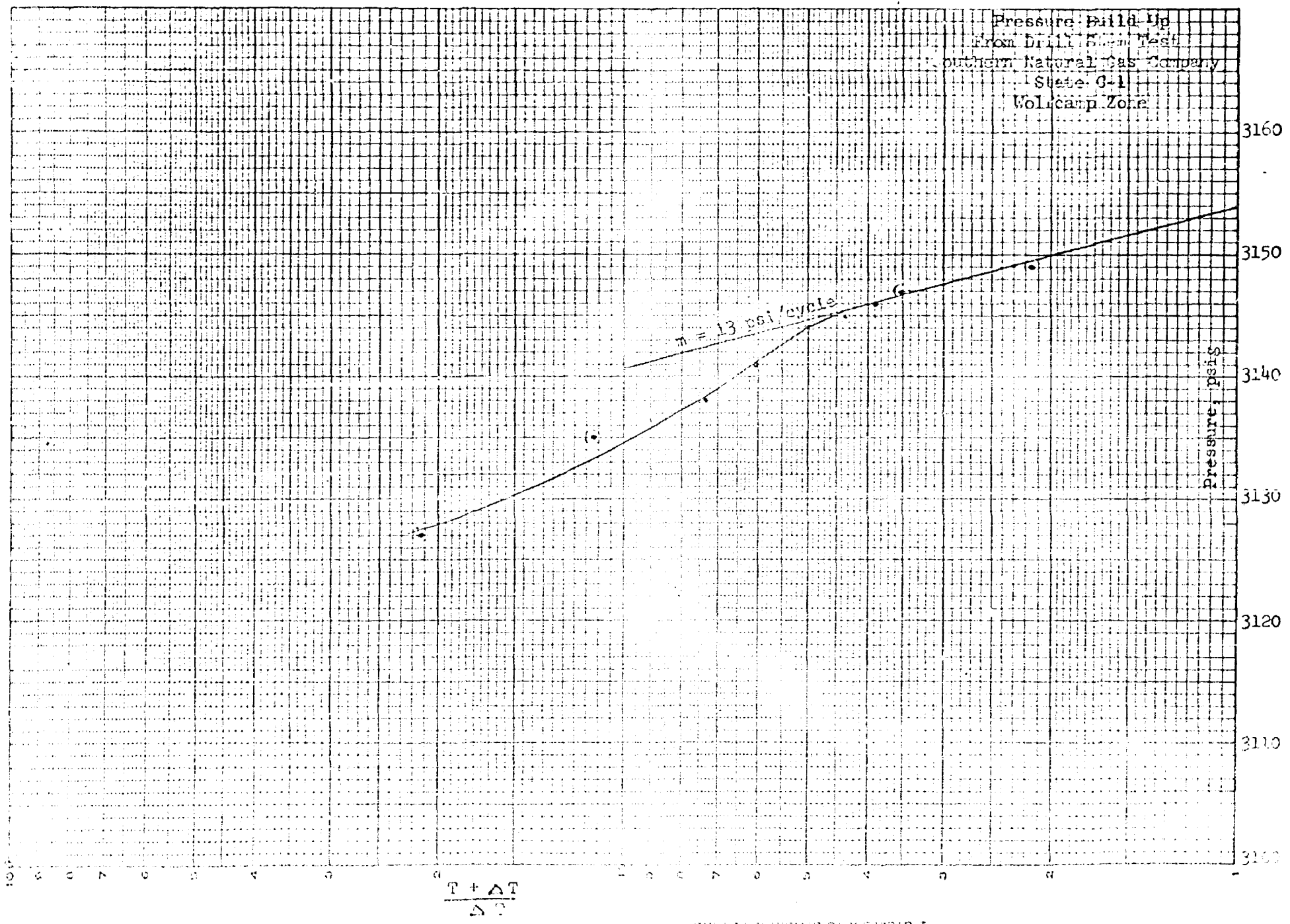
k	=	Reservoir permeability, md.	
Q	=	Flow rate on drill stem test	= 927 bbl/day
U	=	Reservoir oil viscosity	= .42 cp
B ₀	=	Formation volume factor	= 1.3
m	=	Slope of build up curve	= 13 psi/cycle
h	=	Avg thickness of formation in the vicinity of the State C-1	= 11.5'

$$k = \frac{(162.5) (.42) (1.3)}{(13) (11.5)}$$

$$= 550 \text{ md}$$

gam/pb
1-16-67

Exhibit # 8A



LOGS BY S. A. W. 100000

2 CYCLES X 10 DIVISIONS PER INCH
 SEMI-LOGARITHMIC
 FOR PRESSURE BUILD-UP

Exhibit #9

APPROXIMATE PERMEABILITY NECESSARY TO SATISFY PRESSURE DIFFERENTIAL
EXISTING BETWEEN WOLFCAMP COMPLETIONS
NORTH BAGLEY & NORTHEAST BAGLEY
LEA COUNTY, NEW MEXICO

$r_w = .5 \text{ feet}$
 $r_e = 11000 \text{ feet}$
 $P_w = 948\text{-psig}$
 $P_e = 2502\text{-psig}$
 $U = .42 \text{ cp.}$
 $h = 12.6 \text{ feet}$
 $B_o = 1.3 \text{ bbls/bbl}$
 $\text{Gravity} = 45^\circ @ 60^\circ\text{F}$
 $\text{Sol. GOR} = 1000 \text{ cu.ft/bbl}$
 $Q = 100 \text{ bbls stock tank oil/day}$
 $k = \frac{QUB_o (\ln r_e/r_w) (1000)}{7.08 h \Delta p}$
 $k = \frac{(100) (.42) (1.3) \ln 22000 \times (1000)}{7.08 \times 12.6 \times 1554}$
 $k = \frac{(42) (1.3) (10.0) \times 1000}{(7.08) (12.6) (1554)}$
 $k = 3.9 \text{ md.}$

hkh/pb
1-16-67