

BEFORE THE INDUSTRIAL COMMISSION  
OF THE STATE OF NORTH DAKOTA

CASE NO. 210  
ORDER NO. 229

IN THE MATTER OF THE HEARING CALLED ON  
THE MOTION OF THE INDUSTRIAL COMMISSION  
OF NORTH DAKOTA TO CONSIDER THE  
TEMPORARY SPACING PATTERN FOR THE  
DEVELOPMENT OF THE DICKINSON-HEATH POOL  
IN STARK COUNTY, NORTH DAKOTA, AND  
PRESCRIBE SUCH SPECIAL FIELD RULES AS MAY  
BE NECESSARY.

TEMPORARY ORDER OF THE COMMISSION

BY THE COMMISSION:

Pursuant to legal notice this cause came on for hearing at 9:30 a.m. on April 15, 1958, at Bismarck, North Dakota, before the Industrial Commission of North Dakota, hereinafter referred to as the "Commission."

NOW, on this 25th day of April, 1958, 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 due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That geological and engineering evidence, presented to the Commission, bearing on the matter well spacing indicates that the Dickinson-Heath Pool, as classified and defined by this temporary order should, for a period not to exceed eighteen (18) months from date of this order, be developed on a pattern of one well to 160 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.

(3) That a temporary 160 acre spacing in the Heath Pool in this field 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.

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

IT IS THEREFORE ORDERED:

(1) The Dickinson-Heath Pool discovered by the Atlantic Refining Company's Kadrmas #1 well, located in the NE SE Section 31, Township 140 N., Range 96 W., is hereby classified and defined as that common source of supply of oil found below the bottom of the Minnelusa and above the Otter Formations in and under the following described tracts of land in Stark County, North Dakota, to wit:

TOWNSHIP 140 NORTH, RANGE 96 WEST, 5TH PM  
ALL OF SECTIONS 31 AND 32, AND THE S/2 OF SECTIONS 29 AND 30,

TOWNSHIP 139 NORTH, RANGE 96 WEST, 5TH PM  
THE N/2 OF SECTIONS 5 AND 6,

together with those additional 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 effective this date 160 acres per well is established as the temporary spacing for the development of the Dickinson-Heath Pool.

(3) That all wells drilled in the Dickinson-Heath Pool shall be located approximately in the center of the northeast quarter-quarter sections (or governmental lots corresponding thereto).

(4) That spacing units consist of any quarter section (or governmental lots corresponding thereto) containing not less than 140 acres as determined by, or in accordance with, governmental survey.

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

(6) 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 Dickinson Heath Pool.

(a) That the casing program of all wells drilled hereafter in said pool 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 pounds (1000) per square inch. The casing shall be set and cemented at a point not higher than six hundred (600) 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 the top of the Amsden Formation, but not less than 300 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 at least as low as the top of the producing formation. 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 again be 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 representative.

(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 five thousand three hundred feet (5300) below sea level and after the well has been shut in for a period of approximately forty-eighty (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.

(7) That this order shall cover all the Dickinson-Heath common source of supply of crude oil and natural gas, as herein above defined, and shall continue in full force and effect for 18 months from the date hereof.

DONE, at Bismarck, North Dakota, this 25th day of April, 1958.

THE NORTH DAKOTA  
INDUSTRIAL COMMISSION

/s/ John E. Davis  
John E. Davis, Governor

/s/ Leslie R. Burgum  
Leslie R. Burgum, Attorney General

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