

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

CASE NO. 9876
ORDER NO. 11625

IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE APPLICATION OF CONTINENTAL RESOURCES, INC. FOR AN ORDER EXTENDING THE FIELD BOUNDARIES AND AMENDING THE FIELD RULES FOR THE SADLER-BAKKEN POOL TO CREATE AND ESTABLISH THREE 1280-ACRE SPACING UNITS COMPRISED OF SECTIONS 26 AND 35; SECTIONS 27 AND 34; AND SECTIONS 28 AND 33; T.161N., R.95W., DIVIDE COUNTY, ND, AUTHORIZING THE DRILLING OF ONE HORIZONTAL WELL ON EACH SPACING UNIT AND FOR SUCH OTHER RELIEF AS IS APPROPRIATE.

ORDER OF THE COMMISSION

THE COMMISSION FINDS:

- (1) This cause came on for hearing at 9:00 a.m. on the 16th day of January, 2008.
- (2) Continental Resources, Inc. (Continental) made application to the Commission for an order extending the field boundaries and amending the field rules for the Sadler-Bakken Pool to create and establish three 1280-acre spacing units comprised of Sections 26 and 35; Sections 27 and 34; and Sections 28 and 33, Township 161 North, Range 95 West, Divide County, North Dakota (Sections 26, 35, 27, 34, 28, and 33), authorizing the drilling of one horizontal well on each spacing unit and for such other relief as is appropriate.
- (3) Order No. 10557 entered in Case No. 8987, the most recent spacing order for the Sadler-Bakken Pool, established proper spacing for the development of Zone I at one well per 160 acres, Zone II at one horizontal well per 640 acres, and Zone III at one horizontal well per 1280 acres.
- (4) Sections 26, 27, and 28 are adjacent to the Sadler Field and within the buffer zone of Zone I in the Sadler-Bakken Pool. Sections 33, 34, and 35 are adjacent to the buffer zone of

Zone I in the Sadler-Bakken Pool. The W/2 of Section 28 is also in the Dolphin Field. The only well in the W/2 of Section 28 is a dry hole.

(5) Removing the W/2 of Section 28 from the Dolphin Field and placing it in the Sadler Field will allow for orderly development and will not have a detrimental effect on correlative rights.

(6) Continental presented evidence that the Sadler-Bakken Pool underlies Sections 26, 27, 28, 33, 34, and 35; therefore, the boundary of the Sadler Field should be extended to include such lands.

(7) There are no wells currently permitted to or producing from the Sadler-Bakken Pool in Sections 26, 27, 28, 33, 34, or 35.

(8) Continental plans to develop the Bakken Pool under Sections 26 and 35; Sections 27 and 34; and Sections 28 and 33 by drilling single-lateral horizontal wells from surface locations 500 feet from the north line and 1320 feet from the west line of the north sections. The casing will be set horizontally in the Bakken Pool south of the surface locations at a legal location and the laterals will then be drilled to bottom hole locations 500 feet from the south line and 1320 feet from the west line of the south sections. Utilization of horizontal drilling technology in this manner may result in the wells being completed at a location or locations not in compliance with current applicable spacing orders for the Sadler-Bakken Pool.

(9) Continental has a Joint Exploration Agreement with Samson Resources Company in the area and the operator of a spacing unit will be the operator who proposes a well.

(10) Evidence and testimony presented to the Commission indicates that the proposed horizontal wells will produce oil that might otherwise not be produced.

(11) Flexibility with respect to spacing unit size and the location of wells in the Sadler-Bakken Pool is essential to efficiently produce as much recoverable oil and gas as economically possible.

(12) Pursuant to Section 38-08-07 of the North Dakota Century Code, spacing units must be of uniform size and shape for the entire pool, except when found necessary to prevent waste, avoid the drilling of unnecessary wells, or to protect correlative rights, the Commission is authorized to divide any pool into zones and establish spacing units for each zone, which units may differ in size and shape from those established in any other zone.

(13) Zones of different spacing within the Sadler-Bakken Pool will allow the flexibility needed for utilization of horizontal drilling.

(14) Granting maximum flexibility in spacing unit size and in locating and drilling horizontal wells will result in economic and efficient development of the oil and gas resources in a manner that prevents waste and protects correlative rights.

(15) If Continental'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.

(16) Branex Resources, Inc. submitted a letter alleging the applicant did not provide notification of the hearing in accordance with North Dakota law. They also stated they have no particular objection to the formation of the proposed spacing units. North Dakota Administrative Code (NDAC) Section 43-02-03-90 requires fifteen days' notice by publication of such notice in a newspaper of general circulation in Bismarck, North Dakota, and in a newspaper of general circulation in the county where the land affected or some part thereof is situated. Proper notice of this matter was given.

(17) There were no objections to this application.

(18) Approval of this application will prevent waste, avoid the drilling of unnecessary wells, and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) Sections 26 and 35; Sections 27 and 34; and Sections 28 and 33, Township 161 North, Range 95 West, Divide County, North Dakota, are hereby established as 1280-acre spacing units for the exclusive purpose of drilling a horizontal well within each said spacing unit within the Sadler-Bakken Pool and Zone III is hereby extended to include said spacing units. Existing and future vertical and directional wells drilled within the spacing units herein established shall conform to the applicable spacing requirements providing for the orderly development of Zone I in the Sadler-Bakken Pool.

(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 units, 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) The Dolphin Field is hereby redefined as the following described tracts of land in Divide County, North Dakota:

TOWNSHIP 161 NORTH, RANGE 95 WEST, 5TH PM
ALL OF SECTIONS 29, 30, 31 AND 32, AND THE S/2 OF SECTIONS 19 AND 20,

TOWNSHIP 160 NORTH, RANGE 96 WEST, 5TH PM
ALL OF SECTIONS 2 AND 11, AND THE NW/4 OF SECTION 1,

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.

(4) The Sadler Field is hereby redefined as the following described tracts of land in Divide County, North Dakota:

TOWNSHIP 161 NORTH, RANGE 95 WEST, 5TH PM

ALL OF SECTIONS 2, 11, 14, 15, 16, 17, 21, 22, 23, 26, 27, 28, 33, 34 AND 35, THE SW/4 OF SECTION 4, THE SE/4 OF SECTION 5, THE S/2 OF SECTION 8, THE S/2 AND NW/4 OF SECTION 9, AND THE N/2 OF SECTION 20,

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.

(5) The Sadler-Bakken Pool is hereby redefined as the following described tracts of land in Divide County, North Dakota:

ZONE I

TOWNSHIP 161 NORTH, RANGE 95 WEST, 5TH PM

ALL OF SECTIONS 2, 11, 14, 15, 16, 17, 21, 22, 23, 26, 27, 28, 33, 34 AND 35, THE SW/4 OF SECTION 4, THE SE/4 OF SECTION 5, THE S/2 OF SECTION 8, THE S/2 AND NW/4 OF SECTION 9, AND THE N/2 OF SECTION 20,

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.

ZONE II (Exclusively for horizontal wells)

TOWNSHIP 161 NORTH, RANGE 95 WEST, 5TH PM

ALL OF SECTION 17.

ZONE III (Exclusively for horizontal wells)

TOWNSHIP 161 NORTH, RANGE 95 WEST, 5TH PM

ALL OF SECTIONS 2, 11, 14, 15, 16, 21, 22, 23, 26, 27, 28, 33, 34 AND 35.

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

(7) The proper spacing for the development of Zone I in the Sadler-Bakken Pool is hereby set at one well per 160 acres.

(8) All wells hereafter drilled in Zone I in the Sadler-Bakken Pool shall be located not less than 500 feet from a spacing unit boundary. Wells presently permitted to or producing from the pool that do not conform to this spacing pattern shall be considered exceptions.

(9) Spacing units in Zone I in the Sadler-Bakken Pool shall consist of a governmental quarter section or governmental lots corresponding thereto.

(10) Provisions established herein for Zone II in the Sadler-Bakken Pool are for the exclusive purpose of drilling horizontal wells. Existing and future vertical and directional wells drilled within the area defined as Zone II in paragraph (5) above shall conform to the applicable spacing requirements for the orderly development of Zone I in the Sadler-Bakken Pool.

(11) The proper spacing for the development of Zone II in the Sadler-Bakken Pool is hereby set at one horizontal well per 640 acres.

(12) All portions of the well bore not isolated by cement of any horizontal well hereafter drilled in Zone II in the Sadler-Bakken Pool shall be no closer than 660 feet to the boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment need not be considered except when determined necessary by the Director.

(13) Spacing units in Zone II in the Sadler-Bakken Pool shall consist of a governmental section or governmental lots corresponding thereto.

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

(15) Provisions established herein for Zone III in the Sadler-Bakken Pool are for the exclusive purpose of drilling horizontal wells. Existing and future vertical and directional wells drilled within the area defined as Zone III in paragraph (5) above shall conform to the applicable spacing requirements for the orderly development of Zone I in the Sadler-Bakken Pool.

(16) The proper spacing for the development of Zone III in the Sadler-Bakken Pool is hereby set at one horizontal well per 1280 acres.

(17) All portions of the well bore not isolated by cement of any horizontal well hereafter drilled in Zone III in the Sadler-Bakken Pool shall be no closer than 660 feet to the boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment need not be considered except when determined necessary by the Director.

(18) Sections 2 and 11; Sections 14 and 23; Sections 15 and 22, Sections 16 and 21; Sections 26 and 35; Sections 27 and 34; and Sections 28 and 33, Township 161 North, Range 95 West, Divide County, North Dakota, are hereby designated 1280-acre spacing units in Zone III in the Sadler-Bakken Pool.

(19) Spacing units hereafter created in Zone III in the Sadler-Bakken Pool shall consist of two adjacent governmental sections or governmental lots corresponding thereto.

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

(21) The operator of any horizontally drilled well in the Sadler-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.

(22) 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 Sadler-Bakken Pool.

(23) 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 Sadler-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 Sadler-Bakken Pool as the Commission deems appropriate.

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

(25) The following rules concerning the casing, tubing and equipping of wells shall apply to the subsequent drilling and operation of wells in the Sadler-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;
- (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 to 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 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 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; 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.

(26) 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 within 45 days in all wells hereinafter completed in the Sadler-Bakken Pool. Drill stem test pressures are acceptable for determining reservoir pressure. Pressure measurements shall be made at or adjusted to a subsea datum of 6280 feet after the well has been shut in for a minimum of 48 hours. 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 therefor can be demonstrated to his satisfaction. All additional gas-oil ratio and reservoir pressure determinations conducted on any well, but not specifically required herein, shall be reported to the Director within 15 days following the end of the month in which they are determined.

(27) No saltwater, drilling mud, crude oil, or waste oil shall be stored in pits in this field, except in an emergency, and approved by the Director.

(28) All wells in the Sadler-Bakken Pool shall be allowed to produce at a maximum efficient 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 the foregoing restrictions shall be removed, and the wells shall be allowed to produce at a maximum efficient rate. The Director is authorized to issue an administrative order allowing unrestricted production at a maximum efficient rate for a period not to exceed 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, if the necessity therefor can be demonstrated to his satisfaction.

(29) If the flaring of gas produced with crude oil from the Sadler-Bakken Pool causes, or threatens to cause, degradation of ambient air quality, production from the pool shall be further restricted.

(30) This order shall cover all of the Sadler-Bakken Pool common source of supply of crude oil and/or natural gas as herein defined, and all provisions of the pool 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 15th day of February, 2008.

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

By the Director, on behalf of the Commission

/s/ Lynn D. Helms, Director