

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

CASE NO. 175
ORDER NO. 189

IN THE MATTER OF THE HEARING CALLED ON
THE MOTION OF THE INDUSTRIAL COMMISSION
OF NORTH DAKOTA FOR THE PURPOSE OF
ESTABLISHING A TEMPORARY SPACING PATTERN
FOR THE DEVELOPMENT OF THE DICKINSON
FIELD, DISCOVERED BY THE LEACH OIL
CORPORATION'S WM. KALANEK #1, LOCATED IN
SW NW, SECTION 32, T.140N., R.96W., STARK
COUNTY, NORTH DAKOTA, PRESCRIBE LIMITS OF
THE FIELD AND ESTABLISH 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
October 15, 1957, at Bismarck, North Dakota, before the Industrial
Commission of North Dakota, hereinafter referred to as the "Commission".

NOW, on this 25th day of October 1957, 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 of well spacing indicates that the
Dickinson Field 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 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.

(3) That temporary 80-acre spacing in the Madison 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 Field discovered by the Leach Oil Corporation's Wm.
Kalaneck #1 well, located in the SW NW Section 32, Township 140 North,
Range 96 West, is hereby classified and defined as that common source of
supply of oil found in the Madison formation 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-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 80 acres per well is established as the temporary spacing for the development of the Dickinson Field.

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

(4) That spacing units be rectangular in shape and consist of any two adjacent quarter-quarter sections (or governmental lots corresponding thereto) containing not less than 70 acres as determined by or in accordance with governmental survey and lying within the same quarter section.

(5) That no well shall be drilled or produced in said field 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 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 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 not less than twenty (20) feet below the base of the last Charles salt and not higher than the gas-oil contact. 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 six thousand two hundred and fifty (6250) feet 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 Field common source of supply of crude oil and natural gas, as herein above defined, and shall continue in full force and effect until further order of the Commission.

DONE, at Bismarck, North Dakota this 25th day of October, 1957.

THE NORTH DAKOTA INDUSTRIAL COMMISSION

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

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

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