

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

CASE NO. 25563
ORDER NO. 27972

IN THE MATTER OF A HEARING CALLED ON
A MOTION OF THE COMMISSION TO
CONSIDER THE APPLICATION OF RESOURCE
ENERGY CAN-AM LLC FOR AN ORDER
AUTHORIZING THE DRILLING, COMPLETING,
AND PRODUCING OF A TOTAL NOT TO
EXCEED EIGHT WELLS ON AN EXISTING
1280-ACRE SPACING UNIT DESCRIBED AS
SECTIONS 4 AND 5, T.162N., R.99W.,
AMBROSE-BAKKEN POOL, DIVIDE COUNTY,
ND, 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 19th day of January, 2017.
- (2) Resource Energy Can-Am LLC (Resource Energy) provided exhibits and testimony in this matter by sworn affidavits.
- (3) Resource Energy made application to the Commission for an order authorizing the drilling, completing and producing of a total not to exceed eight wells on an existing 1280-acre spacing unit described as Sections 4 and 5, Township 162 North, Range 99 West, Ambrose-Bakken Pool, Divide County, North Dakota (Sections 4 and 5), eliminating any tool error requirements and such other relief as is appropriate.
- (4) Order No. 27283 entered in Case No. 24892, 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 seven horizontal wells per 1280 acres, Zone VIII at a minimum of four horizontal wells, up to twelve horizontal wells, per 2080 acres, Zone IX at one horizontal well per 2560 acres, Zone X at up to thirteen horizontal wells per 2560 acres, Zone XI at two horizontal wells per 4160 acres, and Zone XII at two horizontal wells per 5120 acres.
- (5) Section 4; and Section 5 are currently 640-acre spacing units in Zone II in the Ambrose-Bakken Pool.

(6) The SM Energy Company (SM Energy) #4-162-99H Haugland well (File No. 19266) is a horizontal well completed in the upper Three Forks Formation in the 640-acre spacing unit described as Section 4 from a surface location 260 feet from the south line and 350 feet from the east line to a bottom hole location in the NW/4 NW/4.

The SM Energy #5-162-99H Grundstad well (File No. 19162) is a horizontal well completed in the upper Three Forks Formation in the 640-acre spacing unit described as Section 5 from a surface location 300 feet from the south line and 300 feet from the east line to a bottom hole location in the NW/4 NW/4.

These wells should remain on their existing 640-acre spacing units.

(7) Resource Energy's idealized development plan for the laydown 1280-acre spacing unit described as Sections 4 and 5 is to drill seven horizontal wells 660 feet apart parallel to the long axis, three in the middle member of the Bakken Formation alternating with four in the upper Three Forks Formation. Resource Energy plans to drill the wells from three common drilling pads in the spacing unit. 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 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) Section 4; and Section 5 should be moved to a zone of 640-acre spacing which allows one horizontal well.

(9) Construction of common drilling pads will reduce surface impact and the expenditure of funds on 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. Utilization of such 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 production facilities.

(10) Resource Energy requested any tool error in the directional survey equipment when calculating the bottom hole location of any horizontal lateral drilled in the spacing unit be waived. 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.

(11) Allowing the Haugland #4-162-99H and Grundstad #5-162-99H wells to continue to produce from their existing spacing units will provide maximum ultimate recovery from the Ambrose-Bakken Pool in a manner that will protect correlative rights.

(12) Resource Energy 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.

(13) There were no objections to this application.

(14) If Resource Energy'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 4 and 5, Township 162 North, Range 99 West, Divide County, North Dakota, are hereby established as a laydown 1280-acre spacing unit for the exclusive purpose of drilling up to seven horizontal wells within said spacing unit within the Ambrose-Bakken Pool and Zone VII is hereby redefined to include said spacing unit. Existing and future vertical and directional wells drilled within the spacing unit herein established shall not be subject to this order.

(2) Section 4; and Section 5, Township 162 North, Range 99 West, Divide County, North Dakota, are hereby established as 640-acre spacing units for the exclusive purpose of drilling one horizontal well within each said spacing unit within the Ambrose-Bakken Pool and Zone I 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) The Director is hereby authorized to exercise continuing jurisdiction in this matter to determine whether a horizontal well proposed or drilled upon the 640 or 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.

(4) 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 (5) below shall not be subject to this order.

(5) 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.

(6) 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, 4, 5, 10, 11, 13, 14, 15, 22, 23, 24 AND 36.

ZONE II (3/640H)

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

ZONE IV (7/800H-STANDUP)

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

ZONE V (1280H-STANDUP)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 23, 24, 25 AND 36.

ZONE VI (7/1280H-STANDUP)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 15, 16, 17, 20, 21, 22, 27, 28, 29, 30, 31, 32, 33 AND 34,

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, 2, 3, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35 AND 36,

TOWNSHIP 162 NORTH, RANGE 98 WEST, 5TH PM

ALL OF SECTIONS 6, 7, 18, 19, 30 AND 31.

ZONE VII (7/1280H-LAYDOWN)

TOWNSHIP 162 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 4 AND 5.

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

TOWNSHIP 164 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 25, 26, 28, 29, 32, 33, 35 AND 36,

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 1, 2, 4, 5, 8, 9, 11 AND 12.

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

TOWNSHIP 163 NORTH, RANGE 100 WEST, 5TH PM

ALL OF SECTIONS 25* AND 36*,

*Sections 25 and 36 are within the West Ambrose Field.

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 14, 15, 16, 17, 18*, 19*, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34 AND 35,

*Sections 18 and 19 are within the West Ambrose Field.

TOWNSHIP 163 NORTH, RANGE 98 WEST, 5TH PM

ALL OF SECTIONS 17*, 18, 19 AND 20*,

*Sections 17 and 20 are within the Blooming Prairie Field.

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 5*, 6, 7, 8*, 17*, 18, 19 AND 20*.

*Sections 5, 8, 17, and 20 are within the Blooming Prairie Field.

ZONE X (13/2560H-STANDUP)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 13, 14, 23, 24, 25, 26, 35 AND 36.

ZONE XI (2/4160H-STANDUP-NORTH/SOUTH ORIENTATION-LEASE-LINE)

TOWNSHIP 164 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 25, 26, 29, 30*, 31*, 32, 35 AND 36,

*Sections 30 and 31 are within the West Ambrose Field.

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 1, 2, 5, 6*, 7*, 8, 11 AND 12.

*Sections 6 and 7 are within the West Ambrose Field.

ZONE XII (2/5120H-STANDUP-NORTH/SOUTH ORIENTATION-LEASE-LINE)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM

ALL OF SECTIONS 13, 14, 23, 24, 25, 26, 35 AND 36,

TOWNSHIP 163 NORTH, RANGE 98 WEST, 5TH PM

ALL OF SECTIONS 18, 19, 30 AND 31.

(7) 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 100 feet below the top of the Three Forks Formation within the limits of the field as set forth above, with an exception as noted in Zone IX below.

(8) All portions of the well bore not isolated by cement of any horizontal well in the Ambrose-Bakken Pool shall adhere to the following requirements unless specifically provided for in the respective zone below:

- (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.
- (9) The Application for Permit to Drill (Form 1) for a horizontal well to be completed in the Ambrose-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.
- (10) The Completion Report (Form 6) for a horizontal well completed in the Ambrose-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.
- (11) 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.
- (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) Spacing units hereafter created in Zone II in the Ambrose-Bakken Pool shall consist of a governmental section.

(16) Zone II in the Ambrose-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 Ambrose-Bakken Pool is hereby set at one horizontal well per standup 800-acre spacing unit.

(18) 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 hereby designated standup 800-acre spacing units in Zone III in the Ambrose-Bakken Pool.

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

(20) Zone III in the Ambrose-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 Ambrose-Bakken Pool is hereby set at up to seven horizontal wells per standup 800-acre spacing unit.

(22) Sections 30 and 31, Township 164 North, Range 98 West, Divide County, North Dakota, are hereby designated a standup 800-acre spacing unit in Zone IV in the Ambrose-Bakken Pool.

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

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

(26) Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; Sections 4 and 9; Sections 5 and 8; Sections 13 and 24; Sections 14 and 23; and Sections 25 and 36, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby designated standup 1280-acre spacing units in Zone V in the Ambrose-Bakken Pool.

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

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

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

(30) Sections 15 and 22; Sections 16 and 21; Sections 17 and 20; Sections 27 and 34; Sections 28 and 33; Sections 29 and 32; Sections 30 and 31, Township 163 North, Range 99 West; Sections 6 and 7; Sections 18 and 19; Sections 30 and 31, Township 163 North, Range 98 West; Sections 1 and 12; Sections 2 and 11; Sections 3 and 10; 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 162 North, Range 99 West; Sections 6 and 7; Sections 18 and 19; 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.

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

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

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

(34) 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 VII in the Ambrose-Bakken Pool.

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

(36) Zone VII 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 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.

(38) 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 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.

(39) The 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, prior to completing any horizontal well in the standup 2080-acre spacing unit described as Sections 26 and 35, Township 164 North, Range 99 West and Sections 2 and 11, Township 163 North, Range 99 West, Divide County, North Dakota.

The 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, prior to completing any horizontal well in the standup 2080-acre spacing unit described as Sections 28 and 33, Township 164 North, Range 99 West and Sections 4 and 9, Township 163 North, Range 99 West, Divide County, North Dakota.

(40) A minimum of four horizontal wells shall be drilled and completed consecutively within each standup 2080-acre spacing unit described as Sections 26 and 35, Township 164 North, Range 99 West and Sections 2 and 11, Township 163 North, Range 99 West; and Sections 28 and 33, Township 164 North, Range 99 West and Sections 4 and 9, Township 163 North, Range 99 West, Divide County, North Dakota.

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

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

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

(44) The Ambrose-Bakken Pool in Zone IX is hereby defined as that accumulation of oil and gas found in the interval from the base of the Bakken Formation to 100 feet below the top of the Three Forks Formation in those 2560-acre spacing units described in paragraph (46) below. The Ambrose-Bakken Pool in the spacing units described in paragraph (47) below is as described in paragraph (7) above.

(45) All portions of the well bore not isolated by cement of any horizontal well in Zone IX in the Ambrose-Bakken Pool shall be located approximately down the north-south axis and comply with paragraph (8) above.

(46) Sections 16, 17, 20, and 21; Sections 28, 29, 32, and 33; Sections 29, 30, 31, and 32, Township 163 North, Range 99 West; and Sections 25* and 36*, Township 163 North, Range 100 West and Sections 30 and 31, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby designated 2560-acre spacing units in Zone IX in the Ambrose-Bakken Pool.

*Sections 25 and 36 are within the West Ambrose Field.

(47) Sections 14, 15, 22, and 23; Sections 15, 16, 21, and 22; Sections 17, 18*, 19*, and 20; Sections 26, 27, 34, and 35, Township 163 North, Range 99 West; Sections 17**, 18, 19, and 20**, Township 163 North, Range 98 West; Sections 1 and 12, Township 162 North, Range 99 West and Sections 6 and 7, Township 162 North, Range 98 West; Sections 5***, 6, 7, and 8***; and Sections 17***, 18, 19, and 20***, Township 162 North, Range 98 West, Divide County, North Dakota, are hereby designated 2560-acre spacing units in Zone IX in the Ambrose-Bakken Pool.

*Sections 18 and 19 are within the West Ambrose Field.

**Sections 17 and 20 are within the Blooming Prairie Field.

***Sections 5, 8, 17, and 20 are within the Blooming Prairie Field.

(48) Spacing units hereafter created in Zone IX in the Ambrose-Bakken Pool shall consist of four adjacent governmental sections designated by the Commission.

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

(50) The proper spacing for the development of Zone X in the Ambrose-Bakken Pool is hereby set at up to thirteen horizontal wells per standup 2560-acre spacing unit.

(51) Sections 13, 24, 25, and 36; and Sections 14, 23, 26, and 35, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby designated standup 2560-acre spacing units in Zone X in the Ambrose-Bakken Pool.

(52) Spacing units hereafter created in Zone X in the Ambrose-Bakken Pool shall be standup spacing units consisting of four adjacent governmental sections.

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

(54) The proper spacing for the development of Zone XI in the Ambrose-Bakken Pool is hereby set at two lease-line horizontal wells per standup 4160-acre spacing unit.

(55) All portions of the well bore not isolated by cement of any horizontal well in Zone XI in the Ambrose-Bakken Pool shall be located approximately down the north-south axis and comply with paragraph (8) above.

(56) Sections 25, 26, 35, and 36, Township 164 North, Range 99 West and Sections 1, 2, 11, and 12, Township 163 North, Range 99 West; and Sections 29, 30*, 31*, and 32, Township 164 North, Range 99 West and Sections 5, 6*, 7*, and 8, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby designated standup 4160-acre spacing units in Zone XI in the Ambrose-Bakken Pool.

*Sections 30, 31, 6, and 7 are within the West Ambrose Field.

(57) A horizontal well shall be completed in the standup 800-acre spacing unit described as Sections 26 and 35, Township 164 North, Range 99 West, Divide County, North Dakota, prior to completing any horizontal well in the standup 4160-acre spacing unit described as Sections 25, 26,

35, and 36, Township 164 North, Range 99 West and Sections 1, 2, 11, and 12, Township 163 North, Range 99 West, Divide County, North Dakota.

(58) In order to protect correlative rights and to justify the standup 4160-acre spacing units described as Sections 25, 26, 35, and 36, Township 164 North, Range 99 West and Sections 1, 2, 11, and 12, Township 163 North, Range 99 West; and Sections 29, 30*, 31*, and 32, Township 164 North, Range 99 West and Sections 5, 6*, 7*, and 8, Township 163 North, Range 99 West, Divide County, North Dakota, the two horizontal wells shall be drilled consecutively and target the same zone.

*Sections 30, 31, 6, and 7 are within the West Ambrose Field.

(59) Spacing units hereafter created in Zone XI in the Ambrose-Bakken Pool shall be designated by the Commission.

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

(61) The proper spacing for the development of Zone XII in the Ambrose-Bakken Pool is hereby set at two lease-line horizontal wells per standup 5120-acre spacing unit.

(62) All portions of the well bore not isolated by cement of any horizontal well in Zone XII in the Ambrose-Bakken Pool shall be located approximately down the north-south axis and comply with paragraph (8) above.

(63) Sections 13, 14, 23, 24, 25, 26, 35, and 36, Township 163 North, Range 99 West; and Sections 13, 24, 25, and 36, Township 163 North, Range 99 West and Sections 18, 19, 30, and 31, Township 163 North, Range 98 West, Divide County, North Dakota, are hereby designated standup 5120-acre spacing units in Zone XII in the Ambrose-Bakken Pool.

(64) In order to protect correlative rights and to justify the standup 5120-acre spacing units described as Sections 13, 14, 23, 24, 25, 26, 35, and 36, Township 163 North, Range 99 West; and Sections 13, 24, 25, and 36, Township 163 North, Range 99 West and Sections 18, 19, 30, and 31, Township 163 North, Range 98 West, Divide County, North Dakota, the two horizontal wells shall be drilled consecutively and target the same zone.

(65) Spacing units hereafter created in Zone XII in the Ambrose-Bakken Pool shall consist of eight adjacent governmental sections designated by the Commission.

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

(67) 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 North Dakota Administrative Code (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.

(68) 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.

(69) 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.

(70) 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.

(71) 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 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.

(72) 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 therefor 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.

(73) 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.

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

(75) All wells completed in the Ambrose-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.

(76) All infill horizontal wells, including overlapping spacing units, completed in the Ambrose-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%.

(77) If the flaring of gas produced with crude oil from the Ambrose-Bakken Pool is determined by the North Dakota Department of Health as causing a violation of the North Dakota Air Pollution Control Rules (NDAC Article 33-15), production from the pool may be further restricted.

(78) 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 10th day of August, 2017.

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

By the Director, on behalf of the Commission

/s/ Lynn D. Helms, Director