

BEFORE THE INDUSTRIAL COMMISSION
OF THE STATE OF NORTH DAKOTA

CASE NO. 18292
(CONTINUED)
ORDER NO. 20561

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 OVERLAPPING 2560-ACRE SPACING
UNITS COMPRISED OF SECTIONS 13, 24, 25,
AND 36; SECTIONS 14, 23, 26, AND 35;
SECTIONS 15, 22, 27, AND 34, T.163N., R.99W.;
SECTIONS 18, 19, 30, AND 31, T.163N., R.98W.;
AND SECTIONS 6, 7, 18, AND 19, T.162N.,
R.98W., DIVIDE COUNTY, ND, AUTHORIZING
THE DRILLING OF A TOTAL OF NOT MORE
THAN 14 WELLS ON EACH OVERLAPPING
2560-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 26th day of July, 2012. At that time, counsel for Samson Resources Company (Samson) requested this case be continued to the regularly scheduled hearing in August, 2012. There were no objections, the hearing officer granted the request, and this case was scheduled for hearing on August 23, 2012. At that time, counsel for Samson requested this case be continued to the regularly scheduled hearing in September, 2012. There were no objections, the hearing officer granted the request, and this case was scheduled for hearing on September 27, 2012. At that time, counsel for Samson requested this case be continued to the regularly scheduled hearing in October, 2012. There were no objections, the hearing officer granted the request, and this case was scheduled for hearing on October 25, 2012.

(2) The geology witness for Samson provided telephonic testimony in this matter pursuant to North Dakota Administrative Code (NDAC) Section 43-02-03-88.2. A Telephonic Communication Affidavit was received on October 30, 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 overlapping 2560-acre spacing units comprised of Sections 13, 24, 25, and 36; Sections 14, 23, 26, and 35; Sections 15, 22, 27, and 34, Township 163 North, Range 99 West (Sections 13, 24, 25, 36, 14, 23, 26, and 35); Sections 18, 19, 30, and 31, Township 163 North, Range 98 West; and Sections 6, 7, 18, and 19, Township 162 North, Range 98 West, Divide County, North Dakota, authorizing the drilling of a total of not more than fourteen wells on each overlapping 2560-acre spacing unit, eliminating any tool error requirements, and such other relief as is appropriate.

(4) Samson withdrew Sections 15, 22, 27, and 34, Township 163 North, Range 99 West; Sections 18, 19, 30, and 31, Township 163 North, Range 98 West; and Sections 6, 7, 18, and 19, Township 162 North, Range 98 West, Divide County, North Dakota, from the application.

(5) Order No. 20381 entered in Case No. 18112, 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, Zones IV and V at one horizontal well per 1280 acres, Zone VI at up to three horizontal wells per 1280 acres, Zone VII at up to seven horizontal wells per 1280 acres, and Zone VIII at a minimum of four horizontal wells, up to twelve horizontal wells, per 2080 acres.

(6) Section 26; and Section 35 are currently 640-acre spacing units in Zone I in the Ambrose-Bakken Pool.

The Samson #26-163-99H Lystad well (File No. 17183) is a horizontal well completed in the upper Three Forks Formation in the 640-acre spacing unit described as Section 26 from a surface location 445 feet from the south line and 320 feet from the east line to a bottom hole location in the NW/4 NW/4. Samson requested this well remain on its existing spacing unit.

The Samson #35-163-99H Lokken well (File No. 17226) is a horizontal well completed in the upper Three Forks Formation in the 640-acre spacing unit described as Section 35 from a surface location 605 feet from the north line and 235 feet from the east line to a bottom hole location in the SW/4 SW/4. Samson requested this well remain on its existing spacing unit.

(7) Sections 25 and 36 are currently a standup 1280-acre spacing unit in Zone IV in the Ambrose-Bakken Pool.

The Samson #25-36-163-99H Strom well (File No. 16124) is a dual-lateral horizontal well completed in the upper Three Forks Formation in the standup 1280-acre spacing unit described as Sections 25 and 36 from a surface location 320 feet from the south line and 660 feet from the east line of Section 25 to bottom hole locations in the NW/4 NW/4 of Section 25 and the SW/4 SW/4 of Section 36. Samson requested this well remain on its existing spacing unit.

(8) Sections 13 and 24; and Sections 14 and 23 are currently standup 1280-acre spacing units in Zone VII in the Ambrose-Bakken Pool.

The Samson #2413-4TFH Coronet well (File No. 22483) is a horizontal well completed in the upper Three Forks Formation in the standup 1280-acre spacing unit described as Sections 13 and 24 from

a surface location 250 feet from the north line and 2165 feet from the west line of Section 25 to a bottom hole location in the NE/4 NW/4 of Section 13. This well was fracture stimulated on October 14, 2012 but has not been flowed back. Samson requested this well be included in the standup 2560-acre spacing unit described as Sections 13, 24, 25, and 36.

The Samson #2413-3H Coronet well (File No. 23164) is a horizontal well completed in the upper Three Forks Formation in the standup 1280-acre spacing unit described as Sections 13 and 24 from a surface location 250 feet from the north line and 2113 feet from the west line of Section 25 to a bottom hole location in the NE/4 NW/4 of Section 13. This well was fracture stimulated on October 12, 2012. Samson requested this well remain in the standup 1280-acre spacing unit described as Sections 13 and 24.

The Samson #14-23-163-99H Bel Air well (File No. 20340) is a horizontal well completed in the upper Three Forks Formation in the standup 1280-acre spacing unit described as Sections 14 and 23 from a surface location 505 feet from the north line and 2465 feet from the east line of Section 14 to a bottom hole location in the SE/4 SW/4 of Section 23. Samson requested this well remain on its existing spacing unit.

(9) Sections 13 and 24; and Sections 14 and 23 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 2560-acre spacing unit described as Sections 13, 24, 25, and 36; and Sections 14, 23, 26, and 35 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 24 and 25; and Sections 23 and 26. 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 west 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) Samson testified the town of Ambrose lies partially within the N/2 of Section 13, there are United States Fish and Wildlife Service easements in the S/2 of Section 24, and there are also surface water topographic issues in the area, all of which increase the difficulty in finding suitable surface locations.

(12) 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.

(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) Samson testified they plan to utilize two drilling rigs to develop this area and they would move across and develop the entire 2560-acre spacing unit in a timely fashion. If Samson fails to adequately develop a 2560-acre spacing unit in a timely fashion, the Commission should schedule the matter for consideration to reduce the size of the spacing unit.

(15) Samson requested any tool error in the directional survey equipment when calculating the bottom hole location of any horizontal lateral drilled in the spacing units 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.

(16) Samson testified the geology throughout each proposed 2560-acre spacing unit is similar, having uniform thickness, porosity, and permeability, and the absence of faults or structural anomalies.

(17) Samson will utilize multi-well drilling pads and drill the proposed horizontal wells on a pad in succession in each proposed 2560-acre spacing unit and the proposed development plan is such that each 2560-acre spacing unit will be fully developed.

(18) Samson estimates construction of one four-well common drilling pad instead of four one-well drilling pads results in approximately 10 acres 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 \$350,000 to \$400,000 savings per well in rig mobilization, drilling, and completion costs. 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.

(19) Samson predicts a 2560-acre spacing unit will allow them to recover an additional 10,000 to 12,000 barrels-of-oil-equivalent per well due to additional lateral in the pool due to the elimination of the internal setback between spacing units, which will allow two more stimulation stages.

(20) Samson and its partners owns approximately 94.14% of the leasehold estate in Sections 13 and 24, 100% of the leasehold estate in Sections 25 and 36, and approximately 97.07% of the leasehold estate in the proposed 2560-acre spacing unit described as Sections 13, 24, 25, and 36.

Samson and its partners owns approximately 82.55% of the leasehold estate in Sections 14 and 23, 100% of the leasehold estate in Section 26, 100% of the leasehold estate in Section 35, and approximately 91.28% of the leasehold estate in the proposed 2560-acre spacing unit described as Sections 14, 23, 26, and 35.

(21) Marvin Masset submitted a letter on behalf of his wife and her siblings (Masset), received on August 13, 2012, in opposition to this application. Masset owns mineral acres included in the standup 1280-acre spacing unit for the Samson #8-5-163-99H Thomte well (File No. 20837), described as Sections 5 and 8, Township 163 North, Range 99 West, Divide County, North Dakota, and in the standup 1280-acre spacing unit for the Bel Air #14-23-163-99H well, previously described as Sections 14 and 23. Said Sections 5 and 8 are not subject to this application.

Masset believes 2560-acre spacing units in this area will result in an unfair allocation of resources. Masset performed six two-well comparisons which he believes illustrates production differences. Masset's first well comparison was between the Thomte #8-5-163-99H well, located in Sections 5 and 8, Township 163 North, Range 99 West and the Samson #12-1-162-98H Regal well (File No. 20869), located in Sections 1 and 12, Township 162 North, Range 98 West. These wells are approximately 12 miles apart. Masset believes the difference in production between these two wells demonstrates reservoir variation in the area.

Masset's next three two-well comparisons were between wells operated by SM Energy Company on adjacent north-south standup 1280-acre spacing units located two, three, and four miles west of the proposed standup 2560-acre spacing unit consisting of Sections 14, 23, 26, and 35. The nearest two-well comparison was between the Waters #4-28H well (File No. 20525), located in Sections 16 and 21, Township 163 North, Range 99 West, and the Hauge #13-21H well (File No. 20668), located in Sections 28 and 33, Township 163 North, Range 99 West. The Waters #4-28H well produced 67,984 barrels of oil in its first 201 days of production for an average of 338 barrels, and the Hauge #13-21H well produced 68,335 barrels of oil in its first 193 days for an average of 354 barrels.

Masset's fifth two-well comparison was between the Samson #11-2-163-99H Le Mans well (File No. 20341), located in Sections 2 and 11, Township 163 North, Range 99 West, and the Bel Air #14-23-163-99H well, located in Sections 14 and 23. The initial production rate for the Le Mans #11-2-163-99H well was 238 barrels of oil per day and for the Bel Air #14-23-163-99H well was 518 barrels of oil per day. The current daily average in September 2012 was 247 barrels for the Bel Air #14-23-163-99H well and 110 barrels for the Le Mans #11-2-163-99H well.

Masset's sixth two-well comparison was between the Samson #7-6-163-98H Mustang well (File No. 20232), located in Sections 6 and 7, Township 163 North, Range 98 West, and the Samson #18-19-163-98H Ranchero well (File No. 20231), located in Sections 18 and 19, Township 163 North, Range 98 West. The initial production rate for the Mustang #7-6-163-98H well was 304 barrels of oil per day and for the Ranchero #18-19-163-98H well was 758 barrels of oil per day. The current daily average in September 2012 was 84 barrels for the Mustang #7-6-163-98H well and 165 barrels for the Ranchero #18-19-163-98H well.

Masset's personal belief is that 2560-acre spacing units can and should be developed in areas where it is proven that correlative rights of all mineral owners are protected. Masset acknowledges the wells he compared may have undergone different drilling or completion procedures. Masset

believes there is variability in the reservoir based upon his production comparisons and that the area should be developed with 1280-acre spacing units.

Masset did not offer any geological evidence or estimated ultimate recoveries for the wells to support his belief that 2560-acre spacing units in this area will result in an unfair allocation of resources.

(22) Well comparisons without taking into account a multitude of factors such as amount of lateral drilled in zone, number of completion stages, completion effectiveness, and proppant type can lead to inaccurate assumptions. Daily production may be a good indicator of a well's performance but does not necessarily reflect what its ultimate recovery might be. Similar reservoir characteristics should result in similar wells in a 2560-acre spacing unit with all drilling and completion factors being equal.

(23) Order No. 14496 does not require all wells in a 2560-acre spacing unit to be equal. The Commission is to consider the geologic conditions such as uniform thickness, porosity, and permeability, and absence of faults and structural anomalies, among other considerations, when determining whether establishment of a 2560-acre spacing unit is justified.

(24) Allowing the Lystad #26-163-99H, Lokken #35-163-99H, Bel Air #14-23-163-99H, Strom #25-36-163-99H, and Coronet #2413-3H 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.

(25) Establishment of the 2560-acre spacing units will provide for orderly development and protect correlative rights.

(26) 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 13, 24, 25, and 36; and Sections 14, 23, 26, and 35, Township 163 North, Range 99 West, Divide County, North Dakota, are hereby established as standup 2560-acre spacing units for the exclusive purpose of drilling up to thirteen horizontal wells within each said spacing unit within the Ambrose-Bakken Pool and Zone XI is hereby created 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 13 and 24; and Sections 14 and 23, 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 V 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.

(3) The Director is hereby authorized to exercise continuing jurisdiction in this matter to determine whether a horizontal well proposed or drilled upon the 1280 or 2560-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, 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.

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 (1280H-LAYDOWN-OVERLAPPING 640S)

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

ZONE VII (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 VIII (4/1280H-STANDUP)

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

ZONE IX (7/1280H-STANDUP)

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

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 X (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.

ZONE XI (13/2560H-STANDUP)

TOWNSHIP 163 NORTH, RANGE 99 WEST, 5TH PM
ALL OF SECTIONS 13, 14, 23, 24, 25, 26, 35 AND 36.

(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.

(8) 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.

(9) 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.

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

(11) Sections 14, 23, 26, and 35, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated a standup 2560-acre spacing unit in Zone XI in the Ambrose-Bakken Pool.

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

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

(14) 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.

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

(16) 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 VI in the Ambrose-Bakken Pool.

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

(18) 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.

(19) 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.

(20) 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.

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

(22) 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 X in the Ambrose-Bakken Pool.

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

(24) 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.

(25) 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 when calculating the bottom hole location in a horizontal well need not be considered.

(26) 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.

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

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

(30) 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.

(31) 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.

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

(33) 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 X in the Ambrose-Bakken Pool.

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

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

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

(37) 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 need not be considered except when deemed necessary by the Director.

(38) 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 VI in the Ambrose-Bakken Pool.

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

(40) 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.

(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 three 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 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 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 up to four horizontal wells per standup 1280-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 16 and 21; Sections 17 and 20; 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 VIII in the Ambrose-Bakken Pool.

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

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

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

(53) All portions of the well bore not isolated by cement of any horizontal well in Zone IX 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.

(54) 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 IX in the Ambrose-Bakken Pool.

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

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

(57) The proper spacing for the development of Zone X 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.

(58) All portions of the well bore not isolated by cement of any horizontal well in Zone X 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.

(59) 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 X in the Ambrose-Bakken Pool.

(60) 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.

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

(62) 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.

(63) 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 V in the Ambrose-Bakken Pool.

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

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

(66) All portions of the well bore not isolated by cement of any horizontal well in Zone XI 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.

(67) 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 XI in the Ambrose-Bakken Pool.

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

(69) Section 26; and Section 35, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated 640-acre spacing units in Zone I in the Ambrose-Bakken Pool.

(70) Sections 13 and 24; Sections 14 and 23; and Sections 25 and 36, Township 163 North, Range 99 West, Divide County, North Dakota, are also designated standup 1280-acre spacing units in Zone V in the Ambrose-Bakken Pool.

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

(72) 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.

(73) 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.

(74) 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.

(75) 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.

(76) 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.

(77) 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.

(78) 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.

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

(80) 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.

(81) 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.

(82) 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 19th day of November, 2012.

INDUSTRIAL COMMISSION
STATE OF NORTH DAKOTA

/s/ Jack Dalrymple, Governor

/s/ Wayne Stenehjem, Attorney General

/s/ Doug Goehring, Agriculture Commissioner