COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS MANAGEMENT

In re the Matter of the Application of Hilcorp Energy Company for Well Spacing Units	:	Application Date: July 15, 2013
Pulaski Accumulation *HEC 110-H Unit* *HEC 111-H Unit*	:	

APPLICATION OF HILCORP ENERGY COMPANY FOR WELL SPACING UNITS

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APPLICATION

Pursuant to 58 Pa. Consol. Statutes Oil & Gas § 407, Hilcorp Energy Company ("Hilcorp") hereby respectfully requests that the Pennsylvania Department of Environmental Protection ("DEP")[1] issue an order establishing spacing units covering an underground reservoir underlying approximately 3,267 acres containing a common accumulation of natural gas in the Utica-Point Pleasant formation, approximately 7,400 feet below the surface and 3,800 feet below the Onondaga horizon, located in the Northwest corner of Lawrence County and the Southwest corner of Mercer County in Pulaski Township (hereinafter referred to as the "Pulaski Accumulation"). It is comprised of the existing Kinkela North Unit and Kinkela South Unit, together with the proposed HEC 110-H Unit and HEC 111-H Unit, which as a whole possess substantially similar thickness, porosity and organic content, including mobile hydrocarbon components, in contrast with surrounding portions of the Utica-Point Pleasant formation, which

[1] The Pennsylvania General Assembly initially authorized the Oil and Gas Conservation Commission to execute and carry out the provisions of The Oil and Gas Conservation Law, 58 Pa. Consol. Statutes Oil & Gas § 401-419 (West 2010). The Commission was abolished and its powers and duties were transferred to the Department of Environmental Resources in 1971, 51 P.S. § 510-103(a), and to the Department of Environmental Protection by the Conservation and Natural Resources Act of 1995. 71 P.S. § 1340.503(a).

do not contain mobile hydrocarbon components in similar concentrations and do not communicate vertically or horizontally with the Pulaski Accumulation.

Hilcorp makes this request for the purpose of substantially increasing the ultimate recovery of oil and natural gas from the Pulaski Accumulation, consistent with the declared policy of the Commonwealth of Pennsylvania to encourage the development of oil and gas resources in the Commonwealth in such a manner that will prevent waste of oil and gas or loss in the ultimate recovery thereof and protect the correlative rights of all interest owners in the Pulaski Accumulation.

I. APPLICANT INFORMATION

Hilcorp Energy Company is a privately held oil and gas company that was established in 1989 and is based in Houston, Texas, and owns leasehold in the Commonwealth of Pennsylvania through its affiliate, Hilcorp Energy I, L.P., of which Hilcorp Energy Company is the General Partner.

Hilcorp has significant operations in Louisiana, Texas, Pennsylvania, Ohio and Alaska and operates more than 4,500 wells in the United States. From 2009 to 2010, Hilcorp acquired approximately 141,000 net acres in the Eagle Ford Shale trend in South Texas and drilled 90 wells establishing 32,000 BOE per day. To date, Hilcorp has leased more than 160,000 acres in the Utica and has drilled and completed 6 wells.

Both Hilcorp Energy Company and Hilcorp Energy I, L.P. are Texas companies with an address of 1201 Louisiana Ste. 1400, Houston, TX 77002. For the purposes of this application, the applicant is Hilcorp Energy Company.

II. PROJECT DESCRIPTION

The Pulaski Accumulation is located in Pulaski Township, Lawrence and Mercer Counties, Pennsylvania, and underlays 258 tracts of land.[2] The total land area overlying the Pulaski Accumulation is approximately 3,267 acres. At the time of this application, Hilcorp has acquired the right to drill on and produce from 3,232.5833 acres in the Pulaski Accumulation.[3]

A discovery well, the Pulaski-Kinkela 1H Well, has been drilled into the Pulaski Accumulation (the "Discovery Well"), establishing it as a "pool" as required by 58 P.S. § 407.[4] Hilcorp seeks an order establishing a total of four (4) spacing units over the Pulaski Accumulation, which would include the existing voluntarily pooled units (the Kinkela North Unit and the Kinkela South Unit) on which existing wells, including the Discovery Well, are located, and two proposed units, the HEC 110-H Unit (containing 1,234.74 acres)[5] and HEC 111-H Unit (containing 1177.899 acres),[6] each of which represent the maximum area that can be efficiently and economically drained from a single well pad located on the unit.[7]

III. AFFIDAVITS

The following testimony has been attached to this application supporting the establishment of spacing units over the Pulaski Accumulation: (1) Affidavit of Nina Delano, Geologist for Hilcorp Energy Company, establishing that the Pulaski Accumulation is a "pool," as required by 58 P.S. § 407;[8] (2) Affidavit of Kyle Koerber, Reservoir and Completion Engineer for Hilcorp Energy Company, establishing that the Pulaski Accumulation would be most efficiently drained from four well pads, one located on each the HEC 110-H Unit, the HEC 111-

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[2] See Exhibit A.
[3] See Affidavit of Richard Winchester, attached as Exhibit D.
[4] *Id.*
[5] See Exhibit B.
[6] See Exhibit C.
[7] See Affidavit of Kyle Koerber, attached as Exhibit E.
[8] See Affidavit of Nina Delano, attached as Exhibit F.

H Unit, the Kinkela North Unit, and the Kinkela South Unit,[9] and (3) Affidavit of Richard Winchester, Land Manager-New Ventures for Hilcorp, who exercises over-sight responsibility for land acquisitions in the Pulaski Accumulation, describing the project generally and the leasing efforts undertaken to acquire the oil and gas rights in the Pulaski Accumulation.[10]

IV. BACKGROUND: THE PROBLEM WITH THE RULE OF CAPTURE

The general purpose of forced pooling laws is to conserve oil and gas and to protect correlative rights by avoiding the harsh results and wasteful drilling practices that result from the application of the rule of capture: Bruce M. Kramer & Patrick H. Martin, The Law of Pooling and Unitization § 1.02 (3d 2008). The Supreme Court of Pennsylvania first recognized the rule of capture as it applies to natural gas in 1889 when it stated:

> [Minerals] belong to the owner of the land, and are part of it, so long as they are on or in it, and are subject to his control; but when they escape, and go into other land, or come under another's control, the title of the former owner is gone. Possession of the land, therefore, is not necessarily possession of the gas. If an adjoining, or even a distant, owner, drills his own land, and taps your gas, so that it comes into his well and under his control, it is no longer yours, but his.

Westmoreland & Cambria Natural Gas Co. v. DeWitt, 130 Pa. 235, 249-50 (1889).

In *Barnard v. Monongahela Natural Gas. Co.*, 216 Pa. 362 (1907), the Court addressed a hypothetical landowner who drills a well near his neighbor's property from which he extracts gas underlying that neighbor's property. The Court recognized that the rule leads to waste, stating, "This may not be the best rule; but neither the Legislature nor our highest court has given us any better. No doubt many thousands of dollars have been expended 'in protecting lines' in oil and gas territory that would not have been expended if some rule had existed by which it could have

[9] See Affidavit of Kyle Koerber, attached as Exhibit E.
[10] See Affidavit of Richard Winchester, attached as Exhibit D.

been avoided." *Id.* The rule of capture still applies in Pennsylvania with reference to wells drilled only as deep as the Marcellus Shale.

V. THE OIL AND GAS CONSERVATION LAW

The Pennsylvania legislature enacted The Oil and Gas Conservation Law, 58 Pa. Consol. Statutes Oil & Gas §§ 401-419 (West 2010) (hereinafter, the "Law"), in 1961 in order to address the problems arising from the application of the rule of capture. The Law, which applies only to wells that either penetrate the Onondaga horizon or are bottomed at least 3,800 feet below the surface, whichever is deeper, declares as an expressed policy of the Commonwealth of Pennsylvania that

> [It is] in the public interest to foster, encourage, and promote the development, production, and utilization of the natural oil and gas resources in this Commonwealth, and especially those which may exist ... below the Onondaga horizon, in such manner as will encourage discovery, exploration, and development without waste; and to provide for the drilling, equipping, locating, spacing and operating of oil and gas wells so as to protect correlative rights and prevent waste of oil or gas or loss in the ultimate recovery thereof, and to regulate such operations so as to protect fully the rights of royalty owners and producers of oil and gas to the end that the people of the Commonwealth shall realize and enjoy the maximum benefit of these natural resources ...

The Law's Declaration of Policy explains that it would be "impractical and detrimental to development" to impose new regulations to operations on formations lying above the Onondaga horizon since operations in shallower formations have been carried on continuously since the discovery of oil in 1850, current operations in shallow formations are being carried on "without appreciable waste," and that methods for producing oil and gas from shallower formations differ from production methods for deeper formations "in cost, methods, operating problems, and other important characteristics." Section 404 of the Law specifically prohibits waste in oil and gas operations carried out by wells penetrating the Onondaga horizon. 58 P.S. § 404.

The Law's regulations, promulgated in Chapter 79 of the Pennsylvania Code, define "correlative rights" as follows:

> The rights of each owner of oil and gas interest in a common pool or source of supply of oil or gas to have a fair and reasonable opportunity to obtain and produce his just and equitable share of the oil and gas in the pool or sources of supply without being required to drill unnecessary wells or incur other unnecessary expense to recover or receive the oil or gas or its equivalent.

79 Pa. Code § 1.

The regulations define "waste" as follows:

> (i) Physical waste as the term is generally understood in the oil and gas industry which includes the following:
>
> > (A) Permitting the migration of oil, gas or water from the stratum in which it is found to other strata if the migration would result in the loss of recoverable oil or gas, or both.
> >
> > (B) The drowning with water of a stratum or part thereof capable of producing oil or gas in paying quantities except for secondary recovery purposes or in hydraulic fracturing or other completion practices.
> >
> > (C) The unnecessary or excessive surface loss or destruction of oil or gas.
> >
> > (D) The inefficient or improper use, or unnecessary dissipation of reservoir energy.
>
> (ii) The drilling of more wells than are reasonably required to recover efficiently and economically the maximum amount of oil and gas from a pool.

79 Pa. Code § 1.

In order to achieve its purpose, the Law first requires a well to be drilled into the Onondaga horizon, which requires a permit. 58 P.S. § 406 (a). Then, that well's operator or any other operator of lands "directly and immediately affected" by the drilling of the well, or subsequent wells in the common oil or gas pool, may file a well spacing application. 58 P.S. § 407(1). The term "operator" as defined by the Law includes both oil and gas lessees and any

unleased owner of oil and gas rights in a pool, as to a 7/8 interest. 58 P.S. § 402 (7). An unleased owner of oil and gas rights in the pool is a royalty owner as to a 1/8 interest. *Id.*

VI. THE DEP SHOULD ESTABLISH WELL SPACING UNITS OVER THE PULASKI ACCUMULATION

A. Legal Standard

The Law requires the DEP, in order to carry out the Law's purpose, to enter an order establishing well spacing and drilling units upon proper application, notice to interest holders in the units, and after a hearing. 58 P.S. § 407. Before the DEP may enter an order establishing spacing units, a well must be drilled into a formation covered by the Law, establishing a "pool." *Id.* The Law defines a "pool" as "an underground reservoir containing a common accumulation of oil or gas, or both, not in communication laterally or vertically with any other accumulation of oil or gas." 58 P.S. § 402 (10). The operator of the well establishing the pool, or any operator of lands "directly and immediately affected by the drilling" of that well, or subsequent wells in the pool, may file an application for well spacing units with the DEP. 58 P.S. § 407 (1).

The application must (1) specify the producing horizon in the pool sought to be spaced, including the depth of the discovery well drilled into the pool, (2) include a plat "indicating the longitude and latitude of each well drilled to the pool sought to be spaced, and the area proposed to be included within the spacing order on a scale of 1,320 feet to an inch," (3) specify the size of the spacing unit recommended, and (4) indicate whether wells in the field are producing oil, gas or both, and the ratio of oil to gas produced if wells are producing both. 79 Pa. Code § 21 (a). The applicant has the option to include (1) a mapping showing the area to be included in each spacing unit in the area covered by the spacing order, (2) information regarding surface topography in the area to be covered by the spacing order, and (3) information regarding reservoir characteristics. 79 Pa. Code § 21 (a). No more than 10 square miles may be included in

any single application for a spacing order. *Id.* In addition, the DEP has the power to require the applicant to attach any additional information it deems relevant to the application. *Id.*

The order establishing spacing units must establish and specify the size and shape of the spacing units. 58 P.S. § 407 (4). The units must not be smaller than the maximum area that can be efficiently and economically drained by one well. *Id.* If the maximum drainable area cannot be determined at the time of the hearing, temporary units for orderly development of the pool must be created pending the determination of the most efficient and economic drainable area. *Id.* Generally, units must be of uniform size and shape for the entire pool. 58 P.S. § 407 (5). The DEP has the power to vary the size and shape of any individual unit in order to (1) take in to account wells already completed at the time the application is filed, or (2) to make a unit conform to oil and gas property lines, provided that units formed by the DEP conform to the area which will be drained by the well located within the area permitted by the order, and the acreage included in each unit is contiguous. *Id.*

The order must also specify the minimum distance from the nearest boundary of the spacing unit at which a well may be drilled. 58 P.S. § 407 (6). The distance provided must be the same for all units established by the order with necessary exceptions for wells drilled or drilling at the time of the filing of the application. *Id.*

After proper notice and a hearing, the DEP must either enter an order establishing spacing units covering all lands "determined or believed to be underlaid by" the common pool or enter an order dismissing the application within forty five days of the filing of this application. 58 P.S. § 407 (4) & (7). The well spacing order must cover all lands determined or believed to be underlain by the pool, and may be modified from time-to-time in order to fully and accurately

encompass the pool and to permit the drilling of additional wells in a uniform pattern at a uniform minimum distance from the nearest unit boundary. *Id.*

After the date of the notice of the hearing for a well spacing order, no additional well may be commenced in the pool until the spacing order is issued, unless authorized by the DEP. 58 P.S. § 407 (8). If a permit to drill is refused because of a pending spacing order application, and a well on property adjoining a leased tract in the proposed spacing unit is draining the oil and/or gas from the leased tract, the DEP has the power to shut-in the well, after notice and a hearing, if necessary to protect correlative rights, until the applicant has the opportunity to obtain a spacing order. 58 P.S. § 407 (9).

B. Hilcorp's Application Meets This Standard

i. *The Pulaski Accumulation is a "Pool"*

The Pulaski Accumulation is an underground reservoir underlying approximately 3,267 acres containing a common accumulation of natural gas in the Utica-Point Pleasant formation, approximately 7,400 feet below the surface and 3,800 feet below the Onondaga horizon, located in the Northwest corner of Lawrence County and the Southwest corner of Mercer County in Pulaski Township. It is comprised of the existing Kinkela North Unit and Kinkela South Unit, together with the proposed HEC 110-H Unit and HEC 111-H Unit, which as a whole possesses substantially similar thickness, porosity and organic content, including mobile hydrocarbon components, in contrast with surrounding portions of the Utica-Point Pleasant formation, which do not contain mobile hydrocarbon components in similar concentrations and do not communicate vertically or horizontally with the Pulaski Accumulation.

ii. *Existing Wells in the Pulaski Accumulation are Drilled to Such a Depth as to Bring It Under the Jurisdiction of the Law*

The Pulaski Accumulation is located at a depth of 7,400 feet below the surface and 3,800 feet below the Onondaga horizon.[11] The Discovery Well producing from the Pulaski Accumulation is drilled to a maximum true vertical depth of 7,514 feet below the surface and 3,800 feet below the Onondaga horizon.[12]

iii. *The Existing Wells "Directly and Immediately" Affect Hilcorp*

Hilcorp is the operator of the existing wells in the Pulaski Accumulation and has acquired the oil and gas rights as to 99% of the acreage contained in the Pulaski Accumulation (3,232.5833 acres out of 3,267.4778 acres).[13] Hilcorp's extensive interest in the oil and gas contained in the Pulaski Accumulation, along with the assets expended to obtain those interests and to drill the existing wells render Hilcorp a party that is directly and immediately affected by those wells. Therefore, Hilcorp is a proper party to apply to the DEP for a well spacing order.

iv. *The Proposed Units Represent the Maximum Area that Can Be Efficiently and Economically Drained from a Single Well Pad*

The Utica-Point Pleasant formation lacks sufficient permeability to be drained using a conventional vertical well.[14] Any drainage area that could be accessed by a conventional vertical well would not be large enough to achieve production in economically feasible quantities.[15] Using horizontal well technology coupled with hydraulic stimulation drastically improves production relative to vertical wells or horizontal unstimulated wells.[16] The oil and gas within the two proposed units, the HEC 110-H Unit and the HEC 111-H Unit, could not be drained from a

[11] See Affidavit of Nina Delano, attached as Exhibit F.
[12] *Id.*
[13] See Affidavit of Richard Winchester, attached as Exhibit D.
[14] See Affidavit of Kyle Koerber, attached as Exhibit E.
[15] *Id.*
[16] *Id.*

single well pad.[17] The distance across the two combined units makes it mechanically impossible to drain from a single well pad.[18] Accordingly, the HEC 110-H Unit and the HEC 111-H Unit each represent the maximum area that can be efficiently and economically drained from a single well pad.

v. *This Application Meets All Requirements of 58 P.S. § 407*

This application establishes that a Discovery Well has been drilled into the Pulaski Accumulation, which is located at a depth of 7,400 feet below the surface and 3,800 feet below the Onondaga horizon, establishing it as a "pool" for the purposes of the Law.[19] The two well spacing units proposed in this application are of approximately uniform size and shape, and represent the maximum area that can be efficiently and economically drained from a single well pad. The proposed units, together with the existing, voluntarily formed units in the Pulaski Accumulation, encompass the entirety of the Pulaski Accumulation.[20]

This application includes a plat indicating the longitude and latitude of the Pulaski Accumulation and of each well drilled into it, on a scale of 1,320 feet to an inch.[21] This application also includes a land map of the Pulaski Accumulation,[22] and of the proposed HEC 110-H Unit[23] and the HEC 111-H Unit,[24] showing the recommended size and shape of each unit, which is based on the maximum area that may be efficiently and economically drained from a single well pad. The Discovery Well drilled into the Pulaski Accumulation is producing both gas and oil, at a ratio of 55,800 SCF/BBL.[25]

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[17] *Id.*
[18] *Id.*
[19] See the Affidavit of Nina Delano, attached as Exhibit F.
[20] See the Affidavit of Kyle Koerber, attached as Exhibit E.
[21] See Exhibit G.
[22] See Exhibit A.
[23] See Exhibit B.
[24] See Exhibit C.
[25] See the Affidavit of Kyle Koerber, attached as Exhibit E.

In addition, this application includes a map showing the surface topography overlying the Pulaski Accumulation.[26] It also includes information regarding reservoir characteristics for the Pulaski Accumulation.[27] Finally, this application is accompanied by a fee of $1000, as required by 79 Pa. Code § 21 (d).

vi. *A Well Spacing Order for the Pulaski Accumulation Would Further the Purpose of the Law.*

A well spacing order for the Pulaski Accumulation would protect the correlative rights of all of the interest holders in the "pool" and prevent waste. By establishing spacing units over the Pulaski Accumulation that represent the maximum area that can be efficiently and economically drained from a single well pad, each owner of oil and gas interests in the Pulaski Accumulation will have a fair and reasonable opportunity to obtain his or her just and equitable share of the proceeds from oil and gas production without drilling unnecessary wells or incurring other unnecessary expenses. Due to the existence of non-consenting landowners at the center of each proposed unit, the possibility of over drilling exists in the absence of a well spacing order. Over drilling leads to waste, in the form of unnecessary surface loss and the inefficient use and unnecessary dissipation of reservoir energy.

VII. HEARING

Within forty five days of the filing of this application, the DEP must set a date for a hearing on the application, provide notice of the application and hearing to anyone with an interest in land which may be affected by the proposed well spacing order, and either enter an order establishing spacing units or entering an order dismissing the application. 58 P.S. § 407(4). The Law requires the DEP to provide notice of the hearing for two successive weeks in a newspaper of general circulation in the county where any land which may be affected by the

[26] See Exhibit H.
[27] See the Affidavit of Nina Delano, attached as Exhibit F.

order is located, and requires the DEP to mail notice to the persons specified in Exhibit I. 58 P.S. § 407(2). The publication and mailing of notice must be carried out at least 15 days prior to the date fixed for the hearing. *Id.*

VIII. CONCLUSION

The Law requires the DEP, in order to carry out the Law's purpose, to enter an order establishing well spacing and drilling units upon proper application, notice to interest holders in the units, and after a hearing. 58 P.S. § 407(4). Hilcorp respectfully submits that this application meets this standard. Hilcorp therefore asks the DEP to issue an order establishing spacing units as proposed above over the Pulaski Accumulation.

Respectfully submitted,

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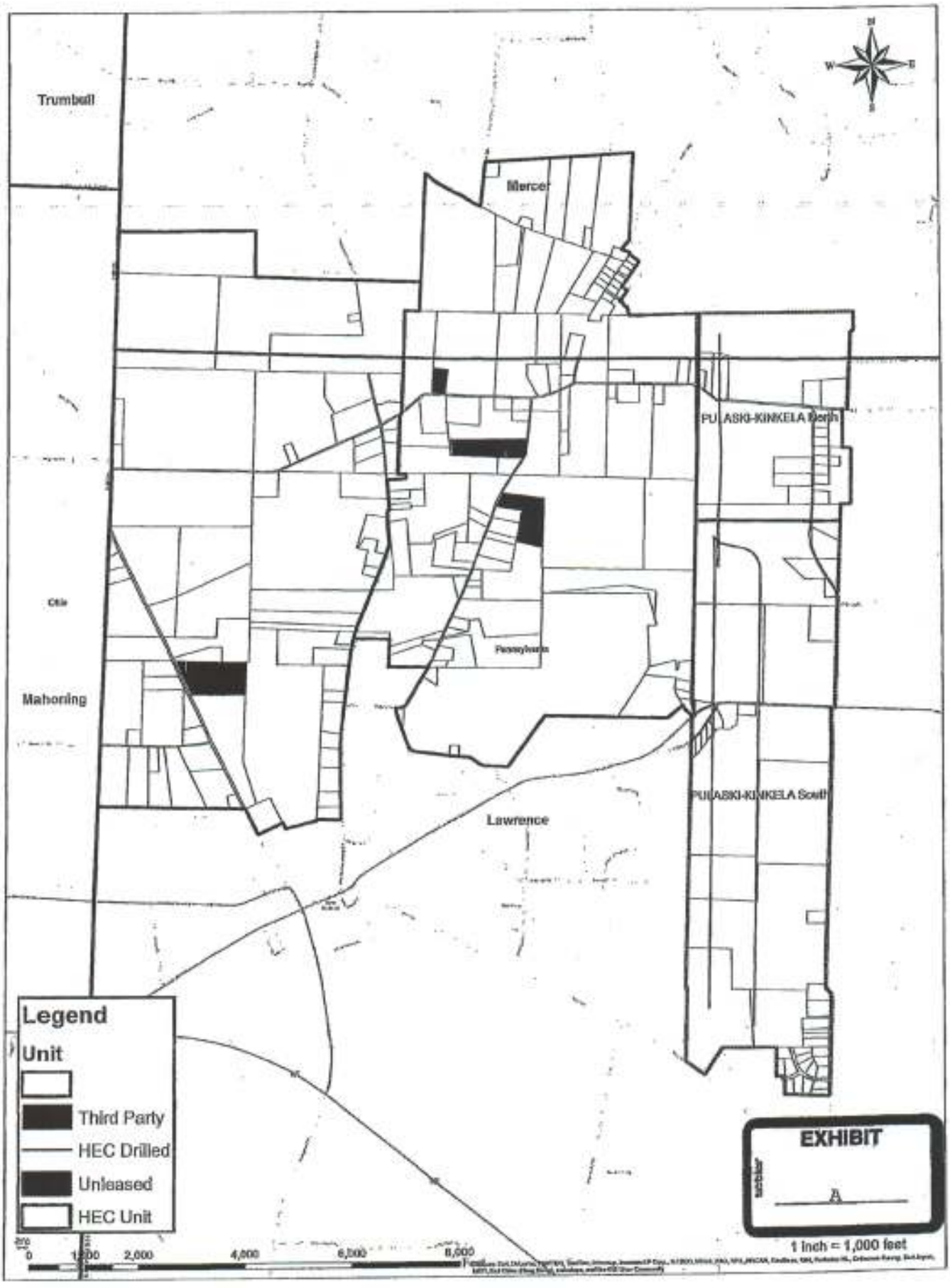
Trumbull
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PULASKI-KINKELA South
Legend
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Third Party
HEC Drilled
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2,000
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EXHIBIT
A
1 inch = 1,000 feet

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS MANAGEMENT

In Re:	The Matter of the Application of Hilcorp Energy Company for Well Spacing Units	))))	Docket No. 2013-01

PETITION TO INTERVENE

Pursuant to 1 Pa. Code § 35.28, Martin and Suzanne Matteo, husband and wife, Robert and Carol Valentine, husband and wife, and Steve Emery (hereinafter collectively referred to as the "Property Owners"), by and through their counsel, Omar K. Abuhejleh, Esq., hereby petition to intervene in the above-captioned matter and in support thereof aver the following:

1) Suzanne and Martin Matteo are the owners of property located at 1230 New Bedford-Sharon Road, West Middlesex, PA 16159.

2) Bob and Carol Valentine are the owners of property located at 1251 Deer Creek Road, West Middlesex, PA 16159.

3) Steve Emery is the owner of property located at 745 Sharon Bedford Road, West Middlesex, PA 16159.

4) Pursuant to 58 P.S. §§ 401-419 (Oil & Gas Conservation Law), Hilcorp Energy Company has filed an application for an order establishing spacing units covering an area of approximately 3,267 acres ("the parcel"). The application avers that a common accumulation of natural gas underlies the parcel and that such accumulation constitutes a pool as it is "not in

communication laterally or vertically with any other accumulation of oil or gas." 58 P.S. § 402(10).

5) The Property Owners' properties are among those included in the parcel.

6) The Pennsylvania Department of Environmental Protection (DEP) has appointed Michael L. Bangs, Esquire, as the hearing officer in this matter. Hearing Officer Bangs has scheduled a hearing for May 7-8, 2014.

7) The Property Owners own their mineral rights and have not leased any of these rights to Hilcorp or a third party.

8) The Property Owners' rights to their minerals and to prevent trespass upon their underground estates are guaranteed by Article I of the Pennsylvania Constitution, which states, "All men are born equally free and independent, and have certain inherent and indefeasible rights, among which are those of enjoying and defending life and liberty, of **acquiring, possessing and protecting property** and reputation, and of pursuing their own happiness." PA CONST. art. I, § 1 (emphasis added).

9) Additionally, Property Owners will be asserting their right, pursuant to 25 Pa. Code § 79.23(b), to oppose the spacing plan sought by Hilcorp.

10) Pursuant to 58 P.S. § 408, Hearing Officer Bangs, "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." 58 P.S. § 408(a). Hilcorp's application is premised upon the integration of the Property Owners' interests, as demonstrated by the plat indicating the location of the proposed wells. ***See*** Hilcorp's February 28, 2014 Supplemental Documents, Exhibit C-1. Therefore, if

Hearing Officer Bangs grants Hilcorp's application, it will result in the integration of the Property Owners' interests, which would allow Hilcorp to take their interests without their "voluntary agreement." ***Id.***

11) The Property Owners' interests are not represented by the existing parties because the only other party, the DEP, has staked out an amorphous position with a vague pre-trial statement from which it is impossible to discern what it attempts to prove or disprove at the upcoming hearing. Furthermore, to the extent that the DEP will represent the Property Owners' interests, there is nothing of record to demonstrate that such representation will be adequate, as their filings are devoid of any documents or statements that would establish that Hilcorp's attempt to avail itself of the Oil and Gas Conservation Law is improper and unfounded in the instant case or in any case involving horizontal drilling.

12) The Property Owners seek to intervene and if permitted to do so, shall introduce evidence to demonstrate that:

a. The identified accumulation of gas is not a "pool" within the meaning of 52 P.S. § 410(2).

b. Hilcorp's application is facially deficient, in that it does not include a plat "indicating the latitude and longitude of each well drilled to the pool sought to be spaced." 25 Pa. Code § 79.21(2). Although the DEP sent Hilcorp a deficiency letter requesting that it remedy this deficiency, Hilcorp's February 26, 2014 filing of supplemental documents contains the same plat with the same X and Y coordinates, which are not latitude and longitude coordinates. ***See*** Hilcorp's February 26, 2014 Supplemental Documents, Exhibit C. ***See also*** Hilcorp's February 28, 2014 Supplemental Documents, Exhibit G-1.

c. Hilcorp's application is facially deficient in that it fails to identify "each well drilled to the pool." 25 Pa. Code § 79.21(2). In particular, Hilcorp has filed documents with the DEP indicating the existence of well 3H (No. 073-20398) in the Pulaski-Kinkela South Unit, which Hilcorp did not identify in the plat supporting its application.

d. Hilcorp has not recommended spacing units based on "the maximum area which may be drained efficiently and economically by one well." 25 Pa. Code § 79.21. Rather, its spacing units are based on well pads for more than one horizontal drilling run. For instance, the Pulaski-Kinkela North Unit indicates a lateral (4H, No. 073-20384) extending from the well pad on the Pulaski-Kinkela South Unit.

e. The Oil and Gas Conservation Law's purpose of protecting correlative rights is inapplicable in instances of horizontal drilling for natural gas in shale formations.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the Petition to Intervene was sent April 25, 2014 by U.S. First Class Mail:

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pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF OIL AND GAS PLANNING AND PROGRAM MANAGEMENT

4/2/14 (Wednesday's Mail)

March 31, 2014

Second letter ever

Dear Property Owner:

You are receiving this notice because you have been identified as a property owner located within the area proposed for a well spacing order in Hilcorp's Application for Gas Well Spacing Units (Application). In the Application, Hilcorp requests that the Department of Environmental Protection (DEP) issue a well drilling and spacing unit order that establishes four gas well drilling units on approximately 3,267 acres of the Utica Shale Formation in Pulaski Township, Lawrence County, and Shenango Township, Mercer County.

DEP previously mailed you notice of an upcoming public hearing on this Application scheduled for March 25 and March 26, 2014, and the Hearing Officer's March 17, 2014, Order outlining the public participation process for this hearing.

DEP is writing today to notify you that the Hearing Officer issued an Order on March 25, 2014, rescheduling the hearing for May 7 and May 8, 2014. Please find the March 25, 2014, Order enclosed for your review. Please note the information regarding the time and location of the hearing. The Order also includes information concerning how you can participate if you choose to do so. This hearing is an administrative hearing conducted in accordance with the Oil and Gas Conservation Law, 58 P.S. § 401 *et seq.*, The Administrative Agency Law, 2 Pa.C.S §§ 501 et seq., *25 Pa. Code Chapter 79* and the General Rules of Administrative Practice and Procedure, *1 Pa. Code Part II.*

For more information about the Oil and Gas Conservation Law and Hilcorp's Application, visit www.dep.state.pa.us and click on "Oil and Gas," "Office of Oil and Gas Management" and then "Conservation Law." If you have additional questions or concerns, please contact me by e-mail at kklapkowsk@pa.gov or by telephone at 717.772.2199.

Sincerely,

Kurt Klapkowski
Director
Oil and Gas Planning and Program Management

Enclosure

EXHIBIT
C

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COMPULSORY POOLING AND UNITIZATION IN THE MARCELLUS SHALE: PENNSYLVANIA'S CHALLENGES AND OPPORTUNITIES

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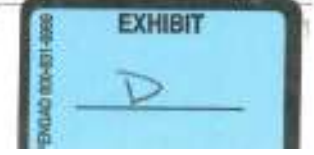
ABSTRACT

Pennsylvania is the birthplace of the oil and gas industry. In Titusville, as the black gold sprang from the ground, the rule of capture took hold and quickly became a fundamental tenet of oil and gas law. Those who did not drill a well on their own land risked losing their oil to their neighbors' wells. When the boom turned to bust, and the industry moved southwest, it left behind a legacy of rusting derricks and pumpjacks, not to mention a wealth of oil rendered unrecoverable because of haste and inefficiency.

In modern times, technology and ecology challenge the rule of capture. Horizontal drilling techniques and hydraulic fracturing of the Marcellus and Utica shale formations allow recovery of hydrocarbon deposits beyond the wildest expectations of Colonel Drake. Yet, despite 150 years of industry advances, a critical step remains elusive--compulsory



pooling--held hostage by the rule of capture. Compulsory pooling offers conservation, efficiency, and environmental ***48** *protection. By abrogating the 19th century rule of capture, and instead recognizing the correlative rights of all interest holders, Pennsylvania could greatly advance the cause of American energy independence. The Commonwealth should not further forestall the energy revolution upon it by clinging to the vestiges of archaic legal doctrine. It is time to move oil and gas law into the 21st century and release the rule of capture.*

This article discusses compulsory pooling and unitization in Pennsylvania, Ohio, West Virginia and New York. The authors believe that Pennsylvania should move to adopt a comprehensive scheme of compulsory pooling posthaste.

INTRODUCTION

The development of horizontal drilling and hydraulic fracturing in the Barnett Shale in Texas has brought Pennsylvania's energy economy full circle. The "Drake" discovery well, drilled in Titusville, Pennsylvania in 1859, launched an international search for oil that resulted in an enormous world-wide demand for fossil fuels.[1] However, at the inception of this new oil market in the late 1800s, the source of supply was generally greater than the demand for oil.[2] Oddly enough, oil production from Pennsylvania lands peaked in 1891, not long before the market imbalance shifted and demand began to outpace supply.[3]

Coal became the engine of Pennsylvania's energy industry. Pennsylvania relies on coal to produce nearly one-half of its net electricity, making it one of the largest coal-consuming states in the country.[4] Nonetheless, more than half of the coal produced in Pennsylvania is transported to other states throughout the Northeast and Midwest.[5] However, coal has generally fallen into disfavor as of late due to the high levels of pollutants that coal-fired power plants emit into the air. The Marcellus Shale Formation underlying the lands of Pennsylvania represents an opportunity for the Commonwealth to redefine itself as a leader in natural gas production.

The Marcellus Shale is the world's largest unconventional natural gas reserve.[6] As conventional natural gas reserves are depleted and the energy sector continues to come under pressure to find cleaner alternatives to power generation, the demand for natural gas, which has significantly lower carbon content than coal or petroleum, will increase substantially.[7] However, because the current price of natural gas is relatively ***49** low, much like oil prices were low in the heyday of Pennsylvania's oil production, producers are heavily focused on drilling activities. Therefore, the concepts of pooling and unitization are of supreme importance in the present state of natural gas production from Pennsylvania's Marcellus Shale.

The purposes of pooling and unitization are to conserve oil and gas and to protect correlative rights by avoiding the harsh results and wasteful drilling practices that result from the application of the rule of capture.[8] Under current Pennsylvania law, pooling and unitization in the Marcellus can only be accomplished through voluntary agreements between producers and land owners. This voluntary approach to pooling and unitization is problematic because a single non-consenting interest holder can potentially interfere with the cooperative production of a reservoir, resulting in decreased production and increased costs for all parties involved, and in greater negative impact to the surface estate. In order to address the problems related to the rule of capture, many major gas producing states have enacted compulsory pooling and unitization legislation in conjunction with well-spacing requirements. In order to take full advantage of the Commonwealth's natural gas reserve, Pennsylvania's General Assembly should take swift action to pass compulsory pooling and unitization legislation that is applicable to drilling in the Marcellus Shale.

BACKGROUND: THE PROBLEM WITH THE RULE OF CAPTURE

The renowned oil and gas attorney Robert E. Hardwicke concisely defined the rule of capture as it applies to oil and gas drilling in 1935 when he stated, "The owner of a tract of land acquires title to the oil and gas which he produces from wells drilled thereon, though it may prove that part of such oil and gas migrated from adjoining lands."[9] The Supreme Court of Pennsylvania first recognized the rule of capture as it applies to natural gas in 1889 when it stated:

> [Minerals] belong to the owner of the land, and are part of it, so long as they are on or in it, and are subject to his control; but when they escape, and go into other land, or come under another's control, the title of the former owner is gone. Possession of the land, therefore, is not necessarily possession of the

> gas. If an adjoining, or even a distant, owner, drills his own land, and taps your gas, so that it comes into his well and under his control, it is no longer yours, but his.[12]

The problem with the rule of capture is that an owner of land under which lies oil or gas, which is being extracted by another from a well situated on adjacent property, has but one remedy: to drill a well of his own. In *Barnard* v. *Monongahela Natural Gas. Co.*, 216 Pa. 362 (1907), the Court addressed a hypothetical landowner who drills a well near his neighbor's property from which he extracts gas underlying that neighbor's property. The Court stated, "What then can the neighbor do? Nothing; only go and do likewise. He must protect his own oil and gas. He knows it is wild and will run away if it finds an opening and it is his business to keep it at home."[13] The Court recognized that the rule leads to waste, stating, "This may not be the best ***50** rule; but neither the Legislature nor our highest court has given us any better. No doubt many thousands of dollars have been expended in protecting lines' in oil and gas territory that would not have been expended if some rule had existed by which it could have been avoided."[14] This opinion was written by the lower appellate court and was merely recited and affirmed by the Supreme Court.

The rule of capture still applies in Pennsylvania with reference to wells drilled only as deep as the Marcellus Shale. The Pennsylvania legislature enacted the Oil and Gas Conservation Law in 1961 in order to address the problems arising from the application of the rule of capture.[15] The law, however, only applies to wells drilled at least into the Onondaga Group, which underlies the Marcellus Shale formation.[16] Therefore, operators drilling wells only as deep as the Marcellus Shale cannot take advantage of the law's beneficial provisions. West Virginia's compulsory pooling statute is also inapplicable to wells that are bottomed above the Onondaga Shale.[17]

However, there may be a loophole available for well operators developing natural gas from the Marcellus Shale in both states that would allow them take advantage of the otherwise inapplicable statutory pooling provisions. In 2008, the West Virginia Supreme Court refused to issue a writ of prohibition against the Oil and Gas Conservation Commission, who sought to exercise authority over a well drilled more than twenty feet into the Onondaga Group, but that was completed in the Marcellus Shale.[18] The applicable statute granted authority to the Commission over "deep wells," which are defined as wells drilled more than twenty feet into the Onondaga Group.[19] The Court granted leave for the petitioners to file an appeal to the Commissioner's orders in the Circuit Court.[20] In September, 2010, the Circuit Court issued an order in which it interpreted the applicable statute to mean that all wells drilled more than twenty feet into the Onondaga Group but completed in the Marcellus Shale are statutory deep wells and subject to the regulatory authority of the Oil and Gas Conservation Commission.[21] This order suggests that an operator could take advantage of West Virginia's compulsory pooling statute that would otherwise be inapplicable to developing natural gas from the Marcellus Shale by drilling the well at least twenty feet into the Onondaga Group and filling the well so as to complete it at the desired depth in the Marcellus Shale.

Some well operators in Pennsylvania are taking advantage of a similar loophole in order to avoid restrictions imposed upon gas producers by the Coal and Gas Resource Coordination Act.[22] The Act requires wells drilled in areas with mineable coal seems to be spaced a minimum of 1,000 feet apart.[23] However, this requirement is waived if the well is drilled into the Onondaga Group.[24] Therefore, producers drilling through coal seams frequently drill a "rat hole" through the Marcellus Shale ***51** into the Onondaga Group, and then fill the hole with cement back up into the Marcellus Formation as a way of avoiding the 1,000 feet spacing restriction.[25] However, producers in both Pennsylvania and West Virginia have yet to attempt to exploit these putative loopholes in order to avail themselves of potentially beneficial compulsory pooling provisions.[26]

The only valid Pennsylvania statutory provisions that currently alter the rule of capture as applied to natural gas operations in the Marcellus Shale are found in the Oil and Gas Act.[27] However, these provisions only require operators to obtain a permit before drilling and provide that a well be drilled at a minimum distance from existing buildings and water sources.[28] There are no minimum spacing requirements between wells drilled into the Marcellus Shale.[29] The statute does allow the owner of a surface estate on which the gas owner or lessee plans to drill a gas well or the owner or operator of a coal mine that will be impacted by the drilling of a planned gas well to object to the issuance of a drilling permit.[30]

Besides the above restrictions and a few other enumerated reasons for denying a drilling permit, the DEP must issue a drilling permit if the applicant has complied with all permitting requirements.[31] Therefore, there is no impediment to a landowner who refuses to enter into a lease from drilling an offsetting well on his property. It is, however, in the best interest of both the landowner and the operator to cooperate in the gas production. Cooperation ensures maximum production at a minimum cost

for the benefit of both parties and with a minimum impact to the surface estate. Currently, the only method for cooperative production in the Marcellus Shale in Pennsylvania is through voluntary pooling and unitization agreements.

DISTINGUISHING POOLING AND UNITIZATION

The terms "pooling" and "unitization," while often used interchangeably, have separate and distinct meanings. A leading treatise on the subject provides the following concise definition of the terms and description of their relation to one another:

> Pooling, or a pooled unit, will describe the joining together of small tracts or portions of tracts for the purpose of having sufficient acreage to receive a well drilling permit under the relevant state or local spacing laws and regulations, and for the purpose of sharing production by interest owners in such a pooled unit. Without minimum well spacing requirements, pooling, as such, would not have developed. Unitization or unit operations, on the other hand, refer to the consolidation of mineral or leasehold interests covering all or part of a common source of supply. The primary function of unit operations is to maximize production by efficiently draining the reservoir, utilizing the best engineering techniques that are economically feasible.[12]

In other words, pooling is the consolidation of separate oil and gas interests for the production of oil and gas through a single well to be operated by a single entity ***52** for the benefit of all of the interest owners. The area established through the pooling of separate interests for production through a single well is referred to in this article as the "pooled unit." Unitization is the coordination of multiple, separately operated wells for the purpose of efficiently achieving maximum production from a single reservoir of natural gas or oil.[13] The area encompassing the separately owned, coordinated wells is referred to in this article as the "unit area." A "unit area" may encompass many "pooled units." The processes are somewhat similar, but they operate on a different scale. Pooling typically involves a single drilling company attempting to gain control of the interests of several owners of smaller tracts of land or other companies that have leased the oil and gas rights from such land owners. Unitization typically involves more than one drilling company, each of which have already pooled the interests of the separate landowners or who simply own the interests in their own right. Generally, the company that has pooled the largest interest in an entire reservoir of gas will initiate the unitization process and thereafter take the lead in coordinating the separate drilling operations.[14]

POOLING THROUGH VOLUNTARY AGREEMENTS

The typical manner in which well and unit operators pool and unitize separately owned tracts of land into a piece of property of sufficient size to employ the most efficient drilling practices is through voluntary lease agreements. Since the focus of this article is on pooling, the pertinent provisions of such a lease relate to how the owners of the individual tracts of land are compensated for conveying their interests in the natural gas underlying their properties to the well operators and how that compensation is effected by the operation of the lease's pooling clause. Generally, this compensation consists of a lease payment or delay rental payment, a bonus payment, and a royalty interest in the well's production.[15]

A lease payment or delay rental payment holds the lease for the operator until drilling and production occur.[16] The lease agreement may also provide for a bonus payment to the landowner as consideration for signing.[17] However, sometimes there is simply a large bonus payment that operates as the delay rental payment and holds the lease until drilling commences. The term covered by these payments is typically between 3 and 5 years.[18] Once production begins, the lease is held until production ceases.[19]

Once a well begins to produce, the lessor receives a royalty interest in the production.[20] In most states, including Pennsylvania, the statutory minimum for royalty payments is one-eighth (1/8) of the entire interest in the oil and gas produced, or ***53** 12.5%.[21] Landowners will sometimes have the negotiating power to bargain for greater than a one-eighth (1/8) interest in production.

Oil and gas leases generally contain a pooling provision, which allows the drilling company to combine the lessor's land with adjoining leased land to form a drilling unit.[22] The effect of such a provision is that when gas is produced from any part of the unit, the landowners receive their royalty interest as a proportion of the proceeds as measured by the amount of property they

own in the unit.[43]

The problem with the voluntary approach to pooling occurs when a landowner does not want to give up his working interest in the oil or gas for a mere royalty interest. His working interest allows him to retain the full benefit of production of gas that he produces from a well that he drills on his own land. Compulsory pooling legislation attempts to address the problem of the uncontrolled landowner unwilling to sacrifice his working interest for a royalty interest and the benefit of the operator's production and risk-taking.

WELL SPACING, POOLING, AND UNITIZATION: INTERRELATED CONCEPTS

State well spacing requirements are achieved through the issuance of spacing orders, which establish drilling units. The interests of separate tract owners within a single drilling unit must be pooled in order to compensate each owner from the production of the single well located on the drilling unit. Most states address well spacing and pooling in separate administrative proceedings.[44] For example, New York law requires an applicant for a drilling permit to demonstrate control of at least sixty percent of the acreage within a proposed spacing unit through "fee ownership, voluntary agreement, or integration [either voluntary or compulsory]."[45] However, if the applicant does not control the requisite oil and gas rights in the unit, the department[46] must provide him with a conditional permit, subject to the completion of the integration (pooling) process.[47] The applicant may exercise the right to drill granted by the permit once the integration process, governed by N.Y. Environmental Conservation Law § 23-0901, is complete.

Ohio's Oil and Gas Conservation Law establishes a similar relationship between well spacing requirements and pooling.[48] In order to obtain a drilling permit, an applicant must propose a drilling unit that meets the minimum acreage and distance requirements established by agency rule.[49] If the applicant's tract of land is not large enough to establish a drilling unit that meets the spacing requirements and he fails to form an appropriate drilling unit through a voluntary pooling agreement as provided in §1509.26, he may apply for a mandatory pooling order.[50] In Ohio, the administrative agency issues the drilling permit and mandatory pooling order ***54** simultaneously, unlike in New York, where an applicant may be granted a drilling permit conditioned on the completion of the compulsory pooling process.[51] This distinction is merely one of form rather than substance.

In both New York[52] and Ohio, the administrative agency must exercise discretion in determining whether the issuance of a compulsory pooling order is necessary to carry out the policies of preventing waste, maximizing recovery of oil or gas, and protecting correlative rights.[53]

Oil and gas conservation statutes in both Pennsylvania and West Virginia have compulsory pooling provisions that are inapplicable to drilling into the Marcellus Shale.[54] These provisions do not provide the state agency[55] with the same type of discretion as the Ohio and New York provisions discussed above, in that the agency must issue the pooling order in the absence of voluntary pooling if an operator files an application to establish drilling units and/or to pool all interests within a drilling unit if the application conforms with all statutory requirements.[56]

West Virginia's approach to compulsory pooling, which only applies to "deep wells,"[57] is peculiar in relation to the other three states discussed in this article. The well operator must obtain a permit to drill a discovery well,[58] which typically requires that the well be spaced at least 3,000 feet from any other deep well.[59] Once a discovery well is drilled that establishes a pool (in the sense of a gas reservoir), the operator of that well or an operator "of any lands directly and immediately affected by the drilling of such a discovery deep well, or subsequent deep wells in said pool" may apply to the agency to establish drilling units.[60] The agency is then tasked with partitioning "all lands determined or believed to be underlaid by such a pool"[61] into drilling units and issuing an order establishing those drilling units.[61] The agency is required to issue both types of orders if the application for each complies with all applicable rules and regulations,[62] but it may exercise limited discretion in determining the size and shape of the units established in its order.[63] West Virginia's approach to establishing drilling units and pooling interests within a unit both acts loosely as a coordinated unit operation in its own right and, at least in the context of oil production, sets the stage for compulsory unitization over a common pool in connection with a program of secondary recovery of oil.[64]

***55** New York's well spacing provisions also attempt to provide the best possible conditions for successful future unitization. The agency is only required to issue a drilling permit if the proposed spacing unit, in addition to complying with all other

applicable laws and regulations, "is of approximately uniform shape of other spacing units within the same field or pool, and abuts other spacing units in the same pool, unless sufficient distance remains between units for another unit to be developed."[45] The agency may issue a permit if these requirements are not met, but only if it determines that the proposed spacing unit achieves the stated policy objectives of reducing waste, increase overall recovery of resources, and protecting the correlative rights of all persons.[46] In this manner, New York's system of issuing well spacing orders ensures that the agency may eventually issue a fair compulsory unitization order with ease.

COMPULSORY POOLING AND THE NON-CONSENTING TRACT OWNER

Consider the following scenario: Operator Co., a natural gas drilling company, acquires control of natural gas underlying 70% of the land located in an area of adequate size to establish a drilling unit and obtain a permit to drill a discovery well. Operator Co. acquired this control by entering into typical oil and gas leases, which included voluntary pooling agreements, with the separate owners of tracts located within the potential drilling unit. The leases provide that in exchange for leasing their mineral interests to the company, each landowner will receive rental payments until a well is drilled on the unit, a bonus payment for signing the lease, and a one-eighth (1/8) royalty interest in their *pro rata* share of all gas produced from the well located on the spacing unit.

A majority of the remaining unleased land located within the potential spacing unit is controlled by a single landowner, Landowner X. Landowner X has neither the capital nor the expertise to extract natural gas from beneath his own property, but refuses to give up his working interest in his share of the natural gas underlying the proposed spacing unit to Operator Co. to develop in exchange for a mere royalty interest. Moreover, due to the state's well spacing requirements, Landowner X would be incapable of obtaining a permit to conduct his own drilling operation. His refusal to cooperate with Operator Co. also precludes Operator Co. from obtaining the required permit. For this reason, any well spacing law must be accompanied by a compulsory pooling law.

Thus, upon application by Operator Co., the state exercises its police power to force pool Landowner X's interest with the other tract owners' interests in the spacing unit. However, since the state cannot take private property without just compensation, it may not be able to require Landowner X to accept a mere royalty interest as a result of the pooling order. Therefore, it must allow Landowner X to retain a working interest in his *pro rata* share of the gas produced from the well drilled on the spacing unit.

However, the reason that it was beneficial for the other landowners to voluntarily lease their interests to Operator Co. for a mere one-eighth (1/8) interest is twofold: ***56** (1) the small tract owners would have otherwise been incapable of producing the natural gas, and (2) there is no guarantee that expending the resources to drill a well would even produce natural gas. The risk of drilling a dry well is ever-present. However, by leasing their interests to Operator Co., the small tract owners receive a guaranteed return in the form of the bonus and delay rental payment along with the risk-free opportunity to further profit from the exploits of Operator Co. if it successfully produces gas from the spacing unit. If Operator Co. drills a dry well, the lessors are no worse off than if no well had been drilled at all (except for possible impact to the surface estate). Operator Co. carries the risk of drilling a dry well because it stands to benefit the most from drilling a productive well.

Landowner X, on the other hand, has taken on no risk, given up no interest in his share of gas in the common pool, and after being force pooled would stand to benefit greatly from a productive well. Even if his share of the costs associated with drilling a productive well were taken from his share of production from the well, he remains in the best position amongst all of the players since at no point did he put up any of his own assets against the risk of drilling a dry well. He finds himself in this superb position for doing nothing more than refusing to cooperate. Were this scenario to result from forced pooling provisions, there would be no incentive for landowners to enter into voluntary pooling agreements or lease agreements of any kind. A shrewd investor-landowner would in fact not lease, but simply wait to be forced pooled and reap the risk-free benefits of production. Therefore, many states have taken steps to impose the costs associated with the risk of drilling a dry well against the working interests of non-consenting landowners.

Generally, compulsory pooling statutes take one of four approaches to address the problem of the non-consenting or non-participating landowner: (1) give the non-participating tract owner a "free-ride," (2) impose a risk-penalty on the non-participating tract owner, (3) provide the non-participating tract owner with options, or (4) allow the authorized administrative agency to determine what to do with the non-participating owner's interest.

Compulsory pooling statutes in six states impose all of the risk associated with drilling a dry well on the operator, essentially giving the non-consenting owner a "free ride."[67] This approach condones the foregoing hypothetical scenario. The "free-ride" approach would allow Landowner X to reap all of the benefits of a productive well without taking on any risk. He would be entitled to a full *pro rata* working interest share of production from Operator Co.'s well. Operator Co. would carry all of the risk of drilling a dry or marginally productive well, recovering only Landowner X's share of actual costs of production, and only if the well is productive. Since the "free-ride" approach provides no incentive to enter into voluntary pooling agreements, it has largely fallen out of favor. Five states that had utilized this approach, at least as recently as 1986, have since amended their pooling provisions to impose a risk penalty on non-consenting land owners that are carried by the well-operator.[68]

***57** Imposing a risk-penalty on a non-participating working interest owner is a method of avoiding the problem described in the above hypothetical. The risk-penalty acts as an incentive for a working interest owners to enter into a voluntary agreement with the proposed well operator rather than waiting for the government to intervene and force pool the spacing unit.

Ohio's forced pooling statute is a risk penalty statute. It states that a pooling order issued by the responsible agency must, *inter alia*, "[s]pecify the basis upon which each owner of a tract pooled by the order shall share all reasonable costs and expenses of drilling and producing if the owner elects to participate in the drilling and operation of the well."[69] Therefore, if Landowner X refuses to lease his working interest to Operator Co. for a mere royalty interest, he then has the opportunity to participate in the risk and cost of drilling as a working interest owner, and the manner in which he may elect to participate is determined by the agency chief. However, if Landowner X does not elect to participate in the risk and cost of drilling and operation of the well, he will be designated as a "nonparticipating owner on a limited or carried basis" and thereafter the effect of the pooling order on his working interest "is subject to terms and conditions determined by the [agency] chief to be just and reasonable."[70] Landowner X is not, however, liable for "actions or conditions" that result from the drilling or operation of the well.[71]

However, Operator Co. is entitled to the nonparticipating working interest owner's entire *pro rata* share of production from the drilling unit, minus the owner's share of the royalty interest, until the operator has recouped "the share of costs charged to that nonparticipating owner plus such additional percentage of the share of costs as the chief shall determine."[72] The "additional percentage" determined by the chief represents the risk-penalty imposed on Landowner X that compensates Operator Co. for taking on Landowner X's share of the risk involved in drilling a dry or marginally productive well and penalizes Landowner X for refusing to take on the portion of the risk related to his working interest. While Ohio gives the agency chief discretion in determining the extent of the risk-penalty to be imposed, it sets the upper limit of that discretion by capping the total amount that the operator may receive from the non-participating tract owner at "two hundred per cent of the share of costs charged to that nonparticipating owner."[73] By giving the agency chief discretion in determining the percentage of costs that will determine the risk penalty, the Ohio statute allows for an accurate assessment of the risk associated with drilling a particular well. Some wells are more likely to produce in paying quantities than others,[74] and the Ohio scheme allows the risk penalty imposed on a carried participant to reflect that reality. The other three states that are the focus of this article do not allow the responsible agency such flexibility, but rather fix the percentage of the risk penalty as a matter of law.

Some compulsory pooling statutes provide that a working interest owner who elects not to participate in the drilling and operation of the well be provided with ***58** enumerated options or with options that are established by the agency before his interest may be integrated with the interests of other owners in the drilling unit. Compulsory pooling statutes in Pennsylvania, New York, and West Virginia all utilize this option approach.

Pennsylvania's compulsory pooling statute provides that a working interest owner who elects not to participate in the risk and cost of the drilling and operation of a well may request that the commission's integration order provide "just and equitable alternatives whereby [the nonparticipating landowner] ... may elect to surrender his leasehold interest to the participating operators on some reasonable basis and for reasonable consideration."[75] The Pennsylvania statute also allows the nonparticipating owner to retain his working interest and "elect to participate in the drilling and operation, or operations, of the well on a limited or carried basis."[76] In our hypothetical, under Pennsylvania law if Landowner X elects to participate on a carried basis, Operator Co. is entitled to collect his share of production minus a one-eighth (1/8) royalty interest until the market value of Landowner X's share of the production equals double the share of such costs attributed to his interest.[77] Thus,

the risk-penalty imposed on the carried working interest owner is 200% of his *pro rata* share of the costs of drilling and operation of the well.

New York's compulsory pooling statute also provides a non-leasing owner with the opportunity to choose among three options when forced to pool.[78] Such owner may "elect to be integrated into the spacing unit as an integrated participating owner,, an integrated non-participating owner or an integrated royalty owner."[79] The statute defines a participating owner as "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."[80] An integrated non-participating owner is defined as "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" of 200% of his share of well costs.[81] An integrated royalty owner is one who elects to "receive a royalty equal to the lowest royalty in an existing lease in the spacing unit, but no less than one-eighth," and who has no obligation to pay any costs associated with the operation of the well and is insulated from liabilities arising out of operation of the well.[82] If a nonparticipating owner fails to make an election within the prescribed time period after receiving notice of the integration hearing, he becomes as integrated as a royalty owner.[83]

The West Virginia compulsory pooling statute effectively provides the same options as the New York statute, but imposes a smaller risk penalty on a working interest owner who participates on a carried basis. It provides that the owner of a working interest who does not elect to participate in the risk and cost of the drilling ***59** of a deep well may elect either to surrender such interest or a portion thereof to the participating owners on a reasonable basis and for a reasonable consideration, or to participate in the drilling on a limited or carried basis.[84] If the nonparticipating owner elects the second option, the operator is entitled to that owner's share of production less a one-eighth (1/8) royalty interest until the market value of that share amounts to double the owner's portion of the drilling costs (a 200% risk penalty).

Generally, a pooling order must contain the costs associated with the drilling and operation of a well. Determining the costs associated with the drilling and operation of a well is a vital aspect of any compulsory pooling scheme. The compulsory pooling statutes in Ohio, Pennsylvania, and West Virginia simply provide that if there is a dispute between the parries regarding the costs associated with the drilling and operation of a well, the responsible agency will determine such costs.[85] None of these three statutes are accompanied by regulations that enumerate the aspects of drilling and operation of a well that should be considered in determining the costs attributable to a participating owner's share of production or to assessing a risk penalty on a carried participant. Therefore, it appears that these agencies have broad discretion in determining such costs if a dispute arises between the parties.

New York's compulsory pooling statute provides a laundry list of activities that the operator is entitled to conduct on behalf of an owner for which the owner will be responsible for his share of the costs related thereto.[86] A land owner may object to the inclusion or calculation of costs in an order proposed by the operator at the integration hearing, and the responsible agency will schedule a hearing to resolve the dispute.[87]

COMPULSORY POOLING, HORIZONTAL DRILLING, AND SUBSURFACE TRESPASS

Horizontal drilling presents unique issues related to compulsory pooling. One major issue that arises from horizontal drilling and compulsory pooling is whether a pooling order allows horizontal wells to physically pass through the subsurface of unleased land.

Consider a hypothetical scenario where a drilling company, Operator Co., has obtained leases to the mineral rights underlying Blackacre and Whiteacre. Landowner X owns Greyacre, which is located between Blackacre and Whiteacre. Landowner X refuses to lease Greyacre's mineral rights to Operator Co. Therefore, Operator Co. applied to the state for a force pooling order that would include Greyacre, and the state issued the permit. Operator Co. then proceeds to drill a horizontal well that physically traverses the subsurface of all three tracts of land. Landowner X realizes ***60** that a portion of the horizontal well physically traverses the subsurface of Greyacre and brings an action for common law subsurface trespass against Operator Co.

Under a typical compulsory pooling statute, a well operator may not drill a well into the surface of an unleased landowner without that landowner's consent.[88] However, the typical compulsory pooling statute only contemplates vertical drilling operations. A vertical well only disturbs the subsurface of the land on which the surface operations take place. The rest of the

tracts making up the pooled unit merely have the oil or gas underlying the tract, which is part of the common source of supply, drained from the subsurface. Otherwise, there is no physical disturbance to the subsurface of any of these pooled tracts of land. A horizontal well, on the other hand, is likely to physically traverse the subsurface of multiple tracts of land within the pooled unit.

The Supreme Court of North Dakota addressed this issue in *Continental Resources, Inc.* v. *Farrar Oil Co.* during the relatively early years of horizontal drilling technology.[87] The court defined a subsurface trespass as "[t]he bottoming of a well on the land of another without his consent."[88] It went on to state, "Subsurface trespass results from the drilling of a 'slant' or directional well, which may be intentional or inadvertent. Since subsurface trespass is as wrongful as surface trespass, the same liability attaches."[89] This rule is a clarification of the rule of capture. However, the court held that the state, through its police powers, has the authority to issue spacing and pooling orders that supersede the law of trespass.[90]

Applied to the hypothetical, Landowner X would be able to bring an action for subsurface trespass under the pure rule of capture. However, compulsory pooling laws alter the rule of capture. Therefore, when the state issues a pooling order to Operator Co. that includes Landowner X's tract, the order supersedes the law of subsurface trespass and precludes Landowner X from maintaining an action for trespass against Operator Co.

UNITIZATION SCHEMES IN THE MARCELLUS STATES

New York, Ohio, Pennsylvania, and West Virginia all have statutes that address unitization in some form. The New York and Ohio statutes are both applicable to the Marcellus Shale and provide the applicable state agency with substantial control over the compulsory unitization scheme. The Pennsylvania and West Virginia statutes are not applicable to wells drilled into the Marcellus Shale, and provide the applicable state agency with little to no control over the unitization scheme.

New York's compulsory unitization provisions are the latter portion of the same statutory section as its compulsory pooling provisions.[91] The unitization process begins when either the department or any interested party calls for a hearing "to consider the need for the operation as a unit as an entire pool or part thereof."[92] If, after the hearing, the department determines that unit operation of the pool in ***61** question is "reasonably necessary to increase substantially the ultimate recovery of oil and gas" in a cost effective manner, it must make such an order "upon terms and conditions that are just and reasonable."[93] The order must contain: (1) a description of the area to be unitized (the "unit area"), (2) a "statement of the nature of the operations contemplated," (3) an allocation of gas produced from the unit area that is "saved," meaning that it is not "unavoidably lost," nor is it "used in the conduct of operations," to each separate tract owner encompassed by the unit area, (4) the manner in which land owners investing in the unit operation will be compensated, (5) the manner in which the "expenses of unit operations" will be charged to separate tract owners, (6) the manner in which owners who cannot afford an upfront investment in the unit operation will be carried by other owners, (7) a "provision for the supervision and conduct of the unit operations," wherein each interested person has a voted weighted in proportion to the percentage of expenses of unit operation chargeable to that individual, (8) the time of commencement, and the manner and circumstances under which unit operations shall terminate, and (9) other appropriate provisions directed toward the "carrying on of unit operations, and for the protection and adjustment of correlative rights."[94]

A unitization order in New York does not become effective unless persons who will pay at least 60% of the cost of unit operations under the order and 60% of the royalty interest owners within the unit area approve the plan for unit operations.[95] An order may be amended in the same manner that it is initially issued, and will not require the consent of royalty owners so long as their interests remain unaffected.[96] Unanimous consent is required if the amendment changes the allocation of gas produced from the unit area.[97] The department may not issue an order that abrogates contracts or prior orders affecting the rights of interested parties.[98]

Ohio's statutory provisions for compulsory unitization are almost identical to those in the New York statute. One difference is that in Ohio, only owners of at least 65% of the land overlying the pool, along with the applicable state agency, may apply for a unitization hearing;[99] rather than "any interested person," as provided for in the New York statute. The only other significant difference is that an order must be approved by owners that will be required to pay at least 65% of the cost of unit production and by the royalty or fee owners of at least 65% of the acreage within the unit area.[100]

West Virginia's compulsory unitization scheme is an indivisible part of its compulsory pooling process. As described above,

once a discovery well penetrates a pool of gas, the operator of that well or any operator of lands "directly and immediately affected by the drilling" of the well may file an application with the state agency to establish drilling units over the entire pool, not just a single drilling unit.[95] However, filing this application is merely discretionary.[96] If the agency decides that it ***62** should establish drilling units over the pool, those units must typically be of "approximately uniform size and shape."[97] When determining whether to establish drilling units over a pool, the agency must consider: (1) the "surface topography and property lines" of lands overlying the pool, (2) any existing or proposed well spacing plan for the pool, (3) the depth of production, (4) the "nature and character of the producing formation," and whether it is producing gas, oil, or both, (5) the "maximum area that may be drained efficiently and economically by one deep well," and (6) any other data of "probative value" to determine the proper dimensions of drilling units overlying the pool.[98] The order establishing drilling units must cover "all lands determined or believed to be underlaid by such pool," and the agency may amend its order if it subsequently determines that certain lands should be included in or excluded from the order.[99]

Pennsylvania does not have a statute that provides for compulsory unitization. It does, however, have a statute that insulates voluntary agreements between "lessees or other owners of oil and gas rights" entered into for the purpose of "bringing about the unitized development or operation of such properties" from challenges based on Pennsylvania statutes prohibiting agreements "in restraint of trade or commerce."[100]

COMPULSORY POOLING AND UNITIZATION, THE PENNSYLVANIA CONSTITUTION--*KELO* v. *CITY OF NEW LONDON*, AND THE PROPERTY RIGHTS PROTECTION ACT

Some barriers may exist to enforcing compulsory pooling and unitization legislation in Pennsylvania if it is not drafted carefully. Compulsory pooling and unitization laws effectively grant a private power of eminent domain; the state exercises its police power to take an interest in private property for private use. On its face, such action appears to violate the takings clauses of both the federal and the Pennsylvania Constitution. Nonetheless, state courts have uniformly upheld the constitutionality of these types of laws.[101]

The Pennsylvania Supreme Court has relied in part on Article I, Section 27 of the Pennsylvania Constitution as authority for government regulation in deciding whether such regulation effectuates an unconstitutional taking. This constitutional amendment, adopted by the Pennsylvania General Assembly and ratified by Pennsylvania voters in 1971 states:

> The people have a right to clean air, pure water, and the preservation of the natural, scenic, historic and aesthetic values of the environment Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all people.[102]

In *United Artists Theater Circuit, Inc.* v. *City of Philadelphia*, the Court reversed itself in a case regarding the City of Philadelphia's enactment of an historic preservation ordinance that would have restricted a motion picture theater owner's ability to ***63** alter both the interior and exterior of the historic theater.[103] The Court initially held that the ordinance constituted a regulatory taking on the grounds that the Pennsylvania Constitution may provide greater protection for the rights of its citizens than the minimum levels established by the federal constitution.[104] It distinguished the case from the U.S. Supreme Court's *Penn Central*[105] analysis on the grounds that, under its own constitution, Pennsylvania had never recognized mere "aesthetic reasons or the stabilization of economic values" as valid exercises of the police power.[106]

Prior to granting an appeal to the City of Philadelphia on the case, the Supreme Court decided *Commonwealth* v. *Edmunds*, in which Justice Cappy, writing for the majority, developed a four-part framework to be applied when a court decides whether the Pennsylvania Constitution provides broader protection for the rights of its citizens than the minimum standard set by the U.S. Constitution.[107] Litigants asserting greater rights under the Pennsylvania Constitution must brief and analyze at least the following factors: (1) the text of the Pennsylvania constitutional provision, (2) the history of the provision, including Pennsylvania case law, (3) related case law from other states, and (4) *policy considerations*, including unique issues of state and local concern, and applicability within Pennsylvania jurisprudence.[108]

A mere nine months after its decision in *Edmunds*, the Supreme Court reversed its earlier decision in *United Artists*, in part finding that Article I, Section 27 "reflects a state policy encouraging the preservation of historic and aesthetic resources."[109] The Court concluded that "the designation of a privately owned building as historic without the consent of the owner is not a

taking under the constitution of this Commonwealth."[118]

The fourth prong of the *Edmunds* analysis would provide an even stronger argument that Article I, Section 27 acts as authority for compulsory pooling and unitization legislation against a claim that such legislation is the equivalent of an unconstitutional taking under the Pennsylvania Constitution than in *United Artists*. In the context of natural gas drilling in the Marcellus Shale, not only does Article I, Section 27 declare an explicit state policy of conservation of natural resources and establish the right to, *inter alia*, clean water, but the sheer volume of natural gas underlying the lands of the Commonwealth and the widespread drilling taking place to produce it are "unique issues of state and local concern."

However, a series of developments subsequent to the Supreme Court's decision in *United Artists* pose further problems for the validity of potential compulsory pooling and unitization legislation. In *Kelo* v. *City of New London*,[119] the U.S. Supreme Court upheld the constitutionality of the condemnation of private property (blighted neighborhood) that was then conveyed to another private owner for the stated purpose of "economic development" within the confines of a city's integrated development plan. The Court justified its ruling by asserting that the economic development "satisf[ies] ***64**] the public use requirement of the Fifth Amendment" if "future use by the public" is the purpose of the taking.[120] It also stated that economic development "will often benefit individual private parties,"[121] but that "[t]he public end may be as well or better served through an agency of private enterprise than through a department of government."[122]

The Court, however, qualified the effect of its decision. It added a statement of particular relevance to subsequent events in Pennsylvania. In the final paragraph of the majority opinion, the Court stated:

> We emphasize that nothing in our opinion precludes any State from placing further restrictions on its exercise of the takings power. Indeed, many States already impose "public use" requirements that are stricter than the federal baseline. Some of these requirements have been established as a matter of state constitutional law, while others are expressed in state eminent domain statutes that carefully limit the grounds upon which takings may be exercised.[123]

In response to this decision, the Pennsylvania General Assembly passed the Property Rights Protection Act (PRPA) in 2006.[124] The statute prohibits "the exercise by any condemnor of the power of eminent domain to take private property in order to use it for private enterprise."[125] Section 204(b)(2) provides exceptions to the general rule, where the taken property is "transferred or leased to: (i) [a] public utility or railroad as defined in 66 Pa.C.S. §102 (relating to definitions)., (ii) [a] common carrier, (iii) [a] private enterprise that occupies an incidental area within a public project, such as retail space, office space, restaurant and food service facility or similar incidental area." Pursuant to 66 P.S. §102, the term "public utility does not in-clude" [a]ny producer of natural gas not engaged in distributing such gas directly to the public for compensation/Therefore, most applications of any future compulsory pooling and unitization legislation in Pennsylvania would be subject to the restrictions imposed by the PRPA.

The General Assembly must address the PRPA when it enacts compulsory pooling and unitization legislation. It need not completely include private natural gas producers in the definition of "public utilities," which are exempt from the Act. It must only amend the Act to the extent necessary to carve out an exemption for the specific provisions of compulsory pooling legislation that would otherwise be inconsistent with the PRPA.

Generally, compulsory pooling and unitization legislation should expressly state its purpose to implement Article I, Section 27. Such a stated purpose will assist courts interpreting the statute and provide constitutional authority for agency decisions under the statute if those decisions are challenged on other constitutional grounds, such as a takings claim.[126] If it takes the form of an amendment to the Oil and Gas Act, that purpose will attach to the new provisions since the Oil and Gas Act expresses that purpose in its existing form.[127]

***65** Moreover, to alleviate the concerns of landowners that they will be forced to lease their land to drilling companies, compulsory pooling legislation can be drafted to require that a substantial majority of land within a proposed pooled unit be voluntarily leased before the state will issue a pooling order. It can also, if necessary, require that drilling companies make a "good faith effort" to enter into voluntary pooling agreements with landowners before their interests can be forced pooled.[128] Finally, the statute can provide that no surface operations may occur on a tract pooled by an order absent the consent of the owner of that tract.[129]

CONCLUSION

Adopting a compulsory pooling and unitization scheme applicable to the Marcellus Shale is not currently at the forefront of Pennsylvania's legislative agenda. Yet, compulsory pooling and unitization represents an opportunity for the General Assembly to effectively provide well operators with the ability to efficiently produce natural gas from a common source of supply absent voluntary agreements with all affected landowners while protecting the correlative rights of all landowners.

Effective compulsory pooling legislation should allow for predictable outcomes resulting from pooling orders. Therefore, it should limit agency discretion by requiring the responsible agency to issue a pooling order if all statutory application requirements are met[129] It should also enumerate a list of activities that the well operator is entitled to conduct on behalf of an unleased, working interest owner for which the owner will be responsible for paying his share of the costs related thereto, as New York has done.[131]

Pennsylvania's compulsory pooling statute must also address the problem of the non-consenting, non-participating landowner and ensure that a well operator is compensated for the risk and cost of drilling. Whether the legislature adopts a pure risk-penalty approach or an option approach to determine the costs owed by the non-participating working interest owner to the well operator, it should look to Ohio's approach, which allows for an assessment of the actual risk involved in a given drilling operation, rather than imposing a risk-penalty that is set as a matter of law.[132]

Any compulsory pooling legislation in Pennsylvania must amend the Property Rights Protection Act to exempt compulsory pooling from its prohibition on the exercise of "eminent domain to take private property in order to use it for private enterprise."[133] It should also expressly state its purpose to implement Article I, Section 27 of the Pennsylvania Constitution. Such a stated purpose will assist courts interpreting the statute and provide constitutional authority for agency decisions under the statute if those decisions are challenged on other constitutional grounds, such as a takings claim.[134]

***66** Finally, Pennsylvania's compulsory pooling law must necessarily address the concerns of landowners who fear that they will be forced to lease their land against their will. To achieve this objective, the law may require that a substantial majority of land within a proposed pooled unit be voluntarily leased before the state will issue a pooling order. It can also, if necessary, require that drilling companies make a "good faith effort" to enter into voluntary pooling agreements with landowners before their interests can be forced pooled.[135] Finally, the statute can provide that no surface operations may occur on a tract pooled by an order absent the consent of the owner of that tract.[136]

While compulsory pooling and unitization has struggled to gain traction in the Pennsylvania General Assembly, it is important that proponents of enacting such a scheme into law continue to inform legislators and their constituents on the benefits that effective pooling legislation could provide to all involved parties. Pooling opponents deride the concept with conjectural arguments about encroaching on private property rights. However, compulsory pooling has consistently proven to be the best mechanism for protecting the interests of all landowners and the energy industry alike, as well as a means of addressing certain environmental concerns related to oil and gas drilling. By revealing the successes of other states to the citizens of Pennsylvania and their representatives, pooling advocates can succeed in bringing the benefits of compulsory pooling to the Commonwealth.

Footnotes

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3 Thomas A. Mitchell, The Future of Oil and Gas Conservation Jurisprudence, 49 Washburn L. J. 379, 380 (2010).

4 *Id.*

5 *Id.* at 385.

6 U.S. Energy Information Administration. *Pennsylvania State Energy Profile: Analysis*. http://www.eia.doe.gov/state/state-energy-profiles-analysis.cfm?sid=PA (last visited Feb. 26, 2011).

7 *Id.*

8 Timothy Condisine et al., An Emerging Giant: Prospects and Economic Impacts of Developing the Marcellus Shale Natural Gas Play, Pennsylvania State University Department of Energy and Mineral Engineering, http://www.aHeghenyconference.org/PDFs/PELMisc/PSUSrudyMarcellusShale072409.pdf (2009).

9 *Id.*

10 Bruce M. Kramer & Patrick H. Martin, The Law of Pooling and Unitization §1.02 (3d 2008).

11 Robert E. Hardwicke, The Rule of Capture and Its Implications as Applied to Oil and Gas, 13 Tex. L. Rev. 391, 393 (1935).

12 *Westmoreland & Cambria Natural Gas Co.* v. *DeWitt*, 130 Pa. 235, 249-50 (1889).

13 *Barnard* v. *Monongahela Natural Gas. Co.*, 216 Pa. 362 (1907).

14 *Id.*

15 58 Pa. Consol. Statutes Oil & Gas. §§ 401-419 (West 2010).

16 58 P.S. § 403 (b)(1).

17 W. Va. Code § 22C-9-2(a)(12) (2010), W. Va. Code § 22C-9-7.

18 *State ex rel. Blue Eagle Land, LLC* v. *W.Va. Oil & Gas Conserv. Comm.*, 222 W. Va. 342, 664 S.E.2d 683 (2008).

19 W.Va. Code § 22-9-2.

20 *Id.*

21 *Blue Eagle, LLC* v. *W. VA. Oil & Gas Conserv. Comm.*, Civil Action No. 08-CAP-171, McDowell Co. Cir. Ct. (Sept. 10, 2010).

22 58 P.S. § 501.01 *et seq.* (1984).

23 58 P.S. § 507.

24 58 P.S. § 503(b)(1).

25 Thomas A. Mitchell, The Future of Oil and Gas Jurisprudence: Past as Prologue, 49 Washburn L.J. 379, 406 (2010).

26 *Id.*

27 58 P.S. § 601.101-601.607.

28 *Id.*

29 *Id.*

30 58 P.S. § 601.202.

31 58 P.S. § 601.201.

32 Bruce M. Kramer *supra* note 8 at 1.02 (internal citation omitted).

33 It should be noted that certain pooling statutes refer to a reservoir of oil or gas as a "pool." So, in the parlance of oil and gas jurisprudence, the term "pool" can refer to either a pool of interests in mineral rights or a physical pool of oil or gas.

34 Kramer, *supra* note 8, at §17.02[4].

35 D. Robert Davidson, Esq., "Negotiating Oil and Gas Leases on Pennsylvania Farmland," PENNSYLVANIA DEPARTMENT OF ACRICULTURE 1, 13 (July 2008), http://agricultrure.state.pa.us/portal/server.pt/gateway/PTARGS_6_2_75292_10297_0_43/AgWebsite/Files/PublicaHons/Negotiating%20Oil%C20and%C20Gas%C20øn%C20Pennsylvania%C20Farmland%2-10.pdf-.

36 *Id.* at 11.

37 *Id.* at 13.

38 *Id.* at 11.

39 *Id.*

40 *Id.* at 14.

41 58 P.S. § 33.

42 Davidson, *supra* note 33, at 15.

43 *Id.*

44 *See*N.Y. Envtl. Conserv. Law § 23-0501 (McKinney 2010) [hereinafter "N.Y. ECL"].

45 N.Y. ECL § 23-0501(2).

46 The Department of Natural Resources Division of Oil and Gas is the regulatory authority for Ohio's forced pooling law.

47 N.Y. ECL § 23-0501 (2)(b).

48 Ohio Rev. Code Ch. 1509 (Baldwin 2010).

49 Ohio R.C. §1509.24.

50 ORC §1509.27.

51 N.Y. ECL §23-0501(2)(b).

52 The Department of Environmental Conservation is the regulatory authority for New York's forced pooling law.

53 N.Y. ECL §23-0901(2), Ohio Rev. Code §1509.27.

54 58 P.S. §408, W.Va. Code §22C-9-7.

55 The Oil and Gas Conservation Commission is the regulatory authority for West Virginia's forced pooling law. The Department of Environmental Protection Office of Oil and Gas Management is the regulatory authority for Pennsylvania's forced pooling law.

56 58 P.S. §408(a) (Pooling order encompassed in order establishing spacing units); W.Va. Code §22C-9-7(b)(1)(Pooling order issued separately and upon separate application after order establishing drilling units has been entered).

57 *See* discussion of distinction between statutory deep and shallow wells infra.

58 W.Va. Code §22-6-6.

59 W.Va. Code R. §39-1-4.2 (2010).

60 § 22C-9-7 (a)(1).

61 W.Va. Code § 22C-9-7(4)&(7).

62 W.VA. Code R. §39-1-4.4; W.Va. Code §22C-9-7(b)(1).

63 W.Va. Code § 22C-9-7(a)(3)&(7); W.Va. Code R. §39-1-4.2.

64 W.Va. Code § 22C-9-8.

65 N.Y. ECL § 25-0503(2).

66 N.Y. ECL § 25-0503(3) & §25-0301.

67 Alaska Stat. § 31.05.100(c) (West 2010); Ariz. Rev. Stat. Ann. §27-505(A) (West 2010); Ind. Code Ann. §14-37-9-3 (West 2010); Iowa Code Ann. §854A.8 (West 2010); Mo. Ann. Stat. §259.110 (Vernon 2010); N.C. Gen. Stat. §113-393 (West 2010).

68 Ala. Code §9-17-13 (2010); Fla. Stat. Ann. §377.27 (West 2010), §377.2411; Mont. Code Ann. §82-11-202(2) (West 2009); Nev. Rev. Stat. §522.060(4) (West 2009); N.D. Cent. Code §38-08-08 (West 2009).

69 Ohio R.C. §1509.27.

70 *Id.*

71 *Id.*

72 *Id.*

73 *Id.*

74 Bruce M. Kramer, Compulsory Pooling and Unitization: State Options in Dealing with Uncooperative Owners, 7 J. Energy L. & Pol'y 255 (1986).

75 58 P.S. § 408(c).

76 *Id.*

77 *Id.*

78 N.Y. ECL § 23-0901(3) (Amended in 2005 to provide options rather than taking a strict risk-penalty approach.)

79 *Id.*

80 *Id.*

81 *Id.*

82 *Id.*

83 *Id.*

84 W.Va. Code § 22C-9-7 (b)(5).

85 Ohio R.C. §1509.27, 58 P.S. § 408(c); W. Va. Code § 22C-9-7(b)(7).

86 N.Y. ECL §23-0901(3)(c)(1)(ii)(I) ("conducting title examination and curative work on the tracts included in the spacing unit; arranging for contract services or employees of the well operator, at the customary salaries, wages and benefits of such employees, to oversee the operation and maintenance of the well and the facilities in the production unit associated with the well; arranging for and maintaining required financial security for well bonds and insurance; discharging litigation, claims of third parties and disputing tax assessments; developing and implementing emergency responses and dealing with catastrophic events; and arranging for the storage, transporting and disposal of produced water, by-products or refuse associated with production and maintenance facilities")

87 N.Y. Envtl. Conserv. Law §23-0901(3)(d).

88 *See*Ohio R.C. § 1509.27(F).

89 559 N.W.2d 841 (N.D. 1997).

90 *Id.* at 844.

91 *Id.*

92 *Id.* at 846.

93 N.Y. ECL § 23-0901(4)-(12).

94 N.Y. ECL § 23-0901(4).

95 N.Y.ECL § 23-0901(5).

96 *Id.*

97 N.Y.ECL § 23-0901(6).

98 N.Y.ECL § 23-0901(7).

99 *Id.*

100 N.Y. ECL § 23-0901(11).

101 Ohio R.C. § 1509.28(A).

102 Ohio R.C. § 1509.28(B).

103 W.Va. Code § 22C-9-7(a)(1).

104 *Powers v. Union Drilling, Inc.*, 194 W. Va. 782 (1995).

105 W.Va. Code § 22C-9-7(a)(3)(F).

106 W.Va.Code § 22C-9-7(a)(3).

107 W.Va.Code § 22C-9-7(a)(7).

108 58 P.S. § 409.

109 *Patterson v. Stanolind Oil & Gas Co.*, 182 Okla. 155, 77 P.2d 83 (1938), *SuperiorOilCo.v. Foote*, 214Miss. 857, 59So.2d85 (1952).

110 Pa. Const. art. I, §27.

111 535 Pa. 370, 635 A.2d 612 (1993).

112 *Id.*

113 Regulatory takings challenges are governed by the standards established in *Penn Central Transp. Co. v. New York City*, 438 U.S.

104, 98 S.Ct. 2646, 57 L.Ed.2d 631 (1978).

114 *Id.* at 612.

115 526 Pa. 374, 586 A.2d 887 (1991).

116 *Id.* at 390-91, 895 (emphasis added).

117 United Artists, 635 A.2d at 620.

118 *Id.*

119 *Kelo* v. *City of New London*, 545 U.S. 469, 125 S. Ct. 469, 162 L.Ed. 2d 439 (2005).

120 *Id.* at 477.

121 *Id.* at 487.

122 *Id.* at 486 (*quoting Berman* v. *Parker*, 348 U.S. 26, 75 S.Ct. 98, 99 L.Ed. 27 (1954).

123 *Id.* at 489.

124 Pa. Consol. Stat. Ann. Eminent Domain, 26 §§201-207 (West 2006).

125 26 Pa. C.S.A. § 204(a).

126 *See* John C. Dernbach, Taking the Constitution Seriously When it Protects the Environment, 104 Dick.L.Rev. 97, 119, 157-58 (1999).

127 58 P.S. § 601.102(4).

128 *See*Tex. Nat. Res. Code §102.013.

129 *See*Ohio R.C. §1509.27(F).

130 Pennsylvania and West Virginia's current pooling statutes, which are inapplicable to the Marcellus Shale, contain this type of non-discretionary provision.

131 N.Y. ECL. §23-0901(3)(c)(1)(ii)(I).

[132] Ohio R.C. §1509.27.

[133] 26 P.S. § 204(a).

[134] *See* Dernbach, *supra* note 123, at 119, 157-58.

[135] *See* Tex. Nat. Res. Code §102.013.

[136] *See* Ohio R.C. § 1509.27(F).

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