

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

CASE NO. 18112
ORDER NO. 20381

IN THE MATTER OF A HEARING CALLED ON A MOTION OF THE COMMISSION TO CONSIDER THE APPLICATION OF SAMSON RESOURCES CO. FOR AN ORDER AMENDING THE FIELD RULES FOR THE AMBROSE-BAKKEN POOL TO CREATE AND ESTABLISH FIVE 2080-ACRE SPACING UNITS COMPRISED OF SECTIONS 29 AND 32, T.164N., R.99W. AND SECTIONS 5 AND 8, T.163N., R.99W.; SECTIONS 28 AND 33, T.164N., R.99W. AND SECTIONS 4 AND 9, T.163N., R.99W.; SECTIONS 27 AND 34, T.164N., R.99W. AND SECTIONS 3 AND 10, T.163N., R.99W.; SECTIONS 26 AND 35, T.164N., R.99W. AND SECTIONS 2 AND 11, T.163N., R.99W.; AND SECTIONS 25 AND 36, T.164N., R.99W. AND SECTIONS 1 AND 12, T.163N., R.99W., DIVIDE COUNTY, ND, AUTHORIZING THE DRILLING OF A TOTAL OF NOT MORE THAN 14 WELLS ON EACH 2080-ACRE SPACING UNIT, ELIMINATING ANY TOOL ERROR REQUIREMENTS, AND 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 28th day of June, 2012.
- (2) The witnesses for Samson Resources Company (Samson) provided telephonic testimony in this matter pursuant to North Dakota Administrative Code (NDAC) Section 43-02-03-88.2. Telephonic Communication Affidavits were received on June 29, 2012; therefore, such testimony may be considered evidence.
- (3) Samson made application to the Commission for an order amending the field rules for the Ambrose-Bakken Pool to create and establish five 2080-acre spacing units comprised of Sections 29 and 32, Township 164 North, Range 99 West (Sections 29 and 32) and Sections 5 and 8, Township

163 North, Range 99 West (Sections 5 and 8); Sections 28 and 33, Township 164 North, Range 99 West (Sections 28 and 33) and Sections 4 and 9, Township 163 North, Range 99 West (Sections 4 and 9); Sections 27 and 34, Township 164 North, Range 99 West (Sections 27 and 34) and Sections 3 and 10, Township 163 North, Range 99 West (Sections 3 and 10); Sections 26 and 35, Township 164 North, Range 99 West (Sections 26 and 35) and Sections 2 and 11, Township 163 North, Range 99 West (Sections 2 and 11); and Sections 25 and 36, Township 164 North, Range 99 West (Sections 25 and 36) and Sections 1 and 12, Township 163 North, Range 99 West (Sections 1 and 12), Divide County, North Dakota, authorizing the drilling of a total of not more than fourteen wells on each 2080-acre spacing unit, eliminating any tool error requirements, and such other relief as is appropriate.

(4) Order No. 19474 entered in Case No. 17205, the most recent spacing order for the Ambrose-Bakken Pool, established proper spacing for the development of Zone I at one horizontal well per 640 acres, Zone II at up to three horizontal wells per 640 acres, Zone III at one horizontal well per 800 acres, Zone IV at up to seven horizontal wells per 800 acres, Zones V and VI at one horizontal well per 1280 acres, Zone VII at up to three horizontal wells per 1280 acres, and Zone VIII at up to seven horizontal wells per 1280 acres.

(5) Sections 25 and 36; and Sections 26 and 35 are currently standup 800-acre spacing units in Zone III in the Ambrose-Bakken Pool. Sections 27 and 34; Sections 28 and 33; and Sections 29 and 32 are currently standup 800-acre spacing units in Zone IV in the Ambrose-Bakken Pool and comprise Zone IV in its entirety.

(6) Sections 25, 26, 27, 28, and 29 are short sections adjacent to the North Dakota-Canada border containing approximately 155.56 acres, 155.6 acres, 154.4 acres, 153.36 acres, and 152.24 acres, respectively.

(7) Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; and Sections 5 and 8 are currently standup 1280-acre spacing units in Zone VIII in the Ambrose-Bakken Pool.

(8) The Samson #36-25-164-99H Titan well (File No. 21353) is a horizontal well completed in the upper Three Forks Formation in the Ambrose-Bakken Pool in the standup 800-acre spacing unit described as Sections 25 and 36 from a surface location 425 feet from the north line and 2500 feet from the west line of Section 1 to a bottom hole location in the SE/4 of Section 25.

The Samson #1-12-163-99H Montclair well (File No. 21352) is a horizontal well completed in the upper Three Forks Formation in the Ambrose-Bakken Pool in the standup 1280-acre spacing unit described as Sections 1 and 12 from a surface location 425 feet from the north line and 2550 feet from the west line of Section 1 to a bottom hole location in the SW/4 SE/4 of Section 12.

The Samson #11-2-163-99H Le Mans well (File No. 20341) is a horizontal well completed in the upper Three Forks Formation in the Ambrose-Bakken Pool in the standup 1280-acre spacing unit described as Sections 2 and 11 from a surface location 455 feet from the north line and 2465 feet from the east line of Section 14, Township 163 North, Range 99 West, Divide County, North Dakota, to a bottom hole location in the NW/4 NE/4 of Section 2.

The Samson #0310-04TFH Biscayne well (File No. 21363) is a horizontal well drilling in the upper Three Forks Formation in the Ambrose-Bakken Pool in the standup 1280-acre spacing unit

described as Sections 3 and 10 from a surface location 450 feet from the north line and 2100 feet from the east line of Section 3 to a bottom hole location in the SW/4 SE/4 of Section 10.

The Samson #4-9-163-99H Skyline well (File No. 20646) is a horizontal well completed in the upper Three Forks Formation in the Ambrose-Bakken Pool in the standup 1280-acre spacing unit described as Sections 4 and 9 from a surface location 259 feet from the north line and 2454 feet from the east line of Section 4 to a bottom hole location in the SW/4 SE/4 of Section 9.

The Samson #8-5-163-99H Thomte well (File No. 20837) is a horizontal well completed in the upper Three Forks Formation in the Ambrose-Bakken Pool in the standup 1280-acre spacing unit described as Sections 5 and 8 from a surface location 360 feet from the south line and 2200 feet from the east line of Section 8 to a bottom hole location in the NW/4 NE/4 of Section 5.

Samson requested these wells remain on their existing 800 or 1280-acre spacing units.

(9) Sections 27 and 34; Sections 28 and 33; and Sections 29 and 32 should be placed in a zone of 800-acre spacing with one horizontal well allowed and Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; and Sections 5 and 8 should be placed in a zone of 1280-acre spacing with one horizontal well allowed.

(10) Samson's idealized development plan for the acreage in each proposed standup 2080-acre spacing unit described as Sections 25, 36, 1, and 12; Sections 26, 35, 2, and 11; Sections 27, 34, 3, and 10; Sections 28, 33, 4, and 9; and Sections 29, 32, 5, and 8 is to drill fourteen horizontal wells parallel to the long axis of the spacing unit. The wells will be drilled from three four-well common drilling pads and one two-well common drilling pad in each spacing unit located along the common section line between Sections 36 and 1; Sections 35 and 2; Sections 34 and 3; Sections 33 and 4; and Sections 32 and 5. The horizontal wells will be drilled 660 feet apart, alternating between the middle member of the Bakken Formation and the upper Three Forks Formation, starting with horizontal wells in the middle member of the Bakken Formation at 660 feet from the east spacing unit boundary. Mirror image horizontal wells will be drilled to the north and south from the common drilling pads. 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 Ambrose-Bakken Pool. The horizontal well designs 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.

(11) The Commission will take administrative notice of the testimony given in Case No. 12244 which was scheduled on a motion of the Commission to consider the establishment of 2560-acre drilling or spacing units in the Bakken Pool for future horizontal wells in North Dakota, and such other relief as is appropriate, heard on March 23, 2010. Order No. 14496 entered in Case No. 12244 established criteria for the Commission to consider when determining whether establishment of a 2560-acre drilling or spacing unit is justified.

(12) The record was left open in this case for Samson to submit a breakdown of the working interest in each existing 800 and 1280-acre spacing unit and the proposed 2080-acre spacing units and a schematic depicting the existing horizontal wells versus the proposed horizontal wells and their respective spacing units. Such information was received on July 16, 2012 and the record was closed.

(13) One of the criteria listed in Order No. 14496 was that a minimum of six horizontal wells must be drilled and completed in a reasonable time-frame. Development must occur with horizontal wells placed in the E/2 and W/2 of each former or potential 1280-acre drilling or spacing unit.

(14) In order to justify each proposed 2080-acre spacing unit and meet the criteria outlined in Order No. 14496, the Commission should require mirror offsetting horizontal wells to be drilled in succession and development must occur in the E/2 and W/2 of the 2080-acre spacing unit, although horizontal wells drilled approximately down the long axis of the spacing units qualify as being in either the E/2 or W/2. The Commission should require Samson to drill and complete a mirror offset horizontal well to the Le Mans #11-2-163-99H well in the standup 800-acre spacing unit described as Sections 26 and 35, a mirror offset horizontal well to the Biscayne #0310-04TFH well in the standup 800-acre spacing unit described as Sections 27 and 34, a mirror offset horizontal well to the Skyline #4-9-163-99H well in the standup 800-acre spacing unit described as Sections 28 and 33, and a mirror offset horizontal well to the Thomte #8-5-163-99H well in the standup 800-acre spacing unit described as Sections 29 and 32, to provide an equal distribution of horizontal wells in the existing 800-acre and 1280-acre spacing units, within twelve months of completing the first horizontal well in each respective standup 2080-acre spacing unit. Samson should also be required to drill and complete a minimum of four horizontal wells within each proposed standup 2080-acre spacing unit within twenty-four months from when the first horizontal well is completed in each respective standup 2080-acre spacing unit. If Samson meets these conditions, the Commission finds that Samson will have substantially complied with the intent of Order No. 14496. If Samson fails to meet these conditions, the Commission should schedule the matter for consideration to reduce the size of the spacing unit.

(15) 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.

(16) Allowing the Titan #36-25-164-99H, Montclair #1-12-163-99H, Le Mans #11-2-163-99H, Biscayne #0310-04TFH, Skyline #4-9-163-99H, and Thomte #8-5-163-99H wells to produce on their existing spacing units, will provide maximum ultimate recovery from the Ambrose-Bakken Pool in a manner that will protect correlative rights.

(17) Samson testified the geology throughout each proposed 2080-acre spacing unit is similar.

(18) Samson will utilize multi-well drilling pads to drill the proposed horizontal wells on a pad in succession in each proposed 2080-acre spacing unit and the proposed development plan is such that each 2080-acre spacing unit will be fully developed if Samson meets the conditions outlined in paragraph (14) above.

(19) Samson estimates construction of one four-well common drilling pad instead of one two-well common drilling pad results in approximately 1 acre less surface disturbance and will reduce the expenditure of funds on drilling pad construction and surface facilities and enhance the economics of production, thereby preventing economic waste and promoting the greatest ultimate

recovery of oil and gas from the Ambrose-Bakken Pool. Samson plans to drill the four surface casing well bores and set and cement surface casing in all four, then drill the four intermediate casing well bores and set and cement intermediate casing in all four, then drill the four horizontal laterals on each four-well common drilling pad. The two-well common drilling pads will be developed in a similar fashion. Samson estimates a common drilling pad and the batch drilling process results in a \$400,000 savings per common drilling pad. Common drilling pads will improve the timing and economics of connecting wells to gas gathering systems thereby reducing gas flaring and will minimize surface disturbance and enhance the aesthetic values resulting from fewer or concentrated production facilities.

(20) Samson predicts a 2080-acre spacing unit will allow them to recover an additional 8,000 to 10,000 barrels-of-oil-equivalent per well due to additional productive lateral in the pool.

(21) Samson owns approximately 41% of the leasehold estate in Sections 25 and 36, approximately 28% of the leasehold estate in Sections 1 and 12, and approximately 33% of the leasehold estate in the proposed 2080-acre spacing unit described as Sections 25, 36, 1, and 12. Samson is the largest single leasehold estate owner in Sections 25 and 36; and the proposed 2080-acre spacing unit. Samson owns approximately 52% of the leasehold estate in Sections 26 and 35, approximately 38% of the leasehold estate in Sections 2 and 11, and approximately 43% of the leasehold estate in the proposed 2080-acre spacing unit described as Sections 26, 35, 2, and 11. Samson is the largest single leasehold estate owner in Sections 26 and 35; Sections 2 and 11; and the proposed 2080-acre spacing unit. Samson owns approximately 30% of the leasehold estate in Sections 27 and 34, approximately 48% of the leasehold estate in Sections 3 and 10, and approximately 41% of the leasehold estate in the proposed 2080-acre spacing unit described as Sections 27, 34, 3, and 10. Samson is the largest single leasehold estate owner in Sections 3 and 10; and the proposed 2080-acre spacing unit. Samson owns approximately 32% of the leasehold estate in Sections 28 and 33, approximately 51% of the leasehold estate in Sections 4 and 9, and approximately 44% of the leasehold estate in the proposed 2080-acre spacing unit described as Sections 28, 33, 4, and 9. Samson is the largest single leasehold estate owner in Sections 4 and 9; and the proposed 2080-acre spacing unit. Samson owns approximately 43% of the leasehold estate in Sections 29 and 32, approximately 37% of the leasehold estate in Sections 5 and 8, and approximately 39% of the leasehold estate in the proposed 2080-acre spacing unit described as Sections 29, 32, 5, and 8. Samson is the largest single leasehold estate owner in Sections 29 and 32; Sections 5 and 8; and the proposed 2080-acre spacing unit.

(22) Establishment of the 2080-acre spacing units will provide for orderly development and protect correlative rights.

(23) There were no objections to this application.

(24) If Samson'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 25 and 36, Township 164 North, Range 99 West and Sections 1 and 12, Township 163 North, Range 99 West; Sections 26 and 35, Township 164 North, Range 99 West

and Sections 2 and 11, Township 163 North, Range 99 West; Sections 27 and 34, Township 164 North, Range 99 West and Sections 3 and 10, Township 163 North, Range 99 West; Sections 28 and 33, Township 164 North, Range 99 West and Sections 4 and 9, Township 163 North, Range 99 West; and Sections 29 and 32, Township 164 North, Range 99 West and Sections 5 and 8, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby established as standup 2080-acre spacing units for the exclusive purpose of drilling a minimum of four horizontal wells, up to twelve horizontal wells, within each said spacing unit within the Ambrose-Bakken Pool and Zone VIII 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) Sections 27 and 34; Sections 28 and 33; and Sections 29 and 32, Township 164 North, Range 99 West, Divide County, North Dakota, are hereby established as standup 800-acre spacing units for the exclusive purpose of drilling one horizontal well within each said spacing unit within the Ambrose-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 not be subject to this order.

(3) Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; and Sections 5 and 8, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby established as standup 1280-acre spacing units for the exclusive purpose of drilling one horizontal well within each said spacing unit within the Ambrose-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.

(4) Samson Resources Company, its assigns or successors, shall drill and complete a mirror offset horizontal well to the Le Mans #11-2-163-99H well (File No. 20341) in the standup 800-acre spacing unit described as Sections 26 and 35, Township 164 North, Range 99 West; Divide County, North Dakota; shall drill and complete a mirror offset horizontal well to the Biscayne #0310-04TFH well (File No. 21363) in the standup 800-acre spacing unit described as Sections 27 and 34, Township 164 North, Range 99 West; Divide County, North Dakota; shall drill and complete a mirror offset horizontal well to the Skyline #4-9-163-99H well (File No. 20646) in the standup 800-acre spacing unit described as Sections 28 and 33, Township 164 North, Range 99 West; Divide County, North Dakota; and shall drill and complete a mirror offset horizontal well to the Thomte #8-5-163-99H well (File No. 20837) in the standup 800-acre spacing unit described as Sections 29 and 32, Township 164 North, Range 99 West; Divide County, North Dakota, within twelve months of completing the first horizontal well in each respective standup 2080-acre spacing unit. Samson, its assigns or successors, should also be required to drill and complete a minimum of four horizontal wells within each proposed standup 2080-acre spacing unit within twenty-four months from when the first horizontal well is completed in each respective standup 2080-acre spacing unit. If these conditions are not met, the Commission shall schedule the matter for consideration to reduce the size of the spacing unit.

(5) The Director is hereby authorized to exercise continuing jurisdiction in this matter to determine whether a horizontal well proposed or drilled upon the 800, 1280, or 2080-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.

(6) Provisions established herein for the Ambrose-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 (7) below shall not be subject to this order.

(7) The Ambrose Field is hereby defined as the following described tracts of land in Divide County, North Dakota:

TOWNSHIP 164 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 25, 26, 27, 28, 29, 32, 33, 34, 35 AND 36,

TOWNSHIP 164 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 30 AND 31,

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 AND 36,

TOWNSHIP 163 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 6, 7, 18, 19, 30 AND 31,

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 1 THROUGH 36, INCLUSIVE,

TOWNSHIP 162 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 6, 7, 18, 19, 30 AND 31.

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

ZONE I (640H)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 26, 27, 34 AND 35,

TOWNSHIP 163 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 30 AND 31,

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 2, 3, 10, 11, 13, 14, 15, 22, 23, 24, 25 AND 36.

ZONE II (3/640H)

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 4, 5, 8 AND 9.

ZONE III (800H-STANDUP)

TOWNSHIP 164 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 25, 26, 27, 28, 29, 32, 33, 34, 35 AND 36,

TOWNSHIP 164 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 30 AND 31.

ZONE IV (1280H-STANDUP)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 16, 17, 20, 21, 25, 28, 29, 30, 31, 32, 33
AND 36.

ZONE V (1280H-LAYDOWN-OVERLAPPING 640S)

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 4 AND 5.

ZONE VI (3/1280H-STANDUP)

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 6, 7, 16, 17, 18, 19, 20, 21, 26, 27, 28, 29, 30, 31, 32, 33, 34 AND 35,

TOWNSHIP 162 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 30 AND 31.

ZONE VII (7/1280H-STANDUP)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 13, 14, 15, 22, 23 AND 24,

TOWNSHIP 163 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 6, 7, 18 AND 19,

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 1 AND 12,

TOWNSHIP 162 NORTH, RANGE 98 WEST, 5TH PM
ALL OF SECTIONS 6, 7, 18 AND 19.

ZONE VIII (4-12/2080H-STANDUP)

TOWNSHIP 164 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 25, 26, 27, 28, 29, 32, 33, 34, 35 AND 36,

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 1, 2, 3, 4, 5, 8, 9, 10, 11 AND 12.

(9) The Ambrose-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.

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

(11) All portions of the well bore not isolated by cement of any horizontal well in Zone I in the Ambrose-Bakken Pool shall be no closer than 500 feet to the boundary of the spacing unit the lateral is most nearly parallel to and 200 feet to the boundary of the spacing unit the lateral is most nearly perpendicular to. Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.

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

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

(14) The proper spacing for the development of Zone II in the Ambrose-Bakken Pool is hereby set at up to three horizontal wells per 640-acre spacing unit.

(15) All portions of the well bore not isolated by cement of any horizontal well in Zone II in the Ambrose-Bakken Pool shall be no closer than 500 feet to the boundary of the spacing unit the lateral is most nearly parallel to and 200 feet to the boundary of the spacing unit the lateral is most nearly perpendicular to. Measurement inaccuracies in the directional survey equipment when calculating the bottom hole location in a horizontal well need not be considered.

(16) Spacing units hereafter created in Zone II in the Ambrose-Bakken Pool shall consist of a governmental section.

(17) Sections 4 and 5, Township 162 North, Range 99 West, Divide County, North Dakota, are also designated a laydown 1280-acre spacing unit in Zone V in the Ambrose-Bakken Pool.

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

(19) The proper spacing for the development of Zone III in the Ambrose-Bakken Pool is hereby set at one horizontal well per standup 800-acre spacing unit.

(20) All portions of the well bore not isolated by cement of any horizontal well in Zone III in the Ambrose-Bakken Pool shall be no closer than 500 feet to the east or west boundary and 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.

(21) Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33; Sections 29 and 32, Township 164 North, Range 99 West; and Sections 30 and 31, Township 164 North,

Range 98 West, Divide County, North Dakota, are hereby designated standup 800-acre spacing units in Zone III in the Ambrose-Bakken Pool.

(22) Spacing units hereafter created in Zone III in the Ambrose-Bakken Pool shall be standup spacing units designated by the Commission.

(23) Sections 25 and 36, Township 164 North, Range 99 West and Sections 1 and 12, Township 163 North, Range 99 West; Sections 26 and 35, Township 164 North, Range 99 West and Sections 2 and 11, Township 163 North, Range 99 West; Sections 27 and 34, Township 164 North, Range 99 West and Sections 3 and 10, Township 163 North, Range 99 West; Sections 28 and 33, Township 164 North, Range 99 West and Sections 4 and 9, Township 163 North, Range 99 West; and Sections 29 and 32, Township 164 North, Range 99 West and Sections 5 and 8, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated standup 2080-acre spacing units in Zone VIII in the Ambrose-Bakken Pool.

(24) Zone III in the Ambrose-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 IV in the Ambrose-Bakken Pool is hereby set at one horizontal well per standup 1280-acre spacing unit.

(26) All portions of the well bore not isolated by cement of any horizontal well in Zone IV in the Ambrose-Bakken Pool shall be no closer than 500 feet to the east or west boundary and 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.

(27) Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; Sections 5 and 8; Sections 16 and 21; Sections 17 and 20; Sections 25 and 36; Sections 28 and 33; Sections 29 and 32; and Sections 30 and 31, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone IV in the Ambrose-Bakken Pool.

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

(29) Sections 25 and 36, Township 164 North, Range 99 West and Sections 1 and 12, Township 163 North, Range 99 West; Sections 26 and 35, Township 164 North, Range 99 West and Sections 2 and 11, Township 163 North, Range 99 West; Sections 27 and 34, Township 164 North, Range 99 West and Sections 3 and 10, Township 163 North, Range 99 West; Sections 28 and 33, Township 164 North, Range 99 West and Sections 4 and 9, Township 163 North, Range 99 West; and Sections 29 and 32, Township 164 North, Range 99 West and Sections 5 and 8, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated standup 2080-acre spacing units in Zone VIII in the Ambrose-Bakken Pool.

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

(31) The proper spacing for the development of Zone V in the Ambrose-Bakken Pool is hereby set at one horizontal well per laydown 1280-acre spacing unit.

(32) All portions of the well bore not isolated by cement of any horizontal well in Zone V in the Ambrose-Bakken Pool shall be no closer than 500 feet to the east or west boundary and 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment need not be considered except when deemed necessary by the Director.

(33) Sections 4 and 5, Township 162 North, Range 99 West, Divide County, North Dakota, are hereby designated a laydown 1280-acre spacing unit in Zone V in the Ambrose-Bakken Pool.

(34) Spacing units hereafter created in Zone V in the Ambrose-Bakken Pool shall be laydown spacing units consisting of two adjacent governmental sections which overlap 640-acre spacing units.

(35) Section 4; and Section 5, Township 162 North, Range 99 West, Divide County, North Dakota, are also designated 640-acre spacing units in Zone II in the Ambrose-Bakken Pool.

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

(37) The proper spacing for the development of Zone VI in the Ambrose-Bakken Pool is hereby set at up to three horizontal wells per standup 1280-acre spacing unit.

(38) All portions of the well bore not isolated by cement of any horizontal well in Zone VI in the Ambrose-Bakken Pool shall be no closer than 500 feet to the east or west boundary and 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment when calculating the bottom hole location in a horizontal well need not be considered.

(39) Sections 6 and 7; Sections 16 and 21; Sections 17 and 20; Sections 18 and 19; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33; Sections 29 and 32; Sections 30 and 31, Township 162 North, Range 99 West; and Sections 30 and 31, Township 162 North, Range 98 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone VI in the Ambrose-Bakken Pool.

(40) Spacing units hereafter created in Zone VI in the Ambrose-Bakken Pool shall be standup spacing units consisting of two adjacent governmental sections.

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

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

(43) All portions of the well bore not isolated by cement of any horizontal well in Zone VII in the Ambrose-Bakken Pool shall be no closer than 500 feet to the east or west boundary and 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment when calculating the bottom hole location in a horizontal well need not be considered.

(44) Sections 13 and 24; Sections 14 and 23; Sections 15 and 22, Township 163 North, Range 99 West; Sections 6 and 7; Sections 18 and 19, Township 163 North, Range 98 West; Sections 1 and 12, Township 162 North, Range 99 West; Sections 6 and 7; and Sections 18 and 19, Township 162 North, Range 98 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone VII in the Ambrose-Bakken Pool.

(45) Spacing units hereafter created in Zone VII in the Ambrose-Bakken Pool shall be standup spacing units consisting of two adjacent governmental sections.

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

(47) The proper spacing for the development of Zone VIII in the Ambrose-Bakken Pool is hereby set at a minimum of four horizontal wells, up to twelve horizontal wells, per standup 2080-acre spacing unit.

(48) All portions of the well bore not isolated by cement of any horizontal well in Zone VIII in the Ambrose-Bakken Pool shall be no closer than 500 feet to the east or west boundary and 200 feet to the north or south boundary of the spacing unit. Measurement inaccuracies in the directional survey equipment when calculating the bottom hole location in a horizontal well need not be considered.

(49) Sections 25 and 36, Township 164 North, Range 99 West and Sections 1 and 12, Township 163 North, Range 99 West; Sections 26 and 35, Township 164 North, Range 99 West and Sections 2 and 11, Township 163 North, Range 99 West; Sections 27 and 34, Township 164 North, Range 99 West and Sections 3 and 10, Township 163 North, Range 99 West; Sections 28 and 33, Township 164 North, Range 99 West and Sections 4 and 9, Township 163 North, Range 99 West; and Sections 29 and 32, Township 164 North, Range 99 West and Sections 5 and 8, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby designated standup 2080-acre spacing units in Zone VIII in the Ambrose-Bakken Pool.

(50) A mirror offset horizontal well to the Le Mans #11-2-163-99H well (File No. 20341) shall be drilled and completed in the standup 800-acre spacing unit described as Sections 26 and 35, Township 164 North, Range 99 West; Divide County, North Dakota; a mirror offset horizontal well to the Biscayne #0310-04TFH well (File No. 21363) shall be drilled and completed in the standup 800-acre spacing unit described as Sections 27 and 34, Township 164 North, Range 99 West; Divide County, North Dakota; a mirror offset horizontal well to the Skyline #4-9-163-99H well (File No. 20646) shall be drilled and completed in the standup 800-acre spacing unit described as Sections 28 and 33, Township 164 North, Range 99 West; Divide County, North Dakota; and a mirror offset horizontal well to the Thomte #8-5-163-99H well (File No. 20837) shall be drilled and completed in the standup 800-acre spacing unit described as Sections 29 and 32, Township 164 North, Range 99 West, Divide County, North Dakota, within twelve months of completing the first horizontal well in each respective standup 2080-acre spacing unit. A minimum of four horizontal wells shall be drilled and completed within each proposed standup 2080-acre spacing unit within twenty-four months from when the first horizontal well is completed in each respective standup 2080-acre spacing unit. If these conditions are not met, the Commission shall schedule the matter for consideration to reduce the size of the spacing unit.

(51) Spacing units hereafter created in Zone VIII in the Ambrose-Bakken Pool shall be standup spacing units designated by the Commission.

(52) Sections 25 and 36; Sections 26 and 35; Sections 27 and 34; Sections 28 and 33; and Sections 29 and 32, Township 164 North, Range 99 West, Divide County, North Dakota, are also designated standup 800-acre spacing units in Zone III in the Ambrose-Bakken Pool.

(53) Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; and Sections 5 and 8, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated standup 1280-acre spacing units in Zone IV in the Ambrose-Bakken Pool.

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

(55) The operator of any horizontally drilled well in the Ambrose-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.

(56) 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 Ambrose-Bakken Pool.

(57) 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 Ambrose-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 Ambrose-Bakken Pool as the Commission deems appropriate.

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

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

(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.

(60) 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 Ambrose-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 5740 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.

(61) 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.

(62) All wells in the Ambrose-Bakken Pool shall be allowed to produce at a maximum efficient rate through March 31, 2013.

(63) After March 31, 2013, all wells in the Ambrose-Bakken Pool shall be allowed to produce at a maximum efficient rate for a period of 60 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, oil production from such wells shall not exceed an average of 200 barrels per day for a period of 60 days; after that, oil production from such wells shall not exceed an average of 150 barrels 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; 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 120 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.

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

(65) This order shall cover all of the Ambrose-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 18th day of July, 2012.

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

/s/ Jack Dalrymple, Governor

/s/ Wayne Stenehjem, Attorney General

/s/ Doug Goehring, Agriculture Commissioner