

BEFORE THE INDUSTRIAL COMMISSION  
OF THE STATE OF NORTH DAKOTA

CASE NO. 5964  
(CONTINUED)  
ORDER NO. 6932

IN THE MATTER OF A HEARING CALLED ON A  
MOTION OF THE COMMISSION TO CONSIDER THE  
PROPER SPACING FOR THE DEVELOPMENT OF  
THE DICKINSON-LODGEPOLE POOL, STARK  
COUNTY, NORTH DAKOTA, REDEFINE THE LIMITS  
OF THE FIELD, AND ENACT SUCH SPECIAL FIELD  
RULES AS MAY BE NECESSARY.

ORDER OF THE COMMISSION

BY THE COMMISSION:

Pursuant to legal notice this cause came on for hearing at 9:00 a.m. on the 28th day of September, 1994, in Bismarck, North Dakota, before an examiner appointed by the Industrial Commission of North Dakota, hereinafter referred to as the "Commission."

NOW, on this 17th day of October, 1994, 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 relative to the matter of well spacing indicates that the Dickinson-Lodgepole Pool, as classified and defined in this order, should be developed on a pattern of one well to 320 acres in order to drain efficiently the recoverable oil from said pool, assure rapid development, avoid the drilling of unnecessary wells, and prevent waste in a manner that will protect correlative rights.

(3) That proper 320-acre spacing in the Lodgepole 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 the unrestricted flaring of gas produced from the Dickinson-Lodgepole Pool could be considered waste, and in order to minimize such, production from the pool should be restricted until the wells producing therefrom are connected to a gas gathering and processing facility.

(5) That engineering evidence presented to the Commission relative to the characteristics of productive Lodgepole reservoirs in the Dickinson Field area indicates that these reservoirs are undersaturated oil reservoirs with extremely high permeabilities. As a result, unrestricted production will result in a rapid decline in reservoir pressure. Without some form of pressure maintenance, reservoir pressures in a typical Lodgepole reservoir will quickly fall below bubble point resulting in significant loss of oil reserves.

(6) That certain special field rules are necessary to prevent waste and protect against the contamination and pollution of surface lands and

fresh waters.

IT IS THEREFORE ORDERED:

(1) That the Dickinson Field is hereby redefined as the following described tracts of land in Stark County, North Dakota:

TOWNSHIP 139 NORTH, RANGE 96 WEST, 5TH PM  
ALL OF SECTIONS 5 AND 6,

TOWNSHIP 139 NORTH, RANGE 97 WEST, 5TH PM  
ALL OF SECTIONS 1, 2, 3 AND 4,

TOWNSHIP 140 NORTH, RANGE 96 WEST, 5TH PM  
ALL OF SECTIONS 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21,  
22, 23, 27, 28, 29, 30, 31, 32 AND 33,

TOWNSHIP 140 NORTH, RANGE 97 WEST, 5TH PM  
ALL OF SECTIONS 13, 22, 23, 24, 25, 26, 27, 33, 34, 35 AND 36,

together with those additional quarter sections or governmental lots corresponding thereto as may be proven productive by wells drilled on lands within one mile of the boundaries of the field as set forth above, provided further that such extensions of the field boundaries shall include only sufficient acreage to form a spacing unit for such wells, and any intervening lands.

(2) That the Dickinson-Lodgepole Pool be, and the same is hereby defined as that accumulation of oil and gas found in the interval from below the base of the Mission Canyon Formation to above the top of the Bakken Formation within the limits of the field as set forth above.

(3) That effective this date, the proper spacing for the development of the Dickinson-Lodgepole Pool be, and the same is hereby set at one well to 320 acres.

(4) That all wells hereafter drilled to said pool shall be located not less than 660 feet from a spacing unit boundary nor closer than 1980 feet to a well permitted to or producing from the pool. Wells presently permitted to or producing from the pool that do not conform to this spacing pattern shall be considered exceptions.

(5) That the Dickinson-Lodgepole Pool is defined as all lands within the Dickinson Field boundary excluding tracts located within the Dickinson-Lodgepole Unit area described in Commission Order No. 6861, Finding (2).

(6) That spacing units in the Lodgepole Pool in the Dickinson Field shall consist of two adjacent quarter sections, or governmental lots corresponding thereto within the same section. The configuration of spacing units, either vertical or horizontal, shall be determined by the location of the first well in the section, such that the aforesaid well will be nearest to the center of the spacing unit. Spacing units for wells being equi-distant from the mid-section lines shall be designated by the operator; however, the Commission shall have continuing jurisdiction, and in the event that spacing units hereafter formed by this policy do not coincide with the geological and physical nature of the reservoir, the Commission may alter specific spacing units upon application by any interested party, after due notice and hearing.

(7) That no well shall be drilled hereafter in the Dickinson-Lodgepole Pool except in conformity with the regulations above without special order of the Commission after due notice and hearing.

(8) That the following rules concerning the casing, tubing and equipping of wells shall apply to the subsequent drilling and operation of wells in the Dickinson-Lodgepole Pool:

- (a) The surface casing shall consist of new or reconditioned pipe that has been previously tested to 1000 pounds per square inch. The casing shall be set and cemented at a point not less than 50 feet below the base of the Fox Hills Formation. Sufficient cement shall be used to fill the annular space outside the pipe to the surface of the ground or the bottom of the cellar, and sufficient scratchers and centralizers shall be used to assure a good cement job. Cement shall be allowed to stand a minimum of 12 hours before drilling the plug or initiating tests;
- (b) The producing or oil string shall consist of new or reconditioned pipe that has been previously tested to 2000 pounds per square inch. Casing shall be set and cemented at a point not higher than the top of the producing formation, or at a point approved by the Director. Sufficient cement shall be used and applied in such manner as to adequately protect and isolate all formations containing oil and/or gas, protect the pipe through salt sections encountered, and to isolate the Dakota-Lakota Series. The cement shall be allowed to stand a minimum of 24 hours before drilling the plug or initiating tests. After cementing, the casing shall be tested by application of pump pressure of at least 2000 pounds per square inch. If, at the end of 30 minutes this pressure shall have dropped 150 pounds per square inch or more, the casing shall be repaired. 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 well-head fittings and connections shall have a working pressure in excess of that to which they are expected to be subjected; and,
- (d) All wells shall be equipped with tubing; all tubing shall be of sufficient internal diameter to allow the passage of a bottom hole pressure gauge for the purpose of obtaining bottom hole pressure measurements.

(9) That the gas-oil ratio of each well shall be measured during the months of May and November, and the reservoir pressure of flowing wells shall be measured in the months of May and November, and in pumping wells when the rods are pulled but at least once annually and reported to the Director within 15 days following the end of the month in which they are determined. Pressure measurements shall be made at or adjusted to a subsea datum of 7270 feet after the well has been shut in for 48 hours. All gas-oil ratio and reservoir pressure determinations shall be made under the supervision of and by methods approved by the Director. The Director is authorized to waive these requirements if the necessity therefor can be demonstrated to his satisfaction.

(10) That wells completed or recompleted in the Dickinson-Lodgepole Pool, after the effective date of this order, shall be allowed to produce at an unrestricted rate for a period of 60 days commencing on the first day oil was produced through well-head equipment into tanks from the ultimate producing interval after casing has been run; after that, oil production from such wells shall not exceed an average of 200 barrels per day for a period of 60 days; after that, oil produced from such wells shall not exceed an average of 150 barrels of oil per day for a period of 60 days; thereafter, oil production from such wells shall not exceed an average of 100 barrels of oil per day. Immediately after the completion or recompletion of any well in the Dickinson-Lodgepole Pool, the operator shall file with the Director a completion report (Form 6). Within 30 days, or a reasonable time thereafter, following the filing of a completion report, a hearing shall be docketed to have the operator show cause why the production restrictions imposed herein should not remain in place until such

time as a plan of unitization and secondary recovery operations for the reservoir is submitted and considered by the Commission. However, any well not connected to a gas pipeline shall comply with the provisions of paragraph (13) below.

(11) That no salt water, drilling mud, crude oil, or waste oil shall be stored in pits in this field, except in an emergency, and approved by the Director.

(12) That in accordance with Commission Order No. 2099, the Dakota-Lakota Series in and under the Dickinson Field, is hereby designated a disposal reservoir, and the Director is authorized to approve requests to utilize wells in the field, as herein defined, for salt water disposal purposes.

(13) That all wells hereafter completed in the Dickinson-Lodgepole Pool and not connected to a gas pipeline shall be allowed to produce at an unrestricted rate for a period of 30 days commencing on the first day oil is produced through well-head equipment into tanks from the ultimate producing interval after casing has been run; thereafter, oil production from such wells shall not exceed an average of 100 barrels of oil per day; if and when such wells are connected to a gas gathering and processing facility production rates of the wells shall be in accordance with paragraph (10) above.

(14) That if the flaring of gas produced with crude oil from the Dickinson-Lodgepole Pool causes, or threatens to cause, degradation of ambient air quality, production from the pool shall be further restricted.

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

Dated this 17th day of October, 1994.

INDUSTRIAL COMMISSION  
STATE OF NORTH DAKOTA

/s/ Edward T. Schafer, Governor

/s/ Heidi Heitkamp, Attorney General

/s/ Sarah Vogel, Commissioner of Agriculture