

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 ESTAB-
LISHING 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, T140N., R. 96 W.,
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 25 day of Oct, 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. Kalanek #1 well, located in the SW NW Section 32, Township 140N., Range 96 W., 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 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 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) per cent 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 feet (6250) 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.

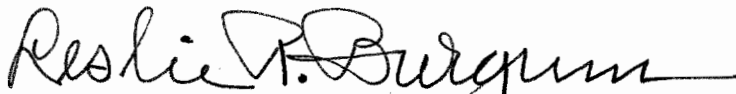
(7) That this order shall cover all the Dickinson Field common source of supply of crude oil and natural gas, as herein above defined, and shall continue in full force and effect until further order of the Commission.

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

THE NORTH DAKOTA INDUSTRIAL COMMISSION



John E. Davis, Governor



Leslie R. Burgum, Attorney General



Math Dahl, Commissioner of Agriculture & Labor

October 23, 1957

Mr. Walter Mohn
Secretary to Governor
State Capitol Building
Bismarck, North Dakota

Dear Walt:

I am enclosing herewith an order embodying our recommendations for the disposal of Cases 168, 169, 175, and 176.

This leaves two cases still pending but these are the ones involving the units about which Mr. Dahl had several questions. We have just received copies of the unit agreements and it will take us some time to translate them into common English and we hope to be able to make a recommendation when we meet the Commission on November 1st.

Very truly yours,

Wilson M. Laird
State Geologist

WML:jjs

Enc.

R. 96 W.

LEACH OIL CORP.
4. 2. 61
L-1939

Jack Ermantraut



TESTIMONY OF HERBERT G. OFFICER, LEACH OIL CORPORATION,

IN NORTH DAKOTA INDUSTRIAL COMMISSION

CASE NO. 175 - OCTOBER 15, 1957

It is the purpose of this testimony to present available geological and engineering data concerning the Leach Oil Corporation, et al #1 Wm. Kalanek, C SW NW 32-140N-96W, Stark County, North Dakota, discovery well of the Dickinson Field, and to make recommendations concerning spacing pattern and field boundaries for this area.

The Leach Oil Corporation, et al #1 Kalanek was spudded on July 6, 1957 with Rutledge Drilling Co. as the drilling contractor. 9 5/8" surface casing was cemented at 735' with 500 bags, an amount sufficient to circulate cement to the surface. Although a total of 7 drill stem tests were conducted of this well, the most significant was that of the interval 8749-8808', which had gas to the surface in 30 minutes, burning a 3-6' flare throughout the 4-hour period the tool was open. Recovery consisted of 3550' of clean black oil, estimated 28° API, plus 450' of muddy oil. Pressures were as follows: HP 5150-4950#, FP 220-1490#, ISIP (60 min.) 3975#, FSIP (120 min.) 3800#. This test was conducted in the "Nesson Pay Zone" which was topped at 8747'. The well was drilled to a total depth of 9100' with no further commercial shows, so 5 1/2" casing was cemented at 8874' with 600 sacks of cement. A swabbing test of the perforated interval 8746-66', following a total of 2000 gallons acid, recovered oil at the rate of 13 bbls. per hour. After setting a bridging plug at 8742', perforations 8690-8724' yielded approximately 10 bbls. hourly of clean oil following 1000 gallon acid treatment. The bridging plug then was drilled and the interval 8800-10' perforated and treated with 500 gallons acid. No immediate test was available of this interval. Subsequently, however, a swabbing test of all three perforated zones gave a fluid recovery of 15 bbls. hourly of approximately 20° API black oil, with a trace of salt water. The well has been placed on pumping production with an initial potential of 140 bbls. of 25° API gravity oil (corrected), plus 10% salt water in a 24-hour period ending September 22, 1957. The well presently is shut in awaiting satisfactory market facilities.

In view of the limited geological data available from the drilling of only one producing well, it is impossible at this time to define the producing limits of the Dickinson Field. We have, therefore, proposed a somewhat arbitrary field outline embracing approximately 4 sections, including the following:

<u>Township 140 North, Range 96 West</u>	
S 1/2	Section 29
S 1/2	Section 30
All	Section 31
All	Section 32
<u>Township 139 North, Range 96 West</u>	
N 1/2	Section 5
N 1/2	Section 6

Within this tentative field outline oil and gas leases are held by Atlantic Refining Co., Placid Oil Co., Superior Oil Co., and Leach Oil Corporation, et al. You will note on Exhibit "A" that the well is centrally situated in this proposed field outline. Undoubtedly, the field will be subject to revisions as additional development wells are drilled.

The Leach Oil Corporation respectfully submits the following recommendations for consideration by this Commission:

1. That the tentative outline of Dickinson Field consist of the S 1/2 Section 29, S 1/2 Section 30, All Section 31, All Section 32 in Township 140 North, Range 96 West, and the N 1/2 Section 5, N 1/2 Section 6 in Township 139 North, Range 96 West.
2. That a temporary 80 acre spacing pattern be established for the field.
3. That all wells drilled to the Nesson Pay in the Dickinson Field be situated in the Southwest (SW) and Northeast (NE) quarters of governmental quarter sections. Further, that 80 acre drill site units lie in a common governmental quarter section.
4. That reservoir pressures which are required on a semi-annual basis, be taken during the months of November and May.
5. That gas oil ratio tests which are required quarterly be determined during the months of February, May, August and November.

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 _____ Date OCT 15 1957 Docket No. 175

vs. _____
Name HERBERT G. OFFICER

Address Box 1476 BISMARCK

Appearing for LEWIS OIL CORP.

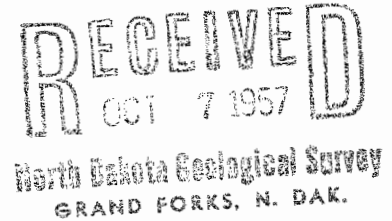
THOMAS W. LEACH, PRESIDENT

J. M. KELSCH, VICE PRESIDENT

NORTH AMERICAN ROYALTIES, INC.
PROVIDENT LIFE BUILDING
P.O. BOX 1476
BISMARCK, NORTH DAKOTA

OCTOBER 4, 1957

DR. WILSON M. LAIRD
STATE GEOLOGIST
UNIVERSITY STATION
GRAND FORKS, NORTH DAKOTA



DEAR SIR:

FOLLOWING A MEETING OF THE TWO UNDERSIGNED MEMBERS OF THE FIELD NOMENCLATURE COMMITTEE, WE RESPECTFULLY SUBMIT THE FOLLOWING:

THE DICKINSON FIELD: OPENED BY THE LEACH OIL CORPORATION
ET AL #1 WM. KALANEK, C SWNW-32-
140N-96W, STARK COUNTY, NORTH DAKOTA.
THIS MADISON DISCOVERY WAS COMPLETED
SEPTEMBER 22, 1957, PUMPING 140 BBLs.
OF 25°API OIL DAILY, PLUS 10% WATER,
FROM PERFORATIONS 8690-8724', 8746-
8766' AND 8800-8810', FOLLOWING 3500
GAL. ACID TREATMENT. THE WELL WAS
DRILLED TO A TD OF 9100' AND HAS A
PLUG BACK TD OF 8847', WITH 5½" CASING
CEMENTED AT 8874'.

WOULD YOU PLEASE REVIEW THIS SUGGESTION AND, IF YOU APPROVE, SUBMIT
YOUR RECOMMENDATION TO THE INDUSTRIAL COMMISSION FOR ITS CONSIDERATION.

VERY TRULY YOURS,

Herbert G. Officer
HERBERT G. OFFICER

G. C. Flanagan
G. C. FLANAGAN

HGO:GT

CC: G. C. FLANAGAN
HARRY BOYD-SNEE

LEGAL ADVERTISING

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 October 15, 1957, 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. 170: On a motion of the Commission to consider the market demand for crude oil to be produced in the State of North Dakota during the month of November 1957. CASE NO. 175: On a motion of the Commission to establish the temporary spacing for an oil pool discovered by the Leach Oil Corporation et al, in their Wm. Kalanek #1, located in SW NW 32-140-96, Stark County, North Dakota, establish the limits of said pool and such special field rules as may be necessary.

N.D. INDUSTRIAL COMMISSION

John E. Davis, Governor

*Sent to
Stark*