

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

IN THE MATTER OF A HEARING CALLED ON A
MOTION OF THE COMMISSION TO CONSIDER
THE PROPER SPACING FOR THE DEVELOPMENT
OF THE MOHALL-MADISON POOL IN BOTTINEAU
AND RENVILLE COUNTIES, NORTH DAKOTA,
DEFINE THE LIMITS OF SAID FIELD AND POOL
AND ENACT SUCH SPECIAL FIELD RULES AS
NECESSARY.

CASE NO. 778
ORDER NO. 841

ORDER OF THE COMMISSION

BY THE COMMISSION:

Pursuant to legal notice this cause came on for hearing at 9:30 a.m. on 15 February 1966, at Bismarck, North Dakota, before the Industrial Commission of North Dakota, hereinafter referred to as the "Commission."

NOW, on this 17 day of March, 1966, the Commission, a quorum being present, having considered the testimony adduced, and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

(1) That geological and engineering evidence presented to the Commission bearing on the matter of well spacing indicates that the Mohall-Madison pool as classified and defined by this order should be developed on a pattern of one well to 80 acres in order to drain efficiently the recoverable oil from said pool, assure orderly and uniform development, avoid the drilling of unnecessary wells, and prevent waste in a manner to protect correlative rights.

(2) That 80-acre spacing in this pool will result in the efficient and economical development of the field as a whole and will operate so as to prevent waste and provide maximum ultimate recovery, will avoid the drilling of unnecessary wells and will protect correlative rights.

(3) That certain special field rules are necessary to prevent waste and protect against the pollution of surface waters.

IT IS THEREFORE ORDERED:

(1) That the following described tracts of land in Bottineau and Renville Counties, North Dakota, be and the same are hereby designated the Mohall Field:

BOTTINEAU COUNTY

Township 162 North, Range 83 West, 5th PM
All of section 31 and W/2 of section 32

Township 161 North, Range 83 West, 5th PM
All of section 6 and W/2 of section 5

RENVILLE COUNTY

Township 162 North, Range 84 West, 5th PM
E/2 of section 36

Township 161 North, Range 84 West, 5th PM
E/2 of section 1

together with those additional quarter-quarter sections, or governmental lots corresponding thereto as may be proven productive by wells drilled as direct offsets to wells included in the limits as set forth above, provided further that such extensions of the pool boundaries shall include only sufficient acreage to form a spacing unit for such wells.

(2) That the Mohall-Madison Pool be, and the same is hereby defined, as that accumulation of crude oil and natural gas found below the top of the Frobisher-Alida interval and above the top of the Tilston interval within the limits of the Mohall Field as defined above.

(3) That 80-acre spacing is hereby established for the Mohall-Madison Pool in Bottineau and Renville Counties, North Dakota.

(4) That all wells drilled in the Mohall-Madison Pool or within 1 1/2 miles thereof, shall be located in the center of the southwest and northeast quarters of the governmental quarter sections, or lots corresponding thereto.

(5) That the spacing units be rectangular in shape and consist of any two adjacent quarter-quarter sections (or governmental lot or lots corresponding thereto) containing not less than 72 acres as determined by, or in accordance with governmental survey, located within the same quarter section.

(6) That no well shall be drilled or produced in the above mentioned field except in conformity with the spacing pattern set forth above without a special order of the Commission after due notice and hearing.

(7) That the following special field rules be, and the same are hereby enacted and shall apply to the subsequent drilling and operation of wells in the Mohall Field.

(a) That the casing program of all wells drilled hereafter in said Field shall include at least two strings of pipe set in accordance with the following program:

(i) The surface string shall consist of new or reconditioned pipe that has been previously tested to one thousand (1000) pounds per square inch. The casing shall be set and cemented at a point not higher than one hundred and fifty (150) feet below the surface of the ground. Cementing shall be by the pump and plug method, and sufficient cement shall be used to fill the annular space back of the pipe to the surface of the ground, or the bottom of the cellar. Cement shall be allowed to stand a minimum of twelve (12) hours before drilling the plug or instituting tests.

(ii) The producing, or oil string, shall consist of new or reconditioned pipe that has been previously tested to three thousand (3000) pounds per square inch. Cementing shall be by the pump and plug method, and sufficient cement shall be used to fill one and one-half (1 1/2) times the annular space between the shoe and a point fifty (50) feet above the bottom of the Spearfish Formation, but not less than 250 sacks of cement shall be used, and the cement shall be allowed to stand twenty-four (24) hours before drilling the plug or initiating tests.

(b) The producing, or oil string, shall be set below the base of the Spearfish and the string shall be tested by either lowering the fluid level or by application of pump pressure. If the test is made by lowering the fluid level, the well shall be bailed dry or at least to a point midway to the bottom of the string and the top of the cement, behind the string, and shall be allowed to stand a minimum of two (2) hours. If, after that period the fluid level shows a rise equivalent to two (2) percent of the distance bailed, the string shall be repaired so as to exclude water. Thereafter the casing shall be again tested in the same manner. If the test is made by application of pump pressure, a pressure of at least fifteen hundred (1500) pounds per square inch shall be applied. If, at the end of thirty (30) minutes this pressure drops one hundred and fifty (150) pounds per square inch or more, the string shall be repaired so as to exclude water. Thereafter the casing shall be again tested in the same manner. Further work shall not proceed until a satisfactory test has been obtained.

(c) All christmas tree fittings and well-head connections shall have a working pressure of at least one thousand (1000) pounds per square inch or a test pressure of at least two thousand (2000) pounds per square inch.

(d) The gas-oil ratio of each well in the field shall be determined four times annually during the months of February, May, August, and November, and reported to the State Geologist within fifteen (15) days after the end of the month in which they are determined. All measurements shall be made under the supervision of the State Geologist or his designated representatives.

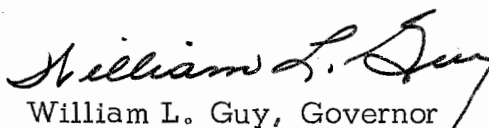
(e) Any well with a gas-oil ratio of over two thousand (2000) cubic feet per barrel shall have the allowable oil production adjusted in accordance with Rule 506 in Industrial Commission's Order No. 1, General Rules and Regulations for the conservation of crude oil and natural gas for the state of North Dakota.

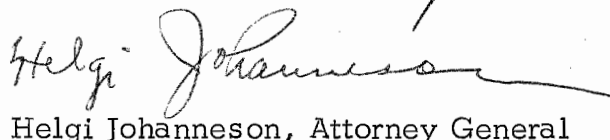
(f) The reservoir pressure of all flowing wells, and the static and working fluid levels of all pumping wells, shall be determined semi-annually during the months of May and November. The results thereof shall be reported to the State Geologist on or before the 15th of the month following the month in which the measurements were made. All pressure determinations shall be measured at or adjusted to a datum of two thousand five hundred and fifty (2550) feet below sea level and after the well has been shut in for a period of approximately forty-eight (48) hours. All reservoir pressure measurements, or fluid level determinations, shall be made under the supervision of the State Geologist or his designated representative, and by methods approved by the State Geologist.

(8) That this order shall cover all the Mohall-Madison Pool, common source of supply of crude oil and natural gas, as hereinabove defined, and shall continue in full force and effect until further order of the Commission or until the last producing well in this pool has been plugged and abandoned.

DONE, at Bismarck, North Dakota, this 17 day of March, 1966.

THE NORTH DAKOTA INDUSTRIAL COMMISSION


William L. Guy, Governor


Helgi Johanneson, Attorney General


Arne Dahl, Commissioner of Agriculture & Labor

THIS FORM MUST BE FILLED OUT AND HANDED TO THE REPORTER IN
ATTENDANCE AT THE HEARING

STATE INDUSTRIAL COMMISSION

STATE OF NORTH DAKOTA

APPEARANCE

Place Bismarck Date FEB 15 1966 Docket No. 778

Name William R. Pearce vs. _____

Address Bismarck

Appearing for Amvada

STATE OF NORTH DAKOTA

SS

AFFIDAVIT OF
MAILING

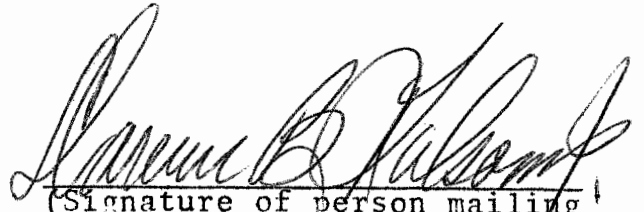
COUNTY OF GRAND FORKS

I, Clarence B. Folsom, Jr., being first duly sworn upon oath, depose and say: That I am over twenty-one years of age; that on the 4 day of April, 1966, I enclosed in separate envelopes true and correct copies of the attached Order No. 841 of the North Dakota State Industrial Commission, and deposited the same in the United States Post Office at the University Station, University of North Dakota, Grand Forks, North Dakota, with postage thereon fully paid, directed to: Listed below

all of whom filed written appearances at the hearing of the Industrial Commission on Case No. 778.

Mr. William R. Pearce, Box 400, Bismarck, North Dakota

Mr. Ernest R. Fleck, Box 1436, Bismarck, North Dakota


(Signature of person mailing
Order and preparing Affidavit)

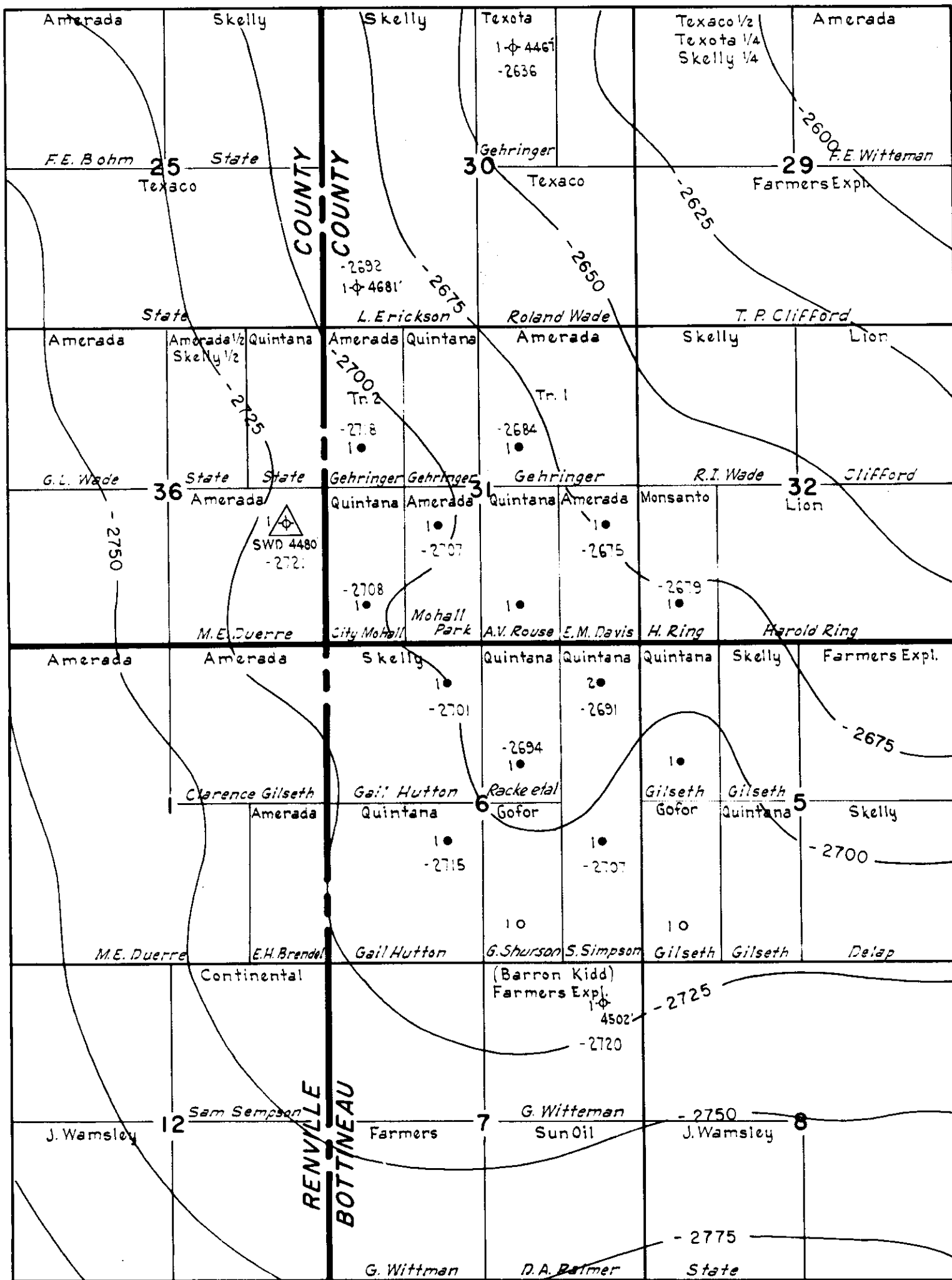
Subscribed and sworn to before
me this 4th day of April, 1966.

Clara B. Laughlin
Notary Public, Grand Forks County, North Dakota

My Commission expires July 1, 1971

R 84 W

R 83 W

T
162
NT
161
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MOHALL - MADISON POOL
BOTTINEAU & RENVILLE COUNTIES
NORTH DAKOTA

AMERADA PETROLEUM CORP.

EXHIBIT 1NO. 778DATE 2/15/66

PURPLE POINT STRUCTURE

CONTOUR INTERVAL = 25 FT.
 SCALE: 1 INCH = 2000 FEET

INDUSTRIAL COMMISSION
 STATE OF NORTH DAKOTA

Date FEB 15 1966 Case No. 778Introduced by APCExhibit 1Identified by APC

PERFORMANCE GRAPH
MOHALL - MADISON POOL

CODING BOOK COMPANY, INC. NORWOOD, MASSACHUSETTS.
PRINTED IN U.S.A.



NO. 4166. THREE YEARS BY MONTHS X 100 DIVISIONS.

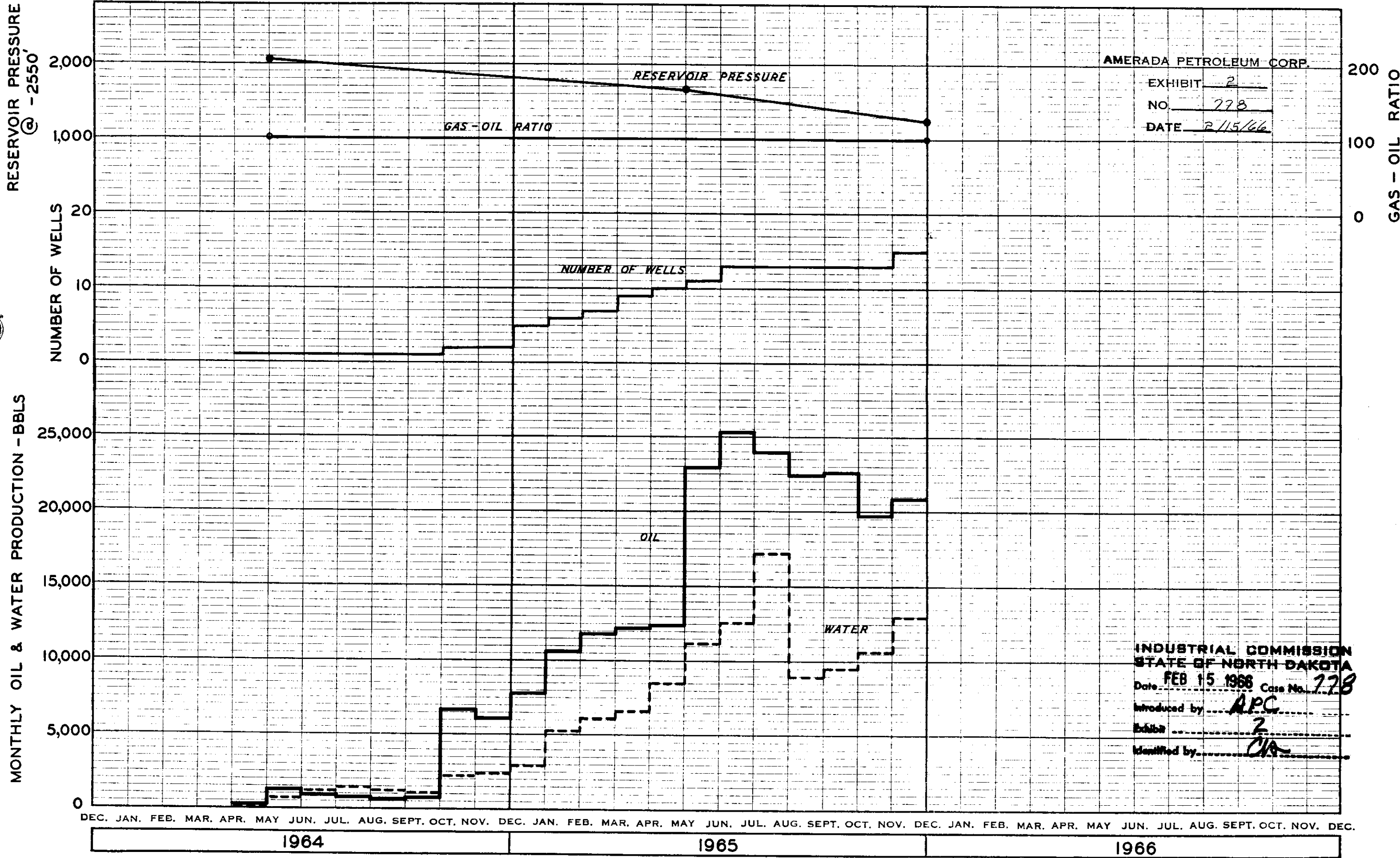


EXHIBIT 3NO. 778DATE 2/15/66

PRESSURES ON NEW WELLS
DURING DEVELOPMENT OF THE FIELD

MOHALL-MADISON FIELD

<u>WELL</u>	<u>DATE</u>	<u>BOTTOM HOLE PRESSURE AT -2550 FEET</u>
Original Field Pressure	Initial	2094
Amerada-Mohall Park No. 1	3-15-65	1936 (DST)
Amerada-Ivan Gehringer Tr.1, No.1	4- 8-65 4-14-65	1837 (DST) 1855
Amerada-Ivan Gehringer Tr.2, No.1	4-21-65	1929 (DST)
Amerada-E. M. Davis No. 1	7-21-65	1782 (DST)

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

Date FEB 15 1966 Case No. 778

Introduced by APC

Exhibit 3

Identified by OMA

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

Date FEB 15 1966 Case No. 778

Introduced by Quintana

Exhibit

Identified by

30
R 83 W

29

State Min. Int.
Glen Wade
Mohall, N.D.

State All Min. Int.
Louis R. Erickson
Mohall, N.D.

Ivan Gehringer
Mohall, N.D.

Roland I. Wade

William Willeman
& T.P. Clifford

36

31

32

Melvin E. Duerre
Mohall, N.D.

MOHALL

State All Min. Int.
Melvin E. Duerre

City of Mohall

Anna V. Rouse
et al

Harold Ring
Mohall, N.D.

State 1/2 Min.
Clarence Gilsath
Mohall, N.D.

State 1/2 Min. Int.
Gail Hutton

6

5

William Willeman
& T.P. Clifford

Melvin & Sylvia Duerre

Erwin
Brendel

Gail Hutton et al

Rhoda Rache
et al

Sam Simpson
et al

Lulu Belle & Carl O.
Gilsath - Mohall, N.D.

Eleanor &
Kathleen Delap

Orville P. Willeman
Mohall, N.D.

Sam Simpson
Mohall, N.D.

L.L. & M.J. Kelly
Mohall, N.D.

George Willeman
Mohall, N.D.

Arthur B. Smith
Sleepy Eye, Minn.

P.E. Wilms

12

7

8

Bank of N.D. 1/2 Min.
Orville P. Willeman
Mohall, N.D.

Frank J. Gehringer
Mohall, N.D.

William Willeman &
T.P. Clifford

Dorothy A. Palmer
(Cameron)
Chicago, Ill.

Bank of N.D. 1/2 Min. Otto B.
Gas
Mo

Renville
County

Bottineau
County

Quintana Petroleum Corporation
Bottineau and Renville Counties
North Dakota

MOHALL FIELD AREA

EXHIBIT

<u>Well</u>	<u>WELL TEST</u>			<u>CUMULATIVE PRODUCTION</u>
	<u>Date</u>	<u>BOPD</u>	<u>BWPD</u>	<u>to 1-1-66</u>
<u>MOHALL FIELD</u>				
City of Mohall #1	1-15-66	20	58	18,947
Rhoda Racke #1	1-12-66	157	75	63,206
Sam Simpson #1	1-30-66	57	24	20,559
Gail Hutton #1	2-2-66	20	43	11,815
Sam Simpson #2	1-28-66	63	6	19,407
Anna Rouse #1	1-30-66	150	29	35,833
Carl Gilseth #1	1-30-66	10	21	2,917
Field Total				<u>172,684</u>

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA
FEB 15 1966
Date:
Introduced by:
Exhibit:
Identified by:
Case No. 778

EXHIBIT

QUINTANA PETROLEUM CORPORATION WELL DATA MOHALL FIELD

Well	Date Completed	Total Depth	Perforations	K.B. Elevation	Date of Potential Test	Final 24 Hr. Potential Test				Pump Stroke In.	SPM	Working BBL In.
						24 Hr. Prod BOPD	SW Prod. %	Grav. ° API	Tubing			
City of Mohall #1	5/28/64	4,520'	4418' - 4430'	1,602'	6/30/64	40.06	42	28.6	2-3/8" - 4,464'	54	15	1-1/2"
Rhoda Racke #1	11/2/64	4,478'	4410' - 4429'	1,618'	11/7/64	248.40	8	28.2	2-3/8" - 4,477'	(Flowed)		
Sam Simpson #1	12/26/64	4,520'	4420-1/2 - 4421-1/2' 4426-1/2 - 4433-1/2'	1,614'	12/23/64	112	10	28.2	2-3/8" - 4,478'	64	15	1-3/4"
Gail Hutton #1	1/11/65	4,525'	4432 - 4433' 4433 - 4442'	1,620'	1/20/65	59	40	28.1	2-3/8" - 4,488'	40	15	1-3/4"
Sam Simpson #2	5/29/65	4,413'	4390 - 4407'	1,602'	6/8/65	202	5	26.8	2-3/8" - 4,409'	64	15	1-3/4"
Anna Rouse #1	6/14/65	4,404'	4382 - 4385' 4387 - 4388' 4389 - 4395' 4397 - 4402'	1,597'	6/13/65	237	11	28.2	2-3/8" - 4,403'	64	15	1-3/4"
Carl Gilseth #1	6/27/65	4,431'	4412 - 4413' 4414 - 4415'	1,607'	7/22/65	16	74	28.1	2-3/8" - 4,424'	64	15	1-3/4"

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA
FEB 15 1966
Date _____ Case No. 778
Introduced by QUINTANA
Exhibit 3
Identified by CR



SKELLY OIL COMPANY

P. O. Box 1650
TULSA, OKLAHOMA 74102



PRODUCTION DEPARTMENT

C. L. BLACKSHER, VICE PRESIDENT

W. P. WHITMORE, MGR. PRODUCTION

W. D. CARSON, MGR. TECHNICAL SERVICES

ROBERT G. HILTZ, MGR. JOINT OPERATIONS

GEORGE W. SELINGER, MGR. CONSERVATION

February 11, 1966

Re: Case No. 778
Mohall-Madison Pool
Bottineau & Renville Counties,
North Dakota

VIA AIR MAIL

Dr. Wilson Laird (2)
North Dakota Industrial Commission
University Station
Grand Forks, North Dakota

Dear Dr. Laird:

Skelly Oil Company has an interest in three wells presently located within the spaced area, plus one well immediately adjacent to the limits, and also various undeveloped tracts lying within and adjacent to the present outlines of the field.

It is our understanding that one of the operators in the field is going to propose that GOR's, now determined four times a year, and reservoir pressures, now determined twice a year, both be changed to an annual basis, to which we concur.

We also recommend that the present outline of the Mohall Field be changed so as to eliminate Section 36-T162N-R84W, and also eliminate Section 1-T161N-R84W, and add therein the E/2 of the E/2 of Section 32-T162N-R83W, and the E/2 of the E/2 of Section 5-T161N-R83W to include the existing wells in the Mohall Field.

Yours very truly,

George W. Selinger

GWS:br

AFFIDAVIT OF PUBLICATION

STATE OF NORTH DAKOTA,
County of Bottineau

ss.

Betty Erickson of said State and County, being duly sworn, on her oath, says: That she is the bookkeeper of The Bottineau Courant, a legal newspaper of general circulation, printed and published in the City of Bottineau, North Dakota, and has been during the time hereinafter mentioned; that the advertisement of Notice of publication

a printed copy of which is hereto annexed, was printed and published in each issue of said newspaper for a period of 1 consecutive weeks, to-wit:

February 2 1966; 19
19 ; 19
19 ; 19
19 ; 19

Betty Erickson

Subscribed and sworn to before me this second day of

February, A. D. 1966.

Notary Public, Bottineau County, N. D.

Publication Fee \$ 5.00 My commission expires 19

Received payment , 19

NOTICE OF PUBLICATION
N. D. INDUSTRIAL COMMISSION
BISMARCK, NORTH DAKOTA

The State of North Dakota by its Industrial Commission hereby gives notice pursuant to law and the rules and regulations of said Commission promulgated thereunder, of the following public hearing to be held at 9:30 a.m. on February 15, 1966, in the Hearing Room, State Capitol, in Bismarck, North Dakota.

STATE OF NORTH DAKOTA TO: All named parties and persons having any right, title, interest, or claim in the following cases and notice to the public. CASE NO. 778: On a motion of the Commission to consider the proper spacing for the development of the Mohall-Madison Pool in Bottineau and Renville Counties, North Dakota, define the limits of said field and pool and enact such special field rules as necessary. CASE NO. 779: On a motion of the Commission to consider the proper spacing for the development of the Southwest Haas Field in Bottineau County, North Dakota, define the limits of said field and pool and enact such special field rules as may be necessary.

N. D. INDUSTRIAL COMMISSION
William L. Guy, Governor

1t

Notary Public, BOTTINEAU CO., N. DAK.
My Commission Expires May 1, 1970

Affidavit of Publication

STATE OF NORTH DAKOTA
County of Renville

ss.

**NOTICE OF PUBLICATION
N. D. INDUSTRIAL COMMISSION
BISMARCK, NORTH DAKOTA**

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**N. D. INDUSTRIAL COMMISSION
William L. Guv. Governor**

Publication Fees --- \$ 4.76 ---

Notary Fees --- \$ 5.01 .25 ---

Received Payment,

Henry P. Sullivan

Henry P. Sullivan, of said County and State, being first duly sworn on oath says: That THE RENVILLE COUNTY FARMER is a weekly newspaper of general circulation, printed and published in the City of Mohall, in said County and State, by Henry P. Sullivan, and has been such newspaper during the times hereinafter mentioned, and that I, Henry P. Sullivan the undersigned, Publisher of said newspaper, have charge of the advertising department thereof, and have personal knowledge of all the facts stated in this affidavit and that the advertisement headed -----

NOTICE OF PUBLICATION INDUSTRIAL
COMMISSION ----- a printed copy of which
is hereto attached, was printed and published in the said newspaper for one successive issues, as follows:

February 2 19 66 19
19 19
19 19

that the full amount of fees for publishing same, to-wit; the sum of \$ 4.76 insures solely to the benefit of the publisher of THE RENVILLE COUNTY FARMER; that no agreement or understanding for a division thereof has been made with any other persons, and that no part thereof has been agreed to be paid to any person whomsoever.

Henry P. Sullivan
Subscribed and sworn to before me this 3 day of

February A. D. 19 66

My Commission Expires

Margaret Rodacker
Notary Public, North Dakota

Margaret Rodacker, Notary Public, State of North Dakota
My Commission Expires Aug. 24, 1968.