

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

CASE NO. 778
ORDER NO. 841

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.

ORDER OF THE COMMISSION

BY THE COMMISSION:

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

NOW, on this 17th 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 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 consists 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 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, in Bismarck, North Dakota, this 17th day of March, 1966.

THE NORTH DAKOTA
INDUSTRIAL COMMISSION

/s/ William L. Guy
William L. Guy, Governor

/s/ Helgi Johanneson
Helgi Johanneson, Attorney General

/s/ Arne Dahl
Arne Dahl, Commissioner of Agriculture & Labor