

BEFORE THE INDUSTRIAL COMMISSION  
OF THE STATE OF NORTH DAKOTA

CASE NO. 28343  
(CONTINUED)  
ORDER NO. 30801

IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE APPLICATION OF KRAKEN OPERATING, LLC FOR AN ORDER AMENDING THE APPLICABLE ORDERS FOR THE BURG-BAKKEN POOL TO AUTHORIZE UP TO TEN WELLS TO BE DRILLED ON NINE STANDUP 1280-ACRE SPACING UNITS DESCRIBED AS SECTIONS 14 AND 23; SECTIONS 15 AND 22; SECTIONS 16 AND 21; SECTIONS 17 AND 20; SECTIONS 18 AND 19; SECTIONS 25 AND 36; SECTIONS 26 AND 35; SECTIONS 27 AND 34; AND SECTIONS 28 AND 33, T.159N., R.99W., WILLIAMS COUNTY, ND, AND GRANTING SUCH OTHER RELIEF AS MAY BE APPROPRIATE.

ORDER OF THE COMMISSION

THE COMMISSION FINDS:

(1) This cause originally came on for hearing at 9:00 a.m. on the 25th day of March, 2020. Counsel for Kraken Operating, LLC (Kraken) submitted a request on March 20, 2020 to continue this case to the regularly scheduled hearing in April 2020. There were no objections, the hearing officer granted the request, and this case was scheduled for hearing on April 22, 2020. Counsel for Kraken submitted a request on April 20, 2020 to continue this case to the regularly scheduled hearing in May 2020. There were no objections, the hearing officer granted the request, and this case was scheduled for hearing on May 27, 2020.

(2) The record in this case was left open until June 5, 2020 for written comments due to temporary hearing procedures implemented as a result of the 2020 COVID-19 pandemic. No comments were received and the record was closed on June 5, 2020.

(3) Kraken provided exhibits and testimony in this matter by sworn affidavits pursuant to North Dakota Administrative Code (NDAC) Section 43-02-03-88.1.

(4) Kraken made application to the Commission for an order amending the applicable orders for the Burg-Bakken Pool to authorize up to ten wells to be drilled on nine standup 1280-acre spacing units described as Sections 14 and 23; Sections 15 and 22; Sections 16 and 21; Sections 17 and 20; Sections 18 and 19; Sections 25 and 36; Sections 26 and 35; Sections 27 and

34; and Sections 28 and 33, Township 159 North, Range 99 West, Williams County, North Dakota (Sections 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 33, 34, 35, and 36), and granting such other relief as may be appropriate.

(5) Order No. 28979 entered in Case No. 26546, the most recent spacing order for the Burg-Bakken Pool, established proper spacing for the development of Zone I at one horizontal well per 640 acres, Zone II at one horizontal well per 1280 acres, Zone III at up to seven horizontal wells per 1280 acres, and Zone IV at one horizontal well per 2560 acres.

(6) Sections 14 and 23; Sections 15 and 22; Sections 16 and 21; Sections 17 and 20; Sections 18 and 19; Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; and Sections 28 and 33 are currently standup 1280-acre spacing units in Zone II in the Burg-Bakken Pool.

(7) Kraken's idealized development plan for each standup 1280-acre spacing unit described as Sections 14 and 23; Sections 15 and 22; Sections 16 and 21; Sections 17 and 20; Sections 18 and 19; Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; and Sections 28 and 33 is to drill ten horizontal wells approximately 464 feet apart parallel to the long axis, alternating between five in the middle member of the Bakken Formation and five in the first bench in the Three Forks Formation. Utilization of horizontal drilling technology as proposed would result in the wells being completed at a location or locations not in compliance with current applicable spacing orders for the Burg-Bakken Pool. The horizontal well design proposed may be preliminary and could be changed for various reasons which is permissible as long as the horizontal well design still justifies the spacing unit.

(8) The Commission enforces a policy which requires measurement inaccuracies in the directional survey equipment be considered when the angle between the horizontal lateral and the corresponding spacing unit boundary is ten degrees or less. Waiving potential tool error in the directional survey equipment when calculating the bottom hole location of any horizontal lateral in spacing units which allow multiple horizontal wells will allow said spacing units to be more efficiently developed.

(9) Kraken estimates the additional oil and gas to be recovered by each additional well will pay for the cost of drilling and completing the well and yield a profit, hence, each additional well will be economic.

(10) There were no objections to this application.

(11) If Kraken's activities are successful, greater ultimate recovery of oil and gas from the pool will be achieved which will prevent waste and the drilling of unnecessary wells in a manner which will not have a detrimental effect on correlative rights.

**IT IS THEREFORE ORDERED:**

(1) Sections 14 and 23; Sections 15 and 22; Sections 16 and 21; Sections 17 and 20; Sections 18 and 19; Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; and Sections 28 and 33, Township 159 North, Range 99 West, Williams County, North Dakota, are hereby established as standup 1280-acre spacing units for the exclusive purpose of drilling up to ten horizontal wells within each said spacing unit within the Burg-Bakken Pool and Zone IV is

hereby redefined to include said spacing units. Existing and future vertical and directional wells drilled within the spacing units herein established shall not be subject to this order.

(2) The Director is hereby authorized to exercise continuing jurisdiction in this matter to determine whether a horizontal well proposed or drilled upon the 1280-acre spacing units herein established has justified the creation of such unit, to require amendments or modifications to the permit to drill for such horizontal well, and to deny a permit to drill in the event a well is proposed to be drilled in a manner inconsistent with the evidence that justified such spacing unit.

(3) Provisions established herein for the Burg-Bakken Pool are for the exclusive purpose of drilling horizontal wells. Existing and future vertical and directional wells drilled within the area defined in paragraph (4) below shall not be subject to this order.

(4) The Burg Field is hereby defined as the following described tracts of land in Divide and Williams Counties, North Dakota:

TOWNSHIP 161 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35 AND 36,

TOWNSHIP 160 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 1 THROUGH 36, INCLUSIVE,

TOWNSHIP 159 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 1 THROUGH 36, INCLUSIVE.

(5) The Burg-Bakken Pool is hereby redefined as the following described tracts of land in Divide and Williams Counties, North Dakota:

ZONE I (640H)

TOWNSHIP 160 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 17 AND 24,

TOWNSHIP 159 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTION 4.

ZONE II (1280H-STANDUP)

TOWNSHIP 161 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35 AND 36,

TOWNSHIP 160 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 1 THROUGH 36, INCLUSIVE,

TOWNSHIP 159 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 AND 24.

ZONE III (7/1280H-STANDUP)

TOWNSHIP 159 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 30 AND 31.

ZONE IV (10/1280H-STANDUP)

TOWNSHIP 159 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 26, 27, 28, 29, 32, 33, 34, 35  
AND 36.

ZONE V (2560H-NORTH/SOUTH ORIENTATION-LEASE-LINE)

TOWNSHIP 159 NORTH, RANGE 99 WEST, 5TH PM  
ALL OF SECTIONS 29, 30, 31 AND 32.

(6) The Burg-Bakken Pool is hereby defined as that accumulation of oil and gas found in the interval from 50 feet above the top of the Bakken Formation to 50 feet below the top of the Three Forks Formation within the limits of the field as set forth above.

(7) All portions of the well bore not isolated by cement of any horizontal well in the Burg-Bakken Pool shall adhere to the following requirements unless specifically provided for in the respective zone below unless granted an exception by the Commission after due notice and hearing:

- (a) Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.
- (b) The lateral, heel portion of the lateral, or toe portion of the lateral in horizontal well bores shall be no closer than 500 feet to the most nearly parallel spacing unit boundary.
- (c) The Director is hereby authorized to reduce the setback from 500 feet to 200 feet for horizontal well bores where the angle of the heel portion of the lateral and the respective spacing unit boundary is less than 45° through the issuance of permit stipulations, whenever, in his opinion, the applicant has demonstrated that correlative rights will be protected.
- (d) The heel portion of the lateral in horizontal well bores where the angle of such is greater than 45° from the respective most nearly perpendicular spacing unit boundary, shall be no closer than 150 feet to said boundary.
- (e) The lateral or toe portion of the lateral in horizontal well bores where the angle of such is greater than 45° from the respective most nearly perpendicular spacing unit boundary, shall adhere to the following:
  - (i) For horizontal wells completed open hole, the total depth of the well bore shall be no closer than 150 feet to the boundary of the spacing unit;

- (ii) For horizontal wells completed with the production liner or casing cemented in the lateral, the total depth of the well bore shall be no closer than 50 feet to the boundary of the spacing unit, unless the horizontal well is stimulated through the shoe at the toe of the lateral whereby the total depth of the well bore shall be no closer than 150 feet to the boundary of the spacing unit; and
- (iii) For horizontal wells completed with the production liner or casing externally isolated in the lateral by the use of packers, the total depth of the well bore shall be no closer than 100 feet to the boundary of the spacing unit unless the horizontal well is stimulated through the shoe at the toe of the lateral whereby the total depth of the well bore shall be no closer than 150 feet to the boundary of the spacing unit.

(8) The Application for Permit to Drill (Form 1) for a horizontal well to be completed in the Burg-Bakken Pool shall include a well schematic which depicts the:

- (a) Proposed production casing setting depth at the heel relative to the spacing unit boundary;
- (b) Proposed completion style as open hole lateral, cemented liner or casing in the lateral, liner or casing externally isolated in the lateral by the use of packers, or other completion style; and
- (c) Proposed toe of the lateral including the location of the deepest perforation, completion sleeve, and/or external isolation packer.

(9) The Completion Report (Form 6) for a horizontal well completed in the Burg-Bakken Pool shall include a well schematic which depicts the:

- (a) Production casing setting depth at the heel relative to the spacing unit boundary;
- (b) Completion style as open hole lateral, cemented liner or casing in the lateral, liner or casing externally isolated in the lateral by the use of packers, or other completion style; and
- (c) Toe of the lateral including the location of the deepest perforation, completion sleeve, and/or external isolation packer.

(10) The proper spacing for the development of Zone I in the Burg-Bakken Pool is hereby set at one horizontal well per 640-acre spacing unit.

(11) Spacing units hereafter created in Zone I in the Burg-Bakken Pool shall consist of a governmental section.

(12) Zone I in the Burg-Bakken Pool shall not be extended except by further order of the Commission after due notice and hearing.

(13) The proper spacing for the development of Zone II in the Burg-Bakken Pool is hereby set at one horizontal well per standup 1280-acre spacing unit.

(14) Sections 13 and 24; Sections 14 and 23; Sections 15 and 22; Sections 25 and 36; Sections 26 and 35; Sections 27 and 34, Township 161 North, Range 99 West; Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; Sections 5 and 8; Sections 6 and 7; Sections 13 and 24; Sections 14 and 23; Sections 15 and 22; Sections 16 and 21; Sections 17 and 20; Sections 18 and 19; Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33; Sections 29 and 32; Sections 30 and 31, Township 160 North, Range 99 West, Divide County; Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; Sections 5 and 8; Sections 6 and 7; and Sections 13 and 24, Township 159 North, Range 99 West, Williams County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone II in the Burg-Bakken Pool.

(15) Spacing units hereafter created in Zone II in the Burg-Bakken Pool shall be standup spacing units consisting of two adjacent governmental sections.

(16) Zone II in the Burg-Bakken Pool shall not be extended except by further order of the Commission after due notice and hearing.

(17) The proper spacing for the development of Zone III in the Burg-Bakken Pool is hereby set at up to seven horizontal wells per standup 1280-acre spacing unit.

(18) Sections 30 and 31, Township 159 North, Range 99 West, Williams County, North Dakota, are hereby designated a standup 1280-acre spacing unit in Zone III in the Burg-Bakken Pool.

(19) Spacing units hereafter created in Zone III in the Burg-Bakken Pool shall be standup spacing units consisting of two adjacent governmental sections.

(20) Zone III in the Burg-Bakken Pool shall not be extended except by further order of the Commission after due notice and hearing.

(21) The proper spacing for the development of Zone IV in the Burg-Bakken Pool is hereby set at up to ten horizontal wells per standup 1280-acre spacing unit.

(22) Sections 14 and 23; Sections 15 and 22; Sections 16 and 21; Sections 17 and 20; Sections 18 and 19; Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33; and Sections 29 and 32, Township 159 North, Range 99 West, Williams County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone IV in the Burg-Bakken Pool.

(23) Spacing units hereafter created in Zone IV in the Burg-Bakken Pool shall be standup spacing units consisting of two adjacent governmental sections.

(24) Zone IV in the Burg-Bakken Pool shall not be extended except by further order of the Commission after due notice and hearing.

(25) The proper spacing for the development of Zone V in the Burg-Bakken Pool is hereby set at one lease-line horizontal well per 2560-acre spacing unit drilled on a north-south orientation.

(26) All portions of the well bore not isolated by cement of any horizontal well in Zone V in the Burg-Bakken Pool shall be located approximately down the north-south axis and comply with paragraph (7) above.

(27) Sections 29, 30, 31, and 32, Township 159 North, Range 99 West, Williams County, North Dakota, are hereby designated a 2560-acre spacing unit in Zone V in the Burg-Bakken Pool.

(28) One horizontal well shall be drilled and completed in both standup 1280-acre spacing units described as Sections 29 and 32; and Sections 30 and 31, Township 159 North, Range 99 West, Williams County, North Dakota, prior to completing any horizontal well in the lease-line 2560-acre spacing unit described as Sections 29, 30, 31, and 32, Township 159 North, Range 99 West, Williams County, North Dakota.

(29) Spacing units hereafter created in Zone V in the Burg-Bakken Pool shall consist of four adjacent governmental sections designated by the Commission.

(30) Zone V in the Burg-Bakken Pool shall not be extended except by further order of the Commission after due notice and hearing.

(31) The operator of any horizontally drilled well in the Burg-Bakken Pool shall cause to be made a directional survey of the well bore. The directional survey contractor shall file a certified survey with the Commission within 30 days after completion of the well in accordance with NDAC Section 43-02-03-25. The survey shall be of sufficient quality to enable the Commission to determine the entire completion location of the well and its terminus.

(32) The Director is hereby authorized to exercise continuing jurisdiction to determine whether any well proposed or drilled upon any spacing unit herein established has justified the creation of such unit, to require amendments or modifications to the permit to drill for such well, and to deny a permit to drill in the event a well is proposed to be drilled in a manner inconsistent with the evidence that justified the spacing requirements in the Burg-Bakken Pool.

(33) The Commission shall have continuing jurisdiction in this matter and specifically reserves the authority, upon its own motion or the motion of any interested party, to: (1) review the spacing requirements for the Burg-Bakken Pool; (2) determine whether the separate zones of spacing established herein are warranted; and, (3) make such further amendments or modifications to the spacing requirements for the Burg-Bakken Pool as the Commission deems appropriate.

(34) No well shall be drilled or produced in the Burg-Bakken Pool, as defined herein, except in conformity with the regulations above without special order of the Commission after due notice and hearing.

(35) The following rules concerning the casing, tubing and equipping of wells shall apply to the subsequent drilling and operation of wells in the Burg-Bakken 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. The quality of cement shall conform to the standards provided under NDAC Section 43-02-03-21. After cementing, the casing shall be tested by application of pump pressure of at least 1000 pounds per square inch. If, at the end of 30 minutes this pressure has dropped 100 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;
- (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 a manner as to protect and isolate all formations containing oil and/or gas, protect the pipe through salt sections encountered, and isolate the Dakota-Lakota Series. The cement shall be allowed to stand a minimum of 15 hours before drilling the plug or initiating tests. The quality of cement shall conform to the standards provided under NDAC Section 43-02-03-21. After cementing, the casing shall be tested by application of pump pressure of at least 1500 pounds per square inch. If, at the end of 30 minutes this pressure has 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; a tubing packer must also be utilized in flowing wells unless a waiver is obtained from the Director after demonstrating the casing will not be subjected to excessive pressure or corrosion; 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.

(36) The gas-oil ratio of all wells not connected to a gas gathering system shall be measured annually during the month of May. The reservoir pressure shall be measured in any well completed in the Burg-Bakken Pool if deemed necessary by the Director. Drill stem test pressures are acceptable for determining reservoir pressure. Pressure measurements shall be made at or adjusted to a subsea datum of 6500 feet. All gas-oil ratio and reservoir pressure determinations shall be made by methods approved by the Director and reported to the Director



within 15 days following the end of the month in which they are determined. The Director is authorized to waive these requirements if the necessity therefore can be demonstrated to his satisfaction. All additional gas-oil ratio and reservoir pressure determinations conducted on any well, but not specially required herein, shall be reported to the Director within 15 days following the end of the month in which they are determined.

(37) 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.

(38) The first horizontal well completed in each Burg-Bakken Pool non-overlapping spacing unit shall be allowed to produce at a maximum efficient rate.

(39) All wells completed in the Burg-Bakken Pool that have received an exemption to North Dakota Century Code Section 38-08-06.4 shall be allowed to produce at a maximum efficient rate.

(40) All infill horizontal wells, including overlapping spacing units, completed in the Burg-Bakken Pool, shall be allowed to produce at a maximum efficient rate for a period of 90 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; after that, such wells shall be allowed to continue to produce at a maximum efficient rate if the well or operator meets or exceeds the Commission approved gas capture goals. The gas capture percentage shall be calculated by summing monthly gas sold plus monthly gas used on lease plus monthly gas processed in a Commission approved beneficial manner, divided by the total monthly volume of associated gas produced by the operator. The operator is allowed to remove the initial 14 days of flowback gas in the total monthly volume calculation. The Commission will accept compliance with the gas capture goals by well, field, county, or statewide by operator. If such gas capture percentage is not attained at maximum efficient rate, the well(s) shall be restricted to 200 barrels of oil per day if at least 60% of the monthly volume of associated gas produced from the well is captured, otherwise oil production from such wells shall not exceed 100 barrels of oil per day.

The Commission will recognize the following as surplus gas being utilized in a beneficial manner:

- (a) Equipped with an electrical generator that consumes surplus gas from the well;
- (b) Equipped with a system that intakes the surplus gas and natural gas liquids volume from the well for beneficial consumption by means of compression to liquid for use as fuel, transport to a processing facility, production of petrochemicals or fertilizer, conversion to liquid fuels, separating and collecting the propane and heavier hydrocarbons; and
- (c) Equipped with other value-added processes as approved by the Director which reduce the volume or intensity of the flare by more than 60%.

(41) If the flaring of gas produced with crude oil from the Burg-Bakken Pool is determined by the North Dakota Department of Environmental Quality as causing a violation of the North

Dakota Air Pollution Control Rules (NDAC Article 33.1-15), production from the pool may be further restricted.

(42) This order shall cover all of the Burg-Bakken Pool, common source of supply of crude oil and/or natural gas as herein defined, and continues 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 16th day of July, 2020.

INDUSTRIAL COMMISSION  
STATE OF NORTH DAKOTA

By the Director, on behalf of the Commission

/s/ Lynn D. Helms, Director