

Chapter 12

Is It a Deep Well or a Shallow Well and Who Cares?

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§ 12.01. Introduction.

Whether a well is classified as a shallow or a deep well can make a difference regarding the permitting agency with jurisdiction to issue the permit, the spacing, unit formation and other permitting, regulatory and operational issues. In West Virginia, a number of operators have permitted Marcellus Shale wells as shallow wells, but have found themselves embroiled in regulatory and legal battles over whether the wells, as drilled, should have been permitted as deep wells. Operators who have erroneously permitted a well as a shallow well have incurred civil penalties, spacing objections, litigation costs and regulatory scrutiny. This problem is not unique to West Virginia, and highlights the need to be cognizant of the differences between shallow and deep wells.

§ 12.02. Statutory Regulation of Oil and Gas Exploration in West Virginia.

[1] — Definitions.

West Virginia defines a shallow well as any gas well drilled and completed in a formation above the top of the upper most member of the “Onondaga Group.”¹ However, operators drilling a shallow well in West Virginia may penetrate into the “Onondaga Group” not in excess of 20 feet in order to allow for logging and completion operations. West Virginia defines a deep well as any well other than a shallow well, which is drilled and completed in a formation at or below the top of the upper most member of the “Onondaga Group.”² Problems have arisen in West Virginia, primarily for drillers of vertical wells attempting to log the Marcellus, because logging tools longer than 20 feet require the breakdown of tools or incomplete logging of the Marcellus to avoid penetrating more than 20 feet into the Onondaga. This problem is not necessarily isolated to Marcellus wells, but any penetration more than 20 feet into the top of the Onandaga.

¹ W. Va. Code §§ 22C-8-2(21), 22C-9-2(a)(11).

² W. Va. Code §§ 22C-8-2(8), 22C-9-2(a)(12).

[2] — Shallow Gas Well Review Board.

The West Virginia Shallow Gas Well Review Board (SGWRB or “Review Board”) has jurisdiction to resolve objections by coal owners or operators to applications for permits for shallow wells. The Review Board may establish specific considerations, including minimum distances to be allowed between certain shallow gas wells. The Review Board also has some authority to establish drilling units and to order the pooling of interests therein to provide all gas operators and royalty owners with an opportunity to recover their just and equitable share of production.³

If well operators and objecting coal seam owners are unable to agree upon a drilling location, the Director will refuse to issue a drilling permit unless the following distance limitations are observed:

- (1) For shallow wells with a depth less than 3,000 feet, there shall be a minimum distance of 1,000 feet from the drilling location to the nearest existing well.
- (2) For shallow wells with a depth of 3,000 feet or more, there shall be a minimum distance of 1,500 feet from the drilling location to the nearest existing well except that where the distance is less than 2,000 feet but more 1,500 feet and the coal seam operator has objected, the gas operator has the burden of establishing the need for the drilling location less than 2,000 feet from the nearest existing well.
- (3) A key to understanding this spacing limitation is the definition of “existing well.” W. Va. Code § 22C-8-8(b) provides that the words “existing well” means “(i) any well . . . either completed in the same target formation or drilled for the purpose of producing from the same target formation, and (ii) any unexpired, permitted drilling location for a well to the same target formation.” Thus, when evaluating an objection to a drilling location, an operator needs to examine not only the distance from the alleged “offset” well, but the depth of the offset well or any well that has been permitted to the same target formation but not yet drilled.

³ W. Va. Code § 22C-8-1.

[3] — Oil and Gas Conservation Commission.

The Oil and Gas Conservation Commission (OGCC) regulates the drilling of deep wells in West Virginia. Other duties of the OGCC include approving or denying applications for new well permits, establishing drilling units and special field rules, and approving or denying applications for the pooling of interests within a drilling unit.⁴ By regulations, OGCC may establish special field rules and may allow spacing to 1,000 feet from the nearest existing well. In the absence of special field rules, each deep well shall be not less than 3,000 feet from a permitted deep well and must be at least 400 feet from a lease or unit boundary.⁵

[4] — Case Study.

An example of a situation where the distinction between a shallow and deep well can make a substantial difference in permitting procedures and regulatory compliance is *Blue Eagle Land, LLC v. The West Virginia Oil & Gas Conservation Commission*, No. 08-CAP-171, pending in the Circuit Court of McDowell County, West Virginia (hereinafter *Blue Eagle*).⁶ The case evolves from civil penalties issued by the OGCC for wells permitted as shallow wells; objections by coal owners to applications for special field rules under the deep well permitting regulations; intervention by a surface owner's group which believes they should have a say in the matter; and claims by coal owners and operators that gas wells were being permitted as deep wells to avoid the more advantageous veto power and spacing

⁴ W. Va. Code § 22C-9-4.

⁵ See W. Va. Code St. R. § 39-1-4.2.

⁶ The case is a consolidated appeal of several cases and Orders issued by the OGCC. The Orders in question imposed administrative penalties on some operators who permitted Marcellus wells as shallow wells and the OGCC asserted they should have been permitted as deep wells subject to the jurisdiction of the OGCC, rather than the West Virginia Shallow Well Gas Review Board. Also on appeal are other Orders of the OGCC which granted special field rules to operators who permitted the wells as deep wells, but obtained a 1,000 foot spacing exception. In both instances, the objecting parties argued the OGCC erred by asserting jurisdiction. For purposes of this chapter the differences between the several Orders of the OGCC are not relevant.

objections coal owners and operators have over shallow gas well permit applicants. The case history includes rulings of the OGCC, appeals to the Circuit Court of Kanawha County and McDowell County, a Petition for a Writ of Prohibition before the West Virginia Supreme Court of Appeals, a remand by the Supreme Court of Appeals to the Circuit Court of McDowell County, and unsuccessful efforts at legislative revisions to the statutory definitions of shallow and deep wells to clarify this area of the law and avoid further litigation.

The dispute in this case arose from a claim by coal owners and operators (hereinafter Petitioners), that the OGCC exceeded its lawful jurisdiction and asserted jurisdiction over applications for various well work permits submitted by oil and gas operators which are considered by the OGCC to be “deep” wells. Petitioners asserted that the wells in question should be classified as “shallow” wells subject to the jurisdiction of the SGWRB. Petitioners believe they have more substantive rights to object to shallow permit applications than is the case with deep well applicants, and therefore seek to have the permits in question re-classified as shallow well permits.

The Petitioners initially sought to challenge the rulings of the OGCC by filing a Petition for Writ of Prohibition with the West Virginia Supreme Court of Appeals on September 28, 2007, rather than by filing an appeal to the administrative Orders of the OGCC pursuant to W. Va. Code § 22C-9-11. The matter was briefed and argued, and the Supreme Court of Appeals issued an opinion on May 27, 2008, holding that an inadequate factual record existed *and* that petitioner’s remedy was an appeal pursuant to W. Va. Code § 22C-9-1.⁷

The crux of the Petitioners’ argument is that the definitions of “shallow well” and “deep well” requires both the drilling *and* the completion⁸ of a

⁷ State *ex rel.* Blue Eagle Land v. West Virginia Oil & Gas Conservation Comm’n, 664 S.E.2d 683 (W. Va. 2008).

⁸ A well can be drilled to various potentially gas bearing formations, but a well is “completed” when a particular formation or depth is fractured or “stimulated.” “Stimulate” means any action taken by a well operator to increase inherent productivity of an oil or gas

well below the top of the Onondaga Group before a well becomes a “deep well.” Petitioners argue that wells that are merely drilled more than 20 feet into the Onandaga, but not completed in or below the Onandaga should not be classified as deep wells.

Petitioners challenge the jurisdiction of the OGCC whose authority is derived pursuant to W. Va. Code § 22C-9-1, *et seq.*, and in particular, the definition section, W. Va. Code § 22C-9-2. Therein, a shallow well and deep well are defined as follows:

“Shallow well” means any well drilled and completed in a formation above the top of the uppermost member of the “Onondaga Group”: Provided, that in drilling a shallow well the operator may penetrate into the “Onondaga Group” to a reasonable depth, not in excess of 20 feet, in order to allow for logging and completion operations, but in no event may the “Onondaga Group” formation be otherwise produced, perforated or stimulated in any manner;

“Deep well” means any well, other than a shallow well, drilled and completed in a formation at or below the top of the uppermost member of the “Onondaga Group.”

W. Va. Code § 22C-9-2(a)(11), (12).

Petitioners allege that since the definitions use the conjunctive “and,” that unless both drilling and completion are below the top of the Onondaga Group, the definition of a deep well cannot be satisfied. The Respondent oil and gas operators counter that within the very same definition section of Chapter 22C, Article 9, the Legislature declared:

Unless the context clearly indicates otherwise, the use of the word “and” and the word “or” shall be interchangeable, as, for example, “oil and gas” shall mean oil or gas or both.

W. Va. Code § 22C-9-2(b).

Respondents thus argue that the Legislature clearly stated that “and” and “or” were interchangeable, and there is nothing in this case to support

well, including, but not limited to, fracturing, shooting or acidizing, but excluding cleaning out, bailing or workover operations. W. Va. Code § 22-6-1(s).

a claim that “the context clearly indicates otherwise” that a “deep well” requires that a well be drilled and completed below the uppermost portion of the Onondaga. Accordingly, the definition of deep well, within the express terms of the statute, can be read to be any well, other than a shallow well, drilled and/or completed in a formation at/or below the top of the uppermost member of the “Onondaga Group.” If this definition is an accepted interpretation of the statute, then the Petitioners’ argument fails and the Commission will have acted completely within its lawful jurisdiction.⁹

The case has been fully briefed on remand. The case was temporarily stayed while the parties attempted to obtain passage of legislation that would clarify the definitions in question, but the legislation failed to pass, so the case has been returned to the active docket of the trial court. This chapter was submitted before any decision was issued by the trial court and thus practitioners should be mindful that the decision of the Circuit Court of McDowell County could provide guidance or clarification on the jurisdiction of the OGCC, or could remand the case to the OGCC for further development of the record. In either case, oil and gas operators who are permitting wells that may be drilled, unintentionally or otherwise, more than 20 feet into the Onondaga should consult with the Department of Environmental Protection Office of Oil and Gas, legal counsel and otherwise take steps to prevent the imposition of civil penalties and entanglement in regulatory proceedings over potential objections of coal owners and operators to well locations, or the exercise of regulatory jurisdiction by the OGCC.

Given the uncertainty in West Virginia over this issue, this chapter will provide a brief synopsis of the law of several of the producing states in the Appalachian Basin so that practitioners may be aware of the statutory, regulatory, permitting and operational differences that may exist in the several states for what may be “deep” wells or Marcellus wells that may be subject to different standards depending on the total depth of the well.

⁹ The Respondents in *Blue Eagle* have proffered other arguments to the court, but for the limited purpose of this chapter they will not be summarized or discussed.

§ 12.03. **Statutory Regulation of Oil and Gas Exploration in Kentucky.**

[1] — Deep Versus Shallow Wells.

Under Kentucky law the classification of deep versus shallow well is clearly distinguished by statute. A “shallow well” is defined as any well drilled and completed at a depth of less than 4,000 feet or above the base of the lowest member of the Devonian Brown Shale.¹⁰ An exception to the 4,000 foot classification exists when the well is drilled and completed east of longitude line 84 degrees 30’. A “deep well” on the other hand is any well drilled and completed below what is defined as a shallow well.¹¹ There are no administrative differences under Kentucky law as to the agency that regulates shallow versus deep wells.

[2] — Well Spacing.

Kentucky does make a distinction based on shallow versus deep classification, when it comes to spacing. Section 353.510, which governs the spacing requirements for wells, expressly refers to “shallow wells.” Shallow wells that produce gas are required to be at least 500 feet from the nearest mineral boundary *and* 1,000 feet from the nearest gas producing well.¹² Shallow wells that produce oil must be at least 330 feet from the nearest mineral boundary *and* 660 feet from the nearest oil producing well.¹³ There is an additional set of requirements for oil producing wells whose completed depth is less than 2,000 feet. For these wells, the location must be at least 200 feet from the nearest mineral boundary and 400 feet from the nearest oil producing well.¹⁴ Additionally, wells less than 2,000 feet deep cannot be drilled if workable beds of coal can be found at lesser depths than where the oil is to be extracted.

¹⁰ Ky. Rev. Stat. Ann. §353.510.

¹¹ *Id.*

¹² *Id.*

¹³ *Id.*

¹⁴ *Id.*

The spacing requirements underlying deep wells, on the other hand, do not set specific and exact numeric guidelines. Rather, “the spacing of [deep] wells in proved oil and gas fields shall be governed by administrative regulations promulgated for that particular field.”¹⁵ Additionally, “[e]ach well permitted to be drilled upon any drilling unit shall be drilled in accordance with the administrative regulations promulgated by the commission and in accordance with a spacing pattern fixed by the commission for the pool in which the well is located.”¹⁶

Other considerations which appear to be specifically directed at deep wells include the following:

- (1) the regulation of the drilling, location, and the production of [deep] wells in any pool, so as to prevent reasonably avoidable net drainage from each developed unit so that each owner in a pool has the right and opportunity to recover his fair and equitable share of the recoverable oil and gas in such pool;
- (2) the establishment, by the commission, of drilling units for each pool in order to prevent waste, protect and enforce the correlative rights of the owners, and to avoid the augmenting and accumulation of risks arising from the drilling of an excessive number of wells; and
- (3) no drilling unit shall be smaller than the maximum area which can be drained efficiently by one deep well so as to produce the reasonable maximum recoverable oil or gas in that given area.¹⁷

[3] — Pooling.

A “pool” is defined as an underground reservoir containing a common accumulation of oil or gas or both. This includes each productive zone of a general structure which is completely separated from any other zone in the structure, or which for the purpose of section 353.500 to section 353.720 may be so declared by the Department.¹⁸

¹⁵ Ky. Rev. Stat. Ann. §353.651.

¹⁶ *Id.*

¹⁷ Ky. Rev. Stat. Ann. §353.651.

¹⁸ Ky. Rev. Stat. Ann. §353.510(9).

Conditions that govern the pooling of oil and gas interests include the following:

(1) Whenever any separate tract of land does not contain a location at which a well for oil or gas may be drilled, deepened, or reopened by reason of the spacing provisions of § 353.610, the Department shall order, after notice and a hearing, the pooling of all oil and gas interests in the separate tract with all like interests in a contiguous tract, as are necessary to afford the pooled tracts one (1) location for the drilling, deepening, or reopening of a well for the production of oil or gas in compliance with the spacing requirements of §§ 353.500 to 353.720. The Department shall require the development and operation of all pooled acreage as a single leasehold estate in accordance with regulations and rules promulgated under §§ 353.500 to 353.720.¹⁹

(2) Whenever a well would require the pooling of separate tracts or interests in order to comply with the spacing requirements of § 353.610, and the operator has secured the written consent or agreement from the owners of at least fifty-one percent (51%) of the interests in each tract, or portions thereof, included in the proposed pooled acreage, the Department shall order, after notice and a hearing, the pooling of all oil and gas interests in all tracts that are included within the proposed pooled acreage as established by the spacing requirements of § 353.610. *Any unknown or nonlocatable owners shall be deemed to have consented or agreed to the pooling, provided that the operator has complied with the publication requirements of § 353.640(1) with respect to the unknown or nonlocatable owners.*²⁰

(3) Whenever the operator owns or controls the right to develop the oil and gas underlying one hundred percent (100%) of the interests in each tract included in the proposed pooled acreage, the Department shall order, after notice and a hearing, the pooling of all oil and gas interests in all tracts that are included within the proposed pooled

¹⁹ Ky. Rev. Stat. Ann. §353.630(1).

²⁰ Ky. Rev. Stat. Ann. §353.630(2)(emphasis added).

acreage and issue a permit which requires the development and operation of all pooled tracts as a single leasehold estate.²¹

(4) No pooling shall be ordered except:

a. When an application has been filed to drill, deepen, or reopen a well within the distance limitations prescribed in § 353.610; and

b. When a lessee or owner of an oil or gas interest in the tract shall request the pooling.²²

(5) No pooling shall be ordered with respect to any tract or portion thereof upon which a well is drilled, deepened, or reopened:

a. Unless the pooling was requested prior to the commencement of the drilling, deepening, or reopening of the well by a lessee or owner of an oil and gas interest in a contiguous tract pursuant to subsection (1), (2), or (3) of the statute; and

b. Unless the request, if made by the owner of an operating interest who elects to participate in the risk and cost of the drilling, deepening, or reopening of the well, is accompanied by a bond or other security satisfactory to and in an amount set by the director for the payment of such owner's share of the cost of drilling, deepening, or reopening the well.²³

[4] — Operational Requirements/Administrative Jurisdiction.

There do not appear to be any operational requirement distinctions under Kentucky law based on whether a well is classified as shallow or deep. There also does not appear to be any administrative differences under Kentucky law, as to what agency regulates what, based on whether a well is classified as shallow or deep.

²¹ Ky. Rev. Stat. Ann. §353.630(3).

²² Ky. Rev. Stat. Ann. §353.630(4).

²³ Ky. Rev. Stat. Ann. §353.630(5).

§ 12.04. Statutory Regulation of Oil & Gas Exploration in Pennsylvania.

[1] — Deep Versus Shallow Wells.

Pennsylvania does not appear to expressly define by footage depth a shallow well from a deep well. Under Pennsylvania law, the distinction appears to be based on the Onondaga horizon with listed depths of about 3,800 feet. Pennsylvania's Oil and Gas Conservation Law (58 P.S. § 401 *et seq.*) does not apply to “any well or wells which do not penetrate the Onondaga horizon, or in those areas in which the Onondaga horizon is nearer to the surface than *thirty-eight hundred feet*, any well or wells which do not exceed a depth of thirty-eight hundred feet beneath the surface.”²⁴

Pennsylvania's Oil and Gas Conservation Law also does not apply to “any well or wells of whatever depth commenced prior to the effective date of the act, except such wells previously completed in strata above the Onondaga horizon, *but subsequent to the effective date of this act drilled deeper than the Onondaga horizon*, or three thousand eight hundred feet, whichever is deeper, provided that such wells may be considered in spacing and pooling orders entered by the commission.”²⁵ This would seem to suggest that “grandfathered” wells could conceivably be drilled deeper than the 3,800 foot statutory zone and still not be subject to regulation by the Pennsylvania Oil and Gas Conservation Commission.

In contrast, operators *are required* to obtain a permit before drilling any well that will penetrate the Onondaga or deeper horizons or a depth of three thousand eight hundred feet, whichever is deeper.²⁶ “Onondaga horizon” means the top of the Onondaga formation, except in those areas in which the Onondaga formation is not present, and in such areas the term shall be understood to mean either the top of the stratigraphic horizon first appearing in the interval of the missing Onondaga formation, or where strata older than the top of the Onondaga are exposed at the surface, then the term “Onondaga horizon” shall mean the surface.²⁷

²⁴ 58 P.S. §403 (emphasis added).

²⁵ *Id.* (emphasis added).

²⁶ 58 P.S. §406(a).

²⁷ 58 P.S. §402(6).

[2] — Well Spacing.

Pennsylvania does not seem to have a rigid length specific spacing requirement, but rather, seems to approach the issue of spacing on a case-by-case basis. The well spacing statute states that “the commission shall . . . enter an order establishing well spacing and drilling units of a specified and an approximate uniform size and shape for each pool.”²⁸ Of note, however, are the following requirements with regards to spacing:

- (1) In areas in which no spacing order has been entered and no application is pending, no permit shall be issued for the drilling of a well unless the location of the well is at least 330 feet from the nearest outside boundary line of the lease on which it is located;²⁹
- (2) No more than 10 square miles shall be included in any single application for a spacing order;³⁰
- (3) Notice, consisting of publication for two successive weeks in a newspaper in general circulation in each county where any land which may be affected by such order is located, shall be given at least 15 days prior to the hearing on the application;³¹
- (4) Within 45 days after the application for spacing is filed the Commission is required to either enter an order establishing spacing units and specifying the size and shape of the units, which shall be such as will, in the opinion of the Commission, result in the efficient and economic development of the pool as a whole or shall enter an order dismissing the application. The uniform size of the spacing units shall not be smaller than the maximum area that can efficiently and economically be drained by one well,³² and;
- (5) An order establishing spacing units shall specify the minimum distance from the nearest boundary of the spacing unit at which

²⁸ 58 P.S. §407.

²⁹ 58 P.S. §406 (emphasis added).

³⁰ 58 P.S. §407(1)

³¹ 58 P.S. §407(2)

³² 58 P.S. §407(4)

a well may be drilled. The minimum distance provided shall be the same in all spacing units established under said order with necessary exceptions for wells drilled or drilling at the time of the filing of the application In granting exceptions to the spacing order, the Commission may restrict the production from such well so that each person entitled thereto in such spacing unit shall not produce or receive more than his just and equitable share of the production.³³

When determining the area to be included in a well spacing order, including the acreage to be embraced within each unit and the shape and area within which wells may be drilled, the commission may consider the following factors:

- (1) The surface topography and property lines of the lands underlaid by the pool;
- (2) The plan of well spacing then being employed or proposed in such pool;
- (3) The depth at which production from said pool has been found;
- (4) The nature and character of the producing formation or formations, and whether the substances produced or sought to be produced are gas or oil;
- (5) The maximum area which may be drained efficiently and economically by one well; and
- (6) Any other available geological or scientific data pertaining to said pool, which may be of probative value to the commission in determining the proper spacing and well drilling unit, with due and relative allowance for the correlative rights and obligations of the producers and royalty owners' interest.³⁴

Except where the circumstances reasonably require otherwise, spacing units are generally required to be approximately uniform in size and shape for the entire pool.³⁵ An order establishing spacing units shall specify the

³³ 58 P.S. §407(6).

³⁴ 58 P.S. §407(3).

³⁵ 58 P.S. §407(5).

minimum distance from the nearest boundary of the spacing unit at which a well may be drilled.³⁶ The minimum distance provided shall be the same in all spacing units established under said order with necessary exceptions for wells drilled or drilling at the time of the filing of the application.³⁷ In the event that both oil wells and gas wells are found producing from the same pool, the commission shall have the power to create units of one size for oil wells and of a different size for gas wells.³⁸

[3] — Pooling.

“Pool” means an underground reservoir containing a common accumulation of oil and gas, or both, not in communication laterally or vertically with any other accumulation of oil or gas.³⁹ When two or more separately owned tracts are embraced within a spacing unit, or when there are separately owned interests in all or a part of a spacing unit, the interested persons may integrate their tracts or interests for the development and operation of the spacing unit.⁴⁰ In the absence of voluntary integration, the Commission, upon the application of any operator having an interest in the spacing unit, shall make an order integrating all tracts or interests in the spacing unit for the development and operation thereof and for the sharing of production therefrom.⁴¹

The Commission, as part of the order establishing a spacing unit or units, shall prescribe the terms and conditions upon which the royalty interests in the unit or units shall, in the absence of voluntary agreement, be deemed to be integrated without the necessity of a subsequent separate order integrating the royalty interests.⁴² Each such integration order shall be upon terms and conditions that are just and reasonable, and shall be made only after a public hearing after notice by certified mail to all other operators and

³⁶ 58 P.S. §407(6).

³⁷ *Id.*

³⁸ 58 P.S. §407(5).

³⁹ 58 P.S. §402(10).

⁴⁰ 58 P.S. §408(a).

⁴¹ *Id.*

⁴² *Id.*

royalty owners within the unit whose interests are of record, at least fifteen days prior to the day of the hearing.⁴³

Each such integration order shall authorize the drilling, equipping, and operation, or operation, of a well on the spacing unit; shall provide who may drill and operate the well; shall prescribe the time and manner in which all the operators in the spacing unit may elect to participate therein; and shall make provision for the payment by all those who elect to participate therein of the reasonable actual cost thereof, plus a reasonable charge for supervision and for interest on past due accounts.⁴⁴

If requested, each such integration order shall provide just and equitable alternatives whereby an operator who does not elect to participate in the risk and cost of the drilling and operation of a well may elect to surrender his leasehold interest to the participating operators on some reasonable basis and for a reasonable consideration which, if not agreed upon, shall be determined by the Commission, or may elect to participate in the drilling and operation of the well on a limited or carried basis upon terms and conditions determined by the Commission to be just and reasonable.⁴⁵

If one or more of the operators shall drill, equip, and operate, or pay the costs of drilling, equipping or operating a well for the benefit of a nonparticipating operator, as provided for in an order of integration, then such operator or operators shall be entitled to the share of production from the spacing unit accruing to the interest of such nonparticipating operator, exclusive of one-eighth of the production, until the market value of such nonparticipating operator's share of the production, exclusive of such one-eighth of production equals double the share of such costs payable by or charged to the interest of such nonparticipating operator.⁴⁶

If there is a dispute as to the costs of drilling, equipping or operating a well, the Commission shall determine such costs. In instances where a well

⁴³ *Id.*

⁴⁴ 58 P.S. §408(b).

⁴⁵ *Id.*

⁴⁶ *Id.*

is completed prior to the integration of interests in a spacing unit, the sharing of production shall be from the effective date of the integration, except that, in calculating costs, credit shall be given for the value of each operator's share of any prior production from the well.⁴⁷

[4] — Operational Requirements/Administrative Jurisdiction.

There does not appear to be any operational requirement distinctions under Pennsylvania law, based on whether a well is classified as shallow or deep. There also does not appear to be any administrative differences as to what agency regulates operations under Pennsylvania law, based on whether a well is classified as shallow or deep.

§ 12.05. Statutory Regulation of Oil and Gas Exploration in Ohio.

[1] — Introduction.

Ohio does not distinguish between a “deep” and “shallow” well like West Virginia. However, Ohio law does dictate the minimum tract or drilling unit size, the distance from the nearest well in the same pool, and the distance from tract or unit boundaries, as discussed more fully below. In fact, the only potential legal implications in the depth of a well in Ohio is with regard to the regulations governing the *spacing* of certain wells, as pursuant to the Ohio Administrative Code § 1501:9-1-04.

In Ohio, the Division of Mineral Resources Management, an agency within the Ohio Department of Natural Resources, is the agency with the sole and exclusive authority to regulate the permitting, location, and spacing of all oil and gas wells within the state. As such, this division of the Ohio Department of Natural Resources has been delegated the authority to establish rules and regulations regarding the permitting and drilling of oil and gas wells, as well as the review of permit applications.

⁴⁷ *Id.*

[2] — Statutory Definitions.

Ohio Revised Code § 1509.01 enumerates several definitions that are commonly used in the Code's provisions applicable to the oil and gas industry. For the most part, these definitions are typical as compared to similar provisions of oil and gas law across the United States. According to section 1509.01, the following constitute some of the more frequently used terms in the Ohio Revised Code:

“Pool” means an underground reservoir containing a common accumulation of oil or gas, or both, but does not include a gas storage reservoir. Each zone of a geological structure that is completely separated from any other zone in the same structure may contain a separate pool.

“Field” means the general area underlaid by one or more pools.

“Drilling Unit” means the minimum acreage on which one well may be drilled, but does not apply to a well for injecting gas into or removing gas from a gas storage reservoir.

“Correlative Rights” means the reasonable opportunity to every person entitled thereto to recover and receive the oil and gas in and under the person's tract or tracts, or the equivalent thereof, without having to drill unnecessary wells or incur other unnecessary expense.

[3] — Well Spacing.

In Ohio, the Chief of the Division of Mineral Resources Management, with the approval of the Technical Advisory Council on oil and gas, may adopt, amend, or rescind rules relative to “minimum acreage” requirements for drilling units and minimum distances from which a new well may be drilled or an existing well deepened, plugged back, or reopened to a source of supply different from the existing pool from boundaries of tracts, drilling units, and other wells for the purpose of conserving oil and gas reserves.⁴⁸⁴⁹

⁴⁸ Ohio Rev. Code Ann. § 1509.24.

⁴⁹ The Technical Advisory Council on oil and gas is created in Ohio Rev. Code Ann. § 1509.38.

Pursuant to Ohio law, the Division of Mineral Resources Management:

[S]hall not issue a permit for the drilling of a new well, the reopening of an existing well, or the deepening or plugging back of an existing well to a different pool for the production of oil and gas unless the proposed well location and spacing substantially conform to the requirements of applicable Ohio law.⁵⁰

The rules and regulations regarding the location of oil and gas wells can be found in Ohio Administrative Code § 1501:9-1-04. The spacing requirements pursuant to Ohio law are based on the depth of a proposed well, and therefore no permit will be issued without the consideration and analysis of the depth of a proposed well.

Pursuant to these regulations, for a permit to be issued to drill, deepen, reopen, or plug back a well for the production of oil and gas from pools from zero (0) to one thousand (1,000) feet in depth, the proposed well must be located: (a) upon a tract or drilling unit containing *at least* one acre; (b) *at least* two-hundred (200) feet from any well drilling to, producing from, or capable of producing from the same pool; and (3) *at least* one hundred (100) feet from any boundary of the subject tract or drilling unit.⁵¹

In the same respect, a permit will not be issued to drill, deepen, reopen, or plug back a well for the production of oil or gas from pools ranging from one thousand (1,000) feet to two thousand (2,000) feet in depth, unless the proposed well is located: (a) upon a tract or drilling unit containing *at least* one acre; (b) *at least* four hundred sixty (460) feet from any well drilling to, producing from, or capable of producing from the same pool; and (c) *at least* two hundred thirty (230) feet from any boundary of the subject tract or drilling unit.⁵²

With regard to wells for the production of oil or gas from pools from two thousand (2,000) to four thousand (4,000) feet, no permit will be issued unless the proposed well is located: (a) upon a tract or drilling unit

⁵⁰ Ohio Admin. Code Ann. § 1501:9-1-04.

⁵¹ *Id.*

⁵² *Id.*

containing *at least* twenty (20) acres; *at least* six hundred (600) feet from any well drilling to, producing from, or capable of producing from the same pool; and (c) *at least* three hundred (300) feet from any boundary of the subject tract or drilling unit.⁵³

Finally, the Ohio Administrative Code provides that no permit will be issued to drill, deepen, reopen, or plug back a well for the production of oil or gas from pools from four thousand (4,000) feet or deeper unless the well is located: (a) upon a tract or drilling unit containing *at least* forty (40) acres; (b) *at least* one thousand (1,000) feet from any well drilling to, producing from, or capable of producing from the same pool; and (c) *at least* five hundred (500) feet from any boundary of the subject tract or drilling unit.⁵⁴

With respect to new applications to drill wells in urbanized areas, the proposed wellhead location must be no closer than seventy-five (75) feet to any property not within the subject tract or drilling unit.⁵⁵ According to the applicable provisions of the Ohio Administrative Code, locating the wellhead closer than seventy-five (75) feet to a property not within the subject tract or drilling unit may be approved by the Chief of the Division of Mineral Resources Management if the owner and resident of the property in question — in writing — approves of the proposed wellhead location, or the Chief waives the seventy-five (75) foot requirement.⁵⁶

Finally, in accordance with the applicable provisions of the Ohio Administrative Code, wells drilled, deepened, reopened, reworked, or plugged back for purposes other than the production of oil and gas will be considered as “special situations,” and each will be evaluated in accordance with the issues of conservation of natural resources and of safety.⁵⁷ Decisions as to the spacing of such wells will be determined after evaluation of such “special circumstances,” and Ohio law provides that rules may be promulgated for some specific types of these wells.⁵⁸

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ *Id.*

[4] — Pooling.

Unlike several other states, Ohio law does not necessarily *compel* pooling agreements. Although in some circumstances a mandatory pooling order may be requested, Ohio law generally does not compel pooling agreements. Specifically, the Ohio Revised Code states:

The owners of adjoining tracts may agree to pool such tracts to form a drilling unit that conforms to the minimum acreage and distance requirements of the Division of Mineral Resources Management under Ohio Revised Code § 1509.24⁵⁹ or § 1509.25.⁶⁰ Such agreement shall be in writing, a copy of which shall be submitted to the [Division of Mineral Resources Management] with the application for permit required by Ohio Revised Code § 1509.05. Parties to the agreement shall designate one of their number as the applicant for such permit.⁶¹

Thus, Ohio law recognizes “permissive” pooling rights among owners of adjoining tracts. However, under certain circumstances, Ohio law recognizes “mandatory” pooling.

⁵⁹ Ohio Rev. Code Ann. § 1509.24 states:

The chief of the division of mineral resources management, with the approval of the technical advisory council on oil and gas created in section 1509.28 of the Revised Code, may adopt, amend, or rescind rules relative to minimum acreage requirements for drilling units and minimum distances from which a new well may be drilled or an existing well deepened, plugged back, or reopened to a source of supply different from the existing pool from boundaries of tracts, drilling units, and other wells for the purpose of conserving oil and gas reserves.

Section 1501:9-1-04 of the Ohio Administrative Code, as fully set forth above, enumerates the spacing requirements pursuant to this authority.

⁶⁰ Ohio Rev. Code Ann. § 1509.25 states:

The chief of the division of mineral resources management, upon the chief’s own motion or upon application of an owner, may hold a hearing to consider the need or desirability of adopting a special order for drilling unit requirements in a particular pool different from those established under section 1509.24 of the Revised Code.

⁶¹ Ohio Rev. Code Ann. § 1509.26.

Pursuant to Ohio law, if a tract of land is of insufficient size or shape to meet the requirements for drilling a well thereon as provided in Ohio Revised Code § 1509.24 or § 1509.25, whichever is applicable, and the owner has been unable to form a drilling unit under agreement as provide in Ohio Revised Code § 1509.26, on a just and equitable basis, the owner of such tract may make an application to the Division of Mineral Resources Management for a *mandatory* pooling order.⁶²

Pursuant to this provision of the Ohio Revised Code, an application for a mandatory pooling order must include such data and information “as shall be reasonably required by the Chief of the Division of Mineral Resources Management,” and shall also “be accompanied by an application for a permit as required by Ohio Revised Code § 1509.05.”⁶³

Once the application for a mandatory pooling order has been received and reviewed by the Chief of the Division of Mineral Resources Management pursuant to Ohio Revised Code § 1509.27, the Chief will then notify all owners of land within the area proposed to be included within the order of the filing of such application and their right to a hearing.⁶⁴ After the hearing (if requested), or after the expiration of thirty (30) days from the date notice of the application was mailed to such owners, the Chief of the Division of Mineral Resources Management, if satisfied that the application is proper in form and that mandatory pooling is necessary to “protect correlative rights” or to “provide effective development, use, or conservation of oil and gas,” will then issue a drilling permit and a mandatory pooling order comply with all requirements for drilling a well under applicable Ohio law.⁶⁵

§ 12.06. Statutory Regulation of Oil and Gas Exploration in New York.

[1] — Deep Versus Shallow Wells.

Under New York law the classification of deep versus shallow well is not clearly distinguished by statute. There are differences in the spacing of gas

⁶² See Ohio Rev. Code Ann. § 1509.27.

⁶³ Ohio Rev. Code Ann. § 1509.05.

⁶⁴ *Id.*

⁶⁵ *Id.*

wells based on various depths but these are not specifically laid out as “deep wells” or “shallow wells” but rather fall into various classifications based on the formations from which the gas is produced. Due to the fact that a clear distinction does not exist, there are no administrative differences under New York law as to the regulatory agency that monitors shallow or deep wells.

In New York, no pending legislation exists which would change the current law in this area, however, the New York Department of Environmental Conservation (DEC) has effectively placed a moratorium on drilling for gas in the Marcellus Shale formation as the agency considers a review of the state’s regulatory policies.⁶⁶ New York has also undertaken a detailed review of permitting procedures and completed a draft Supplemental Generic Environmental Impact Statement (draft SGEIS) which analyzes potential impacts of Marcellus Shale gas development using horizontal drilling and high-volume hydraulic fracturing. The draft SGEIS public comment period and subsequent concerns regarding the potential effects of hydraulic fracturing on groundwater and other high profile issues have resulted in additional review and political and public comment.⁶⁷ Needless to say, development of Marcellus wells in New York is the subject of a great debate and tangled in a web of hyperbole and confusion regarding the effects (or lack thereof) of hydraulic fracturing. Thus, any academic question regarding the differences between shallow or deep gas wells is not the primary issue of concern in New York at this time.

[2] — Conditions Under Which Permits May Be Issued and Exceptions to Said Conditions.

In New York, the applicable permitting statute states that the DEC “shall issue a permit to drill, deepen, plug back or convert a well, if the proposed spacing unit submitted . . . conforms to statewide spacing.”⁶⁸ The “statewide spacing” requirement referred to above is defined in § 23-0501 as spacing

⁶⁶ For a detailed compilation of Oil & Gas Law in New York see John H. Heyer II’s *Selected Statutory Provisions Affecting Oil and Gas Interests and Operations in New York State*.

⁶⁷ More information regarding New York Marcellus shale operations and a link to the entire SGEIS document can be found at <http://www.dec.ny.gov/energy/58440.html>.

⁶⁸ N.Y. Env’tl. Conserv. Law § 23-0503 (2008).

requirements which are within 10 percent of the following sizes unless otherwise specifically stated:

- For Medina gas pools at any depth, 40 acres with the wellbore within the target formation no less than 460 feet from any unit boundary.
- For Onondaga reef or Oriskany gas pools at any depth, 160 acres with the wellbore within the target formation no less than 660 feet from any unit boundary.
- For fault-bounded Trenton and/or Black River hydrothermal dolomite gas pools where the majority of the pool is between 4,000 and 8,000 feet deep, 320 acres with the proposed productive section of the wellbore within the target formation no less than one-half mile from any other well in another unit in the same pool and no less than 1,000 feet from any unit boundary that is not defined by a field-bounding fault but in no event less than 660 feet from any unit boundary.
- For fault-bounded Trenton and/or Black River hydrothermal dolomite gas pools where the majority of the pool is below 8,000 feet, within five percent of 640 acres with the proposed productive section of the wellbore within the target formation no less than one mile from any other well in another unit in the same pool and no less than 1,500 feet from any unit boundary that is not defined by a field-bounding fault but in no event less than 660 feet from any unit boundary.
- For shale gas pools at any depth, for a vertical well outside any existing spacing unit for the same formation, 40 acres with the wellbore within the target formation no less than 460 feet from any unit boundary.
- For shale gas pools at any depth, for a horizontal well outside any existing spacing unit for the same formation and with a written commitment from the well operator to drill infill wells pursuant to subdivision 4 of section 23-0503 of the statute . . . up to 640 acres with the initial horizontal wellbore or wellbores within the target formation approximately centered in the spacing unit and no wellbore in the target formation less than 330 feet from any unit boundary.

- For shale gas pools at any depth, for a horizontal well outside any existing spacing unit for the same formation and in the absence of a written commitment from the well operator to drill infill wells . . . 40 acres with the wellbore within the target formation no less than 330 feet from any unit boundary plus the number of additional acres necessary and sufficient to ensure that the wellbore within the target formation is not less than 330 feet from any unit boundary.
- For all other gas pools where the majority of the pool is above the depth of 4,000 feet, 80 acres with the wellbore within the target formation no less than 460 feet from any unit boundary, plus, if applicable, the number of additional acres necessary and sufficient to ensure that any horizontal wellbore within the target formation is not less than 460 feet from any unit boundary.
- For all other gas pools where the majority of the pool is 4,000 to 6,000 feet deep, 160 acres with the wellbore within the target formation no less than 660 feet from any unit boundary, plus, if applicable, the number of additional acres necessary and sufficient to ensure that any horizontal wellbore within the target formation is not less than 660 feet from any unit boundary.
- For all other gas pools where the majority of the pool is 6,000 to 8,000 feet deep, 320 acres with the wellbore within the target formation no less than 1,000 feet from any unit boundary, plus, if applicable, the number of additional acres necessary and sufficient to ensure that any horizontal wellbore within the target formation is not less than 1,000 feet from any unit boundary.
- For all other gas pools where the majority of the pool is below 8,000 feet, within five percent of 640 acres with the wellbore within the target formation no less than 1,500 feet from any unit boundary, plus, if applicable, the number of additional acres necessary and sufficient to ensure that any horizontal wellbore within the target formation is not less than 1,500 feet from any unit boundary.⁶⁹

Additionally, spacing units are generally required to be of approximately uniform shape with other spacing units within the same field or pool, and

⁶⁹ N.Y. Env'tl. Conserv. Law § 23-0501 (2008).

about other spacing units in the same pool, unless sufficient distance remains between units for another unit to be developed.⁷⁰

Every person who applies for a permit to drill, deepen or plug back a well to a different pool must control through fee ownership, voluntary agreement, or integration no less than 60 percent of the acreage within the proposed spacing unit for the well.⁷¹ In addition to the acreage requirement, any person applying for a permit must provide the Department of Environmental Conservation with a map depicting the proposed spacing for the well, the surface and bottom hole locations of the well, the location of the wellbore within the target formation, the location of any field-bounding faults within the proposed spacing unit, the acreage of the proposed spacing unit, and the boundaries of each tract wholly or partially within the proposed spacing unit as may be evidenced by tax identification numbers.⁷² Additionally, the applicant must show that he/or she controls the rights to the gas in the target formation. If the applicant does not control the gas rights, the Department of Environmental Conservation may issue a permit which is conditional upon the applicant completing the integration process required by section 23-0901 before the applicant may be allowed to drill under the permit.⁷³

The permitting requirements do not apply to wells drilled, deepened or plugged which were discovered, developed and operated prior to January 1, 1981, nor do they apply to wells drilled, deepened or plugged which were discovered, developed and operated prior to January 1, 1985 and which are not being extended.⁷⁴

[3] — Voluntary Integration and Unitization.

When two or more separately owned tracts are located within a spacing unit, or when there are separately owned interests in all or a part of a spacing unit, the interested persons may voluntarily integrate their tracts

⁷⁰ N.Y. Env'tl. Conserv. Law § 23-0503 (2008).

⁷¹ *Id.*

⁷² *Id.*

⁷³ N.Y. Env'tl. Conserv. Law § 23-0501 (2008).

⁷⁴ *Id.*

for the development and operation of the spacing unit. Such an agreement is then submitted to the Department of Environmental Conservation seeking approval. The DEC will grant such approval if the agreement is in the public interest or if such approval is reasonably necessary to prevent waste.⁷⁵

With 21 days prior notice to the fee owners of oil and gas interests under lease in a spacing unit, a well operator may record as to each tract for which notice has been given a declaration of voluntary integration. The declaration of voluntary integration shall include the acreage applicable to each tract involved and the proportion such acreage bears to the entire spacing unit. The declaration of voluntary integration shall be final and binding.⁷⁶

[4] — Compulsory Integration and Unitization.

In the absence of voluntary integration as permitted by section 23-0701, if the Department of Environmental Conservation finds that integration is necessary to carry out the public policy of section 23-0301, which declares that it is in the public interest to reduce waste and maximize the recovery of oil and gas, the DEC shall make an order integrating all tracts or interests in the spacing unit for development and operation.⁷⁷ In order to make an order requiring the integration of interests in any spacing unit or requiring the development or operation of any field, pool or part thereof as a unit the Department of Environmental Conservation must perform a detailed study and analysis and after notice and hearing, must find that the integration of interests in a spacing unit is necessary to carry out the policy provisions of section 23-0301.

Any integration order is subject to the certain conditions. If upon issuance of a well permit by the Department of Environmental Conservation, the well operator does not control all owners within the spacing unit, either through lease or voluntary agreement, the DEC shall schedule an integration hearing. No later than thirty (30) days prior to the hearing, the well operator shall provide actual notice of the hearing to all uncontrolled owners wholly

⁷⁵ N.Y. Env'tl. Conserv. Law § 23-0701 (2008).

⁷⁶ *Id.*

⁷⁷ N.Y. Env'tl. Conserv. Law § 23-0901 (2008).

or partially within the spacing unit.⁷⁸ Prior to, or at the same time, as this notice, the operator shall provide the DEC with an estimate of the well costs that any owners electing to participate shall be required to pay to the well operator based on each owner's proportionate share of such costs and a list of each tract wholly or partially within the spacing unit, the acreage involved, the percentage interest of the total spacing unit of each tract, an indication of whether the tract is controlled by the well operator and the names and addresses of the uncontrolled owners.⁷⁹ Any uncontrolled owner has the right to elect to be integrated into the spacing unit as either an integrated participating owner,⁸⁰ an integrated non-participating owner,⁸¹ or an integrated royalty owner.⁸² If the Department of Environmental

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ "Integrated participating owner" or "participating owner" means an owner who elects to participate in the initial well in a spacing unit, pays all costs associated with participation and complies with all of the requirements for participation, including the terms of integration, specified in an order of integration issued pursuant to the compulsory integration provisions of this section. N.Y. Env'tl. Conserv. Law § 23-0901 (2008).

⁸¹ "Integrated non-participating owner" or "non-participating owner" means an owner who elects to reimburse the well operator, out of production proceeds, for such owner's proportionate share of the actual well costs of the initial well in a spacing unit and be subject to a risk penalty, and complies with all of the requirements for integration, including the terms of integration, as specified in an order of integration issued pursuant to the compulsory integration provisions of this section. The non-participating owner shall receive the full share of production attributable to such owner's proportionate interest in the spacing unit following the recoupment by the well operator of the owner's proportionate share of the actual well costs plus a risk penalty of 200 percent of the share of the actual well costs allocable to such owner. N.Y. Env'tl. Conserv. Law § 23-0901 (2008).

⁸² "Integrated royalty owner" means an owner who has either elected to be an integrated royalty owner or who does not elect to become either a participating owner or a non-participating owner. The integrated royalty owner shall receive a royalty equal to the lowest royalty in an existing lease in the spacing unit, but no less than one eighth. The integrated royalty owner shall have no obligation to the well operator or any other owner for any charges, taxes or fees associated with the operation of the oil or gas well and, notwithstanding any other law to the contrary, shall not be liable by reason of the owner's status as an integrated royalty owner for any claims for personal injury or property damage suffered by any person relating to the drilling and operation of the well. N.Y. Env'tl. Conserv. Law § 23-0901 (2008).

Conservation then finds that the operation is reasonably necessary to substantially increase the recovery of oil and gas, and the value of the estimated additional recovery of oil or gas exceeds the estimated additional cost incident to conducting such operation, then the DEC shall issue an order for unit operations.⁸³

The order shall not become effective until (1) the plan for unit operations prescribed by the Department of Environmental Conservation has been approved in writing by the owners of 60 percent or more in interest as the costs of such unit operations are shared under the order, and by owners of record of a like percentage of a one-eighth royalty interest in and to the unit area and (2) the DEC has made a finding, either in the order providing for unit operations, or in a supplemental order, that the plan for unit operations has been so approved by the required number of owners and royalty owners. However, if not approved within six months, the order shall cease to be of force and shall be revoked by the DEC.⁸⁴

§ 12.07. Conclusion.

As can be seen by the review of the statutes and regulations of several of the producing states in the Appalachian Basin, there is a lack of uniformity in the Basin about the types of permits required, regulations, and spacing of wells drilled to different depths or formations. This lack of uniformity heightens the need to be careful about the permitting and regulatory requirements that may exist, formation by formation, state by state. The lack of uniformity is a trap for the unwary who assume that permitting procedures and regulations in the Appalachian Basin are similar to mid-continent or western states. In an effort to avoid penalties, spacing objections, litigation costs and regulatory scrutiny, operators should be knowledgeable about these distinctions in each state in which they operate. As unconventional formation drilling and activity increases, knowledge of the permitting, regulatory and operational issues in some of the states discussed in this chapter will be imperative to avoid regulatory pitfalls.

⁸³ N.Y. Env'tl. Conserv. Law § 23-0901 (2008).

⁸⁴ *Id.*

