



1501:9-13-02.1 Anti-Collision (NEW)

This rule applies to a well permit application for the drilling of a horizontal or directional well to ensure consistency in the application of wellbore positioning and collision avoidance principles and procedures in order to manage wellbore position uncertainty and to prevent wellbore collisions during the drilling of a well in order to protect public health and safety, to protect the environment, and for the conservation of natural resources. Compliance with this rule does not eliminate the requirement that a person comply with any applicable state or federal law.

(A) Permit and document requirements.

- (1) On and after the effective date of this rule and in addition to the requirements established by section 1509.06 of the Revised Code and 1501:9-1-02 of the Administrative Code, no person shall commence the drilling of a well subject to paragraph (B) of this rule without first having submitted and received approval of a collision avoidance management policy (CAMP) required under paragraph (C) of this rule and a well specific anti-collision plan required under paragraph (D) of this rule.
- (2) On and after the effective date of this rule, no person shall spud or alter a drilled well so that the well is subject to paragraph (B) of this rule without first submitting and receiving approval of a collision avoidance management policy required under paragraph (C) of this rule and a well-specific anti-collision plan specified under paragraph (D) of this rule.
- (3) All documents required to be submitted to the Chief under this rule shall be submitted in an electronic format using a form prescribed by the Chief or in a format that is acceptable to the Chief.
- (4) The Chief may require paper copies in addition to the electronic submittal. Upon written request by the applicant, the chief may accept paper copies in lieu of the electronic submittal.

(B) Applicability.

- (1) Any well that will be drilled using directional drilling equipment or techniques to intentionally deviate the reference well from vertical to a horizontal wellbore or to a near horizontal wellbore or that results in a bottom hole location significantly different than the surface location;
- (2) Requests to reduce the location of a new well to another well to be less than one hundred feet as specified in division (I) of section 1509.021 of the Revised Code;
- (3) Any well that will be drilled into or through a formation in which exists either a horizontal well or near horizontal wellbore that was directionally drilled or in which the proposed wellbore position may be within five-hundred feet of an existing wellbore producing from or penetrating through the target formation;
- (4) Any other situation in which the Division determines it is necessary to protect public health and safety, to protect the environment, or for the conservation of natural resources.

(C) Collision avoidance management policy (CAMP). A person shall develop and implement a CAMP to ensure that collision avoidance is considered during the planning and drilling of a well subject to paragraph (B) of this rule for the protection of public health and safety, to protect the environment, and



for the conservation of natural resources. The CAMP must disclose the criteria that an operator considers for collision avoidance during the planning and drilling phases of a well and must include, at a minimum, all of the following:

- (1) A Description of the equipment, methods, and procedures that may be used in the plan;
- (2) The frequency of equipment calibration and a validation of measurement accuracy;
- (3) Acknowledgement that as-drilled surveys must be utilized for each offset well within the area of review as required under paragraph (D)(1) of this rule unless waived by the Chief in writing;
- (4) A disclosure of each separation factor formula;
- (5) A disclosure of the survey techniques and the data used to generate the plan, including the procedures that will be implemented should blind drilling occur.
- (6) A description of the risk management processes to be implemented if separation factors or approved distances of a well-specific anti-collision plan become less than stated minimums of the plan, including personnel to be notified, anti-collision calculations that project ahead a minimum of 300 feet from the last survey station, and when drilling must stop;
- (7) A description of the actions to be taken if the wellbore being drilled has deviated from the planned well path and cannot be corrected using ordinary methods; and
- (8) A description of the actions to be taken if a collision should occur or survey projection indicate an imminent risk of collision.

Revisions or modifications to a CAMP must be resubmitted for approval by the Chief prior to implementation. A CAMP required in paragraph (C) of this rules must be dated and signed by an authorized representative of the person that submitted the CAMP.

- (D) Well-specific anti-collision plan. A well-specific anti-collision plan provides a plan for a specific well that must be submitted electronically to the Chief in a format approved by the Chief. A well-specific anti-collision plan must include all of the following:
- (1) An area of review conducted around the entire proposed wellbore length at a radius length of 100 feet or the positional uncertainty level of the drilling survey equipment identified in paragraph (C)(2) of this rule, whichever is greater to identify any existing or proposed wellbores that may pose a collision risk during drilling of the proposed well;
 - (2) Detailed drawings. The detailed drawings that include all of the following:
 - (a) A title page that contains all of the following:
 - i. The name of the applicant;
 - ii. Emergency contact information;
 - iii. The name of the proposed well pad;



OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL & GAS RESOURCES MANAGEMENT
OILANDGAS.OHIODNR.GOV

- iv. The county, township, and section or lot number of the proposed well; and
 - v. Coordinates of the entrance intersection of the centerline of the access road at the public right-of-way using latitude and longitude, in a format of decimal degree, to a minimum of six significant figures.
- (b) A plan sheet, drawing, or map showing all of the following:
- i. The surface layout of the unit boundaries;
 - ii. The surface locations of the reference well, proposed wells, and existing wells subject to paragraph (D)(1) of this rule; and
 - iii. A legend with symbol key, north arrow, date, author, scale bar, scale in feet, and version number.

Each plan sheet submitted under (D)(2)(b) of this rule must identify each well by name, number, and API number as applicable.

- (3) Wellbore Planning Report. The wellbore planning report provides the information showing the proposed survey station location of the proposed wellbore path. At a minimum, the wellbore planning report must be submitted electronically in a format prescribed by the Chief and must include all of the following:

- (a) The name and API number of the proposed reference well
- (b) The design or plan version that includes the date;
- (c) A north reference;
- (d) The survey calculation method;
- (e) The mapping or datum System;
- (f) The magnetic survey data reference that includes the sample date;
- (g) The wellbore plan section data that includes measured depth, vertical depth, +N/-S, +E/-W; and
- (h) The survey stations measurements from surface through total measured depth reported at a minimum of 100-foot survey intervals;

- (4) Anti-Collision Report. The anti-collision report provides information showing locations of the proposed reference wellbore in relation to existing offset wellbores and/or proposed wellbores in the area of review as required in paragraph (D)(1) of this rule. The report must correspond with the information submitted in section (C) and (E) of this rule, document the equipment that will be utilized to achieve the drilling plan and include the associated error models and uncertainty factors associated with the equipment. At a minimum, the report must include all of the following for each well in the area of review:

- (a) The output Error;
- (b) The reference well and each offset well measured depths;
- (c) The minimum center-center distance between the reference well and each offset well;
- (d) The minimum ellipse separation;
- (e) The separation Factor;



-
- (f) A spider diagram showing the wellbores of the reference well and each offset well in the area of review;
- (5) Revisions or modifications to any requirement under paragraph (D) prior to completion drilling of the well must be resubmitted for approval by the chief prior to implementation. Any revisions or modifications must be dated and signed by an authorized representative of the person that submitted the well-specific anti-collision plan.
- (E) General Requirements. For purposes of this rule and the drilling of a reference well of the following apply.
- (1) Gyro surveys are required if magnetic interference is encountered from an offset wellbore casing or during operations where increased positional certainty is required.
 - (2) Wells identified under paragraph (D)(1) of this rule must be equipped to monitor casing and annular casing pressure and comply with all of the following:
 - (a) Gauges must be labeled to identify the casing string being monitored and accessible for inspection at any time;
 - (b) An owner must notify the Division of any pressure change except for those observed during normal well operations. Wells identified by the applicant under paragraph (D)(1) not owned by the applicant are subject to requirements under paragraph (E)(2) and 1501:9-1-8. The applicant must notify the owners of those wells identified of the risk and request that pressure monitoring be conducted during the drilling of the reference well; and
 - (c) Any annular or casing pressure changes observed by the person or offset well owner must be communicated by the person to the Division immediately by direct notification.
 - (3) Wells identified in paragraph (D)(1) of this rule must be determined as either a HSE well or a non-HSE well and identified as either a HSE or non-HSE well on the map required under paragraph (D)(2)(b) of this rule;
 - (4) Well to well separations must be based on industry recognized standards set forth by the Society of Petroleum Engineers Well Positioning Technical Section and must include all of the following:
 - (a) Instrument performance models that reflect the positional uncertainty of wells within the area of review;
 - (b) Scaling factors that reflect the accuracy of the survey instruments utilized in drilling operations;
 - (c) Categorization of each well identified under paragraph (D)(1) of this rule as a HSE or non-HSE well;
 - (d) Calculation methods and error surface utilized in calculating positional uncertainty;



- (5) Notification. Direct notification by the person to the Division is required immediately if any of the following occurs:
- (a) Deviation from the approved well-specific anti-collision plan requires use of a gyro survey or other similar tool is implemented to determine wellbore position for the purpose of correcting the wellbore path;
 - (b) The reference well being drilled is in proximity to a HSE well and the separation factor is equal to or less than 2.00 at a scaling factor of 2.0 Sigma or an equivalent scaling factor; or
 - (c) Surveys or project ahead calculations indicate the wellbore position of the reference well has reached or exceeded the approved minimum separation factor or allowable distances.
- (6) Plan Modification. A holder of a permit issued under section 15009.06 of the Revised Code or its authorized representative may submit to the Chief modifications in writing to an approved well specific anti-collision plan. All modifications must comply with the requirements of this rule. The Division must review and may approve deviations from the plan in writing within 48 hours of receipt of a modification.

(F) As used in this rule:

- (1) "Wellbore" means a drilled hole or borehole and includes the open hole or uncased portions of a well.
- (2) "Offset well" means an existing or planned well that is in close proximity to a reference well
- (3) "Separation factor" means a ratio of a well separation distance divided by the combined position uncertainty of a reference well and an offset well.
- (4) "Blind drilling" means during the drilling of a well the positional certainty of the well cannot be certified according to the well drilling plan in order to determine the position of the wellbore in relation to the directional drilling plan. "Blind drilling" does not include the area located between the drill bit and survey sensors in the wellbore.
- (5) "HSE well" means a well that poses a health, safety, or environmental risk because of one or more of the following factors"
 - (a) The well has been stimulated and is capable of production;
 - (b) The well has annular pressure measured at surface that exceeds the hydrostatic pressure calculated at the casing seat for that annulus; or
 - (c) The well has production casing as the only barrier between the drilled hole and the geologic strata.
- (6) "Non-HSE well" means a well that is not a HSE well.
- (7) "Positional uncertainty" means an estimate of the uncertainty associated with a point on a wellbore path that is determined from a planned survey or an actual survey.
- (8) "Reference well" means a well being planned to be drilled or a well being drilled.
- (9) "Sigma" means standard deviation.
- (10) "'API number" means the number assigned to a well in accordance with the standards established by the American Petroleum Institute.
- (11) "Ellipse separation" means the minimum distance based on positional uncertainty between two adjacent wells.



DRAFT