SURFACE USE IN THE AGE OF HORIZONTAL DRILLING: WILL HORIZONTAL WELLS BE CONSIDERED A "REASONABLY NECESSARY" USE OF THE SURFACE?

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ABSTRACT

Implicit in the development and production of oil and gas is the need to utilize the surface of the land. When the mineral estate is severed from the surface estate, conflict between the surface owner and mineral owner is inevitable. This is even more so with the advent of horizontal drilling techniques, as the traditional legal framework, which was based on the notion that wells would be drilled vertically, is insufficient to address legal issues concerning surface use in the age of horizontal drilling. In analyzing whether horizontal wells are a reasonably necessary use of the surface, this Article provides a review of various case law and pertinent statutory authority addressing the use of the surface to produce underlying minerals. After examining modern trends in statutory and regulatory laws addressing the use of horizontal drilling technology, this Article concludes by providing recommendations for a statutory framework that addresses both the need to effectively develop minerals as new technologies emerge, as well as appropriate compensation to surface owners as a result of any increased burden resulting from the use of new drilling technologies.

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I. INTRODUCTION

Conflicts between mineral owners and surface owners are inevitable as natural gas extraction necessarily involves some disturbance of the surface estate. The extent of surface disturbance is dependent upon several factors, including the target formation of the well and the technologies used to extract the subsurface minerals.[1] While mineral owners often seek broad use of the surface estate, surface owners seek to limit the mineral owners' use of the surface estate. The conflict between mineral owners and surface owners has only escalated in recent years as a result of the increased prevalence of horizontal drilling in the oil and gas industry.

As of March 28, 2013, 1748 active drilling rigs existed in the United States.[2] Of the 1748 rigs, 1099 (63%) were drilling horizontal wells.[3] A study commissioned by the United States Chamber of Commerce's Twenty-First Century Energy Institute indicates the extraction of "unconventional" shale oil and gas through horizontal hydraulic fracturing – or fracking – has

1. *See* ROSS H. PIFER, THE MARCELLUS SHALE NATURAL GAS RUSH: THE IMPACT OF DRILLING ON SURFACE OWNER RIGHTS 1-2 (2011), *available at* http://law.psu.edu/_file/aglaw/Natural_Gas/The_Marcellus_Shale_Natural_Gas_Rush-The_Impact_of_Drilling_on_Surface_Owner_Rights.pdf.

2. *North America Rotary Rig Count*, BAKER HUGHES, http://investor.shareholder.com/bhi/rig_counts/rc_index.cfm?showpage=na (last visited Mar. 28, 2013).

3. *Id.*

meant a job boom even in states without shale deposits, with 1.7 million jobs already created and a total of 3.5 million projected by 2035.[4]

In the absence of legislation or regulation regarding the use of the surface to locate a horizontal well pad, courts are forced to determine whether a mineral owner's proposed use of a surface tract is generally reasonable and necessary for the development of the minerals.[5] This requires the courts to balance the equities of the mineral owner's dominant right to develop his minerals against the surface owner's use of his surface.[6] Because this often involves a case-by-case analysis, the outcome is often unpredictable.

In horizontal drilling, there is a need to drill multiple wells from a single surface location[7] to achieve the avoidance of stranded oil and gas. This results in substantially larger well pads than conventional vertical well pads.[8] Thus, the question looms as to whether a surface owner could validly argue that a horizontal well is not a reasonably necessary use of the surface.

In order to answer the above mentioned questions regarding reasonably necessary use of the surface, this Article first provides a review of various case law discussing surface impacts when producing the underlying minerals. After examining the relevant case law, Part III of this Article describes the pertinent statutory authority impacting surface use. Part IV, building on the earlier statutory analysis provided, addresses modern trends in statutory and regulatory laws focusing on pooling and surface use. Examining the common law, Part V reviews reasonably necessary surface use in states without clear statutory or regulatory law. Based on the various case law, common law, and statutory and regulatory schemes addressing horizontal drilling, Part VI provides recommendations for a statutory framework that addresses both the need to effectively develop minerals as new technologies emerge, as well as appropriate compensation to surface owners as a result of any increased burden.

4. IHS, AMERICA'S NEW ENERGY FUTURE: THE UNCONVENTIONAL OIL AND GAS REVOLUTION AND THE US ECONOMY, at v (2012), *available at* http://www.energyxxi.org/sites/default/files/Americas _New_Energy_Future_State_Main_Dec12.pdf.

5. *See, e.g.*, Haupt, Inc. v. Tarrant Cnty. Water Control & Improvement Dist. No. 1, 870 S.W.2d 350, 353 (Tex. Ct. App. 1994).

6. *Id.*

7. *See* W. VA. CODE ANN. § 22-6A-2(a)(2) (Supp. 2012).

8. *See* W. VA. CODE ANN. § 22-6A-3. The State of West Virginia, in recognition of this fact, defines a horizontal well as one which "disturbs three acres or more of surface . . . ." *Id.*

II. A REVIEW OF CASE LAW REGARDING THE USE OF THE SURFACE TO PRODUCE THE UNDERLYING MINERALS

When minerals are severed from the surface estate, and no express easement has been granted, the mineral owner has an implied right[9] in the nature of an easement to access his minerals.[10] Courts have long recognized that severed mineral rights lack value unless the mineral estate owner can enter upon and use a portion of the surface to access and develop the minerals.[11] The Texas Supreme Court, for example, noted a mineral estate would be "wholly worthless" if the mineral estate owner "could not enter upon the land in order to explore for and extract minerals."[12]

Courts have analyzed the scope of the implied easement of surface use under two approaches. Under the "unidimensional"[13] or "reasonably necessary" approach, courts focus on the necessity and convenience of the mineral owner to determine whether the mineral owner's use of the surface estate exceeds the scope of the implied easement of surface use.[14] Under the "multidimensional"[15] or "due regard" approach, courts weigh the benefits and injuries to both the surface and mineral owner to determine whether a particular use of the surface is consistent with the implied easement of surface use.[16] Under the reasonably necessary approach, courts have recognized that the right to reasonable use of the surface "is absolutely

9. The right is implied in the absence of an express right to burden the surface estate to extract minerals. *See* PATRICK H. MARTIN & BRUCE M. KRAMER, WILLIAMS & MEYERS OIL AND GAS LAW § 218, at 2-29 (Abr. 2d ed. 2004) ("The instrument creating the mineral, royalty or leasehold interest may . . . be completely silent concerning surface easements. In such case, it has been held that such surface easements are implied as will permit the lessee or mineral owner to enjoy the interest conveyed.").

10. Acker v. Guinn, 464 S.W.2d 348, 352 (Tex. 1971); *see also* Kartch v. EOG Res., Inc., 845 F. Supp. 2d 995, 1002 (D.N.D. 2012) ("Whether the express uses are set out or not, the mere granting of the lease creates and vests in the lessee the dominant estate in the surface of the land for the purposes of the lease; by implication it grants the lessee the use of the surface to the extent necessary to a full enjoyment of the grant.") (citation omitted).

11. *See, e.g.*, Greeley-Roethe LLC v. Anadarko E&P Co., No. 08-cv-00401-MSK-BNB, 2010 WL 1380365, at *5 (D. Colo. Mar. 31, 2010); Diamond Shamrock Corp. v. Phillips, 511 S.W.2d 160, 164 (Ark. 1974); Gerrity Oil & Gas Corp. v. Magness, 946 P.2d 913, 927 (Colo. 1997); Hunt Oil Co. v. Kerbaugh, 283 N.W.2d 131, 135 (N.D. 1979); WMYO Fuels, Inc. v. Edwards, 723 P.2d 1230, 1236-37 (Wyo. 1986).

12. Tarrant Cnty. Water Control & Improvement Dist. No. 1 v. Haupt, Inc., 854 S.W.2d 909, 911-12 (Tex. 1993); *see also* Harris v. Currie, 176 S.W.2d 302, 305 (Tex. 1943).

13. *See generally* Bruce M. Kramer, *Conflicts Between the Exploitation of Lignite and Oil and Gas: The Case for Reciprocal Accommodation*, 21 HOUS. L. REV. 49 (1984).

14. Bruce M. Kramer, *The Legal Framework for Analyzing Multiple Surface Use Issues*, 44 ROCKY MTN. MIN. L. FDN. J. 273, 299 (2007).

15. *See generally* Kramer, *supra* note 13.

16. *See* Kramer, *supra* note 14, at 299.

necessary to obtain the thing granted – the minerals under the land."[17] For this reason, a mineral owner has the right of reasonably necessary surface usage to explore and develop the mineral estate.[18] The Arkansas Supreme Court has provided a cogent statement of this basic rule, indicating:

> The general rule governing the right of the mineral owner is aptly stated in 10 Thompson on Real Property § 5561 (1940): "As against the surface owner, the owner of the minerals has a right, without any express words of grant for that purpose, to go upon the surface to drill wells to his underlying estate, and to occupy so much of the surface beyond the limits of his well or wells as may be necessary to operate his estate and to remove the product thereof. . . ."[19]

Although the mineral estate is generally the dominant estate, courts in some states recognize that the mineral owner's right to reasonable use of the surface is not unlimited as such right is often counter-balanced by a corresponding duty to give "due regard"[20] to the rights of the servient surface owner.[21] Pennsylvania courts have described this duty as follows: "while the owner of the mineral rights has unquestioned right to enter upon the property for the purpose of access and extracting his minerals, he nevertheless must exercise such rights with a recognition of surface rights and taking appropriate action to prevent unnecessary disturbance . . . ."[22] This concept of due regard, known as the accommodation doctrine,[23] was first articulated by the Texas Supreme Court in *Getty Oil Co. v. Jones*,[24] and

17. Comack v. Wil-Mc Corp., 661 P.2d 525, 526 (Okla. 1983) (citing Davon Drilling Co. v. Ginder, 467 P.2d 470 (Okla. 1970)).

18. *See, e.g.*, Ark. La. Gas Co. v. Wood, 403 S.W.2d 54, 55 (Ark. 1966); Squires v. Lafferty, 121 S.E. 90, 91 (W. Va. 1924) (holding that the owner of minerals underlying land possesses the right, incident to their ownership, to use the surface of the land in such manner and with such means as would be fairly necessary for the enjoyment of the mineral estate).

19. Diamond Shamrock Corp. v. Phillips, 511 S.W.2d 160, 163 (Ark. 1974). This view was later reaffirmed:

> The respective rights of mineral and surface owners are well settled. The owner of the minerals has an implied right to go upon the surface to drill wells to his underlying estate, and to occupy so much of the surface beyond the limits of his well as may be necessary to operate his estate and to remove its products.

Bonds v. Carter, 75 S.W.3d 192, 199 (Ark. 2002) (Hannah, J., concurring).

20. United States v. Minard Run Oil Co., No. 80-129 Erie, 1980 Dist. LEXIS 9570, at *19 (W.D. Pa. 1980).

21. *See* Getty Oil Co. v. Jones, 470 S.W.2d 618, 621-22 (Tex. 1971).

22. *Minard Run Oil Co.*, 1980 Dist. LEXIS 9570, at *13.

23. Several states have adopted the accommodation doctrine. *See, e.g.*, Hunt Oil Co. v. Kerbaugh, 283 N.W.2d 131, 136-35 (N.D. 1979); Amoco Prod. Co. v. Carter Farms Co., 703 P.2d 894, 896 (N.M. 1985); Mingo Oil Producers v. Kamp Cattle Co., 776 P.2d 736, 740-41 (Wyo. 1989).

24. 470 S.W.2d 618 (Tex. 1971).

balances the rights of the surface owner and the mineral owner in the use of the surface.[25] Applying the accommodation doctrine, the West Virginia Supreme Court of Appeals held that where the right to use the surface is implied, "it must be demonstrated not only that the right is reasonably necessary for the extraction of the mineral, but also that the right can be exercised without any substantial burden to the surface owner."[26]

Under the accommodation doctrine, the existence of an alternative is not sufficient to render the mineral owner's use of the land unreasonable. As the North Dakota Supreme Court explained, "[t]he reasonableness of the method and manner of using the dominant mineral estate may be measured by what are usual, customary and reasonable practices in the industry under like circumstances of time, place and servient estate uses."[27] Moreover, "[i]f there is but one means of surface use by which to produce the minerals, then the mineral owner has the right to pursue that use, regardless of surface damage."[28]

Conversely, a surface owner must respect a mineral owner's right to use the surface and cannot impose additional restrictions upon such use. For example, in *Belden & Blake Corp. v. Department of Conservation & Natural Resources*,[29] the Pennsylvania Supreme Court held the Pennsylvania Department of Conservation and Natural Resources could not unilaterally impose additional conditions upon the mineral owner's right to use the surface of a state park beyond those which are reasonable; such an imposition of additional conditions would shift the burden from the surface owner to the mineral owner to seek redress of surface rights.[30] Stating that "[a] subsurface owner's rights cannot be diminished because the surface comes to be owned by the government[,]" the court held the state had no authority to impose additional conditions without compensation.[31]

Similarly, the United States District Court for the Western District of Pennsylvania held that the United States Forest Service did not have the

25. *Getty Oil Co.*, 470 S.W.2d at 622.

26. Buffalo Mining Co. v. Martin, 267 S.E.2d 721, 725-26 (W. Va. 1980).

27. *Hunt Oil Co.*, 283 N.W.2d at 135-36 (quoting Getty Oil Co. v. Jones, 470 S.W.2d 618, 627-28 (Tex. 1971)).

28. Tarrant Cnty. Water Control & Improvement Dist. No. 1 v. Haupt, Inc., 854 S.W.2d 909, 911 (Tex. 1993).

29. 969 A.2d 528 (Pa. 2009). The court began its analysis by addressing the relationship between the mineral owner and the surface owner. In reaffirming *Chartiers Block Coal Co. v. Mellon*, 25 A. 597 (Pa. 1893), as the governing law on the issue, the court noted that "an owner of an underlying estate, such as Belden & Blake here, has the right to go upon the surface in order to reach the estate below, 'as might be necessary to operate his estate . . . .'" *Belden*, 969 A.2d at 532.

30. *Id.*

31. *Id.*

regulatory authority to subject drilling proposals for the Allegheny National Forest to extra scrutiny.[32] In holding the Service's authority to regulate private drilling activities inside the forest was limited, the Court held the Service could nevertheless prevent undue degradation of the surface estate through the longstanding cooperative agreement between the Forest Service and drillers, and by exercising its rights as a servient surface-estate holder under Pennsylvania law.[33]

Professor Kramer notes that "[w]hile several states are often listed as being in the accommodation [or multidimensional] camp what is remarkable about all of the decisions is the continued adherence to the unidimensional reasonably necessary approach.[34] Throughout the last century, courts have struggled with the application of the "reasonable use" and "reasonable accommodation" doctrines. Although the analysis employed by courts eventually evolved from the "reasonable use" approach toward the "reasonable accommodation" approach, the outcome remained largely unchanged – that is, in the absence of negligence or wrongful conduct on the part of the mineral owner, the mineral owner prevailed.

III. A REVIEW OF STATE REGULATION OF SURFACE USE VIA TRADITIONAL SURFACE USE STATUTES

As a result of the apparent failure of the courts to adequately address conflicts between mineral owners and surface owners through the common law application of the "reasonable use" and "reasonable accommodation" doctrines (which appear to often leave surface owners on the losing end of the analysis), state legislatures sought to regulate the competing interests by enacting surface use compensation statutes. Overriding the common law, under which mineral owners had no legal obligation to compensate surface owners for damages caused by drilling operations in the absence of negligence, surface use compensation statutes require mineral owners to pay for any damages incurred as a result of drilling operations. For example, Kentucky's surface statute requires that mineral owners give notice to surface owners at least ten days before drilling, and pay reasonable compensation for, among other things:

> damages to growing crops, trees, shrubs, fences, roads, structures, improvements, and livestock thereon caused by the drilling of a new well. The surface owner shall be entitled to reasonable

32. Minard Run Oil Co. v. U.S. Forest Serv., C.A. No. 09-125 Erie, 2009 WL 4937785, at *31 (W.D. Pa. Dec. 15, 2009).

33. *Id.*

34. Kramer, *supra* note 14, at 21.

> compensation from the operator for subsequent damages to growing crops, trees, shrubs, fences, roads, structures, improvements, and livestock caused by subsequent production operations of the operator thereon. The surface owner shall be entitled to reasonable compensation for all negligent acts of the operator that cause measurable damage to the productive capacity of the soil. In addition, the operator shall not utilize any more of the surface estate than is reasonably necessary for the exploration, production and development of the mineral estate.[35]

Several states have enacted similar surface use statutes. Indiana's surface use statute, for example, requires mineral owners to compensate surface owners for actual damages resulting from the mineral owner's activities on the surface owner's land.[36] The Illinois surface use statute provides that a surface owner:

> is entitled to reasonable compensation from the operator for damages as follows: (1) To growing crops, trees, shrubs, fences, roads, structures, improvements, personal property, and livestock thereon caused by the drilling of a new well. The surface owner shall also be entitled to reasonable compensation from the operator for subsequent damages. (2) To growing crops, trees, shrubs, fences, roads, structures, improvements, personal property, and livestock thereon. (3) For the loss of the value of a commercial crop corresponding to lands taken out of production because of the use thereof by the operator for roads and production equipment.[37]

Other states' surface use statutes provide surface owners with compensation for items such as damages to a pre-existing water supply, diminution in value of the surface, and cost of repair of personal property.[38] For example, West Virginia's surface use statute requires mineral owners to compensate surface owners for:

> (1) Lost income or expenses incurred as a result of being unable to dedicate land actually occupied by the driller's operation or to which access is prevented by such drilling operation to the uses to which it was dedicated prior to commencement of the activity for which a permit was obtained measured from the date the operator enters upon the land until the date reclamation is completed, (2) the market value of crops destroyed, damaged or prevented from

35. KY. REV. STAT. ANN. § 353.595(5) (Supp. 2012).
36. IND. CODE ANN. § 32-23-7-6(3) (Supp. 2012).
37. 765 ILL. COMP. STAT. 530/6(A) (2010).
38. *See* W. VA. CODE ANN. § 22-7-3 (2009).

> reaching market, (3) any damage to a water supply in use prior to the commencement of the permitted activity, (4) the cost of repair of personal property up to the value of replacement by personal property of like age, wear and quality, and (5) the diminution in value, if any, of the surface lands and other property after completion of the surface disturbance done pursuant to the activity for which the permit was issued determined according to the actual use made thereof by the surface owner immediately prior to the commencement of the permitted activity.[39]

Some surface use statutes, such as Montana's, provide surface owners with more protection.[40] Montana's surface use statute broadly makes mineral developers and operators "responsible for damages to real or personal property caused by oil and gas operations and production" and "responsible for all damages to real or personal property resulting from the lack of ordinary care." This approach is akin to a strict liability approach as the statute provides for compensation for any and all damages caused to the surface, not merely those damages caused by the mineral owners' negligent or otherwise wrongful conduct.[41]

IV. MODERN REGULATION VIA POOLING AND SURFACE USE STATUTES

The advent of new drilling technology has caused some states to question the adequacy of their traditional surface use statutes, which were historically created to address surface use issues stemming from the development of shallow, vertical wells. In acknowledging the need for a "reasonable and balanced approach" to regulating new drilling technologies, West Virginia Delegate Tim Manchin noted:

> This new drilling process has not been experienced before . . . and the regulatory scheme for traditional drilling methods is clearly insufficient to address the impacts to local communities, the environment, infrastructure and regulatory enforcement. The moving target of emerging technologies has caused a steep learning curve for regulators and lawmakers who have been trying to sort through this important issue.[42]

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39. *Id.* This provision does not apply to horizontal wells. *See* W. VA. CODE ANN. § 22-6A-16(a) (Supp. 2012).

40. MONT. CODE ANN. § 82-10-505.

41. *Id.*

42. Written Comments of Delegate Tim Manchin, House Chairman of the Joint Select Committee on Marcellus Shale to Senate Committee on Energy & Natural Resources; *see also* W. VA. CODE ANN. § 22-6A-2(a)(4) (Supp. 2012) ("Existing laws and regulations developed for

This general recognition among legislatures in oil producing states has resulted in the enactment of statutes and regulations expressly dealing specifically with horizontal wells. Specifically, many oil and gas producing states have adopted conservation legislation, giving state regulatory authorities the power to pool independently owned interests and establish drilling units to prevent waste and protect correlative rights.[43] The Ohio Legislature, for example, has declared that "it is an essential government function and public purpose of the state to promote the efficient utilization of energy, encourage the increased utilization of the state's indigenous energy resources . . . ."[44] The Ohio Supreme Court has similarly declared that "it is the public policy of the State of Ohio to encourage oil and gas production"[45] in addition to developing and producing energy sources in an "economically proficient manner."[46] The State of Colorado has similarly expressed its policy to encourage, by every appropriate means, the full development of the state's natural resources.[47] Likewise, the State of West Virginia has recognized that

> [t]he advent and advancement of new and existing technologies and drilling practices have created the opportunity for the efficient development of natural gas contained in underground shales and other geologic formations[.] . . . These practices have resulted in a new type and scale of natural gas development that utilize horizontal drilling techniques[.] . . .[48]

The State of North Dakota has expressed a similar intent:

> It is hereby declared to be in the public interest to foster, encourage, and promote the development, production, and utilization of all natural resources of coal, oil, gas, and subsurface minerals in a manner as will prevent waste and allow a greater ultimate recovery of the natural resources, and to protect the rights of all owners so that the greatest possible economic recovery of natural resources be obtained in the state, to the end that landowners, royalty owners, producers, and the general public

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conventional oil and gas operations do not adequately address these new technologies and practices.").

43. *See, e.g.*, W. VA. CODE ANN. § 22C-9-2 (2010).
44. OHIO REV. CODE ANN. § 1551.18.
45. Newbury Twp. Bd. of Trs. v. Lomak Petrol., Inc., 583 N.E.2d 302, 304 (Ohio 1992).
46. Redman v. Ohio Dep't. of lndus. Relations, 662 N.E.2d 352, 360 (Ohio 1996).
47. *See* COLO. REV. STAT. ANN. § 24-33-103.
48. W. VA. CODE ANN. § 22-6A-2(a) (Supp. 2012).

> realize and enjoy the greatest possible good from these vital natural resources.[49]

In these states, most horizontal wells are approved under the regulatory process, which generally commences with an application or permit request. In Colorado, for example, horizontal well-specific rules provide that additional disclosure and reporting requirements are required for horizontal wells.[50] Similarly, the Texas Administrative Code sets forth specific rules for horizontal wells.[51] Texas defines a horizontal well as "[a]ny well that is developed with one or more horizontal drainholes having a horizontal drainhole displacement of at least 100 feet."[52] The Texas Administrative Code also provides specific setback requirements and proration rules for horizontal wells. In the State of North Dakota, mineral owners may pool their interests for the development and operation of the spacing unit when the interests in a spacing unit are separately owned.[53] By pooling their interests, each mineral owner has an opportunity to recover or receive, without unnecessary expense, their just and equitable share of such interests.[54]

Under the law of many states, including North Dakota, Oklahoma, and West Virginia, the surface owner cannot stop the mineral owner or mineral lessee from entering upon the surface to explore and develop underlying minerals. Oklahoma courts, for example, have held "[t]he owner of the surface cannot prevent the drilling of a well at the site chosen by the operator and approved by the [state]"[55] as "the owner of the surface has no standing to object to the unitized development of the underlying mineral resources."[56] Because a surface owner cannot prevent a mineral owner from utilizing the surface, these states have enacted surface damage legislation specific to surface use in the horizontal drilling process. For example, North Dakota law has been revised to require a mineral developer to compensate the surface owner for all damages to the surface.[57] North Dakota law now addresses two types of surface damages: "damages and

49. N.D. CENT. CODE § 38-15-01 (2004).

50. CO. OIL & GAS COMM. ("COGCC") R. 321.

51. *See* 16 TEX. ADMIN. CODE § 3.86 (1991).

52. *Id.* § 3.86(a)(4).

53. *See* N.D. CENT. CODE § 38-08-08 (Supp. 2011).

54. *See id.*

55. O'Brien Oil, LLC v. Norman, 233 P.3d 413, 417 (Okla. Civ. App. 2010) (citing McDaniel v. Moyer, 662 P.2d 309, 313 (Okla. 1983)).

56. *Id.* (citing Turley v. Flag-Redfern Oil Co., 782 P.2d 130 (Okla. 1989)).

57. N.D. CENT. CODE §§ 38-11.1-04, -08.1 (2004 & Supp. 2011). Historically, the mineral owner only had to compensate the surface owner if the mineral owner caused extraordinary or unreasonable damage to the surface. This is different from the strict liability standard found in Montana, for example.

disruption" and "loss of production."[58] Payments for "damages and disruption" are intended to compensate the surface owner for "lost land value, lost use of and access to the surface owner's land, and lost value of improvements caused by drilling operations."[59] Payments for "loss of production" are intended to compensate the surface owner for "loss of agricultural production and income caused by oil and gas production and completion operations."[60]

Similarly, West Virginia law requires oil and gas developers to compensate surface owners for damages resulting from drilling operations. Specifically, a developer is obligated to pay the surface owner a one-time payment to compensate for payment of real property taxes for surface lands and surrounding lands encumbered or disturbed by construction or operation of the horizontal well pad[61] in addition to compensation for:

> Lost income or expenses incurred as a result of being unable to dedicate land actually occupied by the driller's operation, or to which access is prevented by the drilling operation, to the uses to which it was dedicated prior to commencement of the activity for which a permit was obtained, measured from the date the operator enters upon the land and commences drilling operations until the date reclamation is completed; (2) The market value of crops, including timber, destroyed, damaged or prevented from reaching market; (3) Any damage to a water supply in use prior to the commencement of the permitted activity; (4) The cost of repair of personal property up to the value of replacement by personal property of like age, wear and quality; and (5) The diminution in value, if any, of the surface lands and other property after completion of the surface disturbance done pursuant to the activity for which the permit was issued determined according to the market value of the actual use made thereof by the surface owner immediately prior to the commencement of the permitted activity.[62]

The enactment of statutes and regulations dealing specifically with horizontal wells has provided some much needed clarity with regard to the relative rights of surface and mineral owners. Some states, however, have not yet adopted surface use statutes regulating horizontal drilling and,

58. Mont. Code Ann. § 82-10-505 (2012); N.D. CENT. CODE §§ 38-11.1-04, -08.1 (Supp. 2011).

59. N.D. CENT. CODE § 38-11.1-04.

60. *Id.* § 38-11.1-08.1.

61. W. VA. CODE ANN. § 22-6A-17 (Supp. 2012).

62. *Id.* § 22-6B-3(a).

therefore, continue to rely on common law principles addressing vertical wells. In the absence of clear statutory and regulatory mandates, courts should look to more experienced states for guidance.

V. ABSENT LEGISLATION – ARE HORIZONTAL WELLS A REASONABLY NECESSARY USE OF THE SURFACE?

Some states, such as Illinois, are devoid of modern drilling and surface use legislation. In these jurisdictions, courts are relegated to common law principles which are often inadequate in addressing the reasonableness of the use of one's surface for horizontal drilling. In Illinois, for example, the question remains, "Which will come first . . . hydraulic fracturing or regulations?"[63] Important to the discussion as to the reasonableness of the use of one's surface for the drilling of horizontal wells is the fact that recent "[a]dvances in drilling practices and hydraulic fracturing technologies have made horizontal drilling – once prohibitively expensive and technologically challenging – an effective and economic method of extracting oil and gas resources, especially in certain shale formations."[64] Several jurisdictions have recognized this "economy of scale" argument.

Although horizontal drilling technology has made drilling in the Marcellus Shale economically viable, it has also altered the necessity of entering the overlying surface tract. Specifically, horizontal drilling, which nullifies the outdated premise that the surface of a parcel of land must be drilled to access the mineral estate below, allows for the access of gas underlying the property without actually entering the surface estate.[65] Further, the ability to access the gas underlying multiple parcels through the use of a centralized horizontal well has raised new legal issues. In the absence of modernized statutory and regulatory schemes, the rights of surface owners and mineral owners are relatively uncertain and unpredictable as courts are forced to determine the corresponding rights of surface and mineral owners on a case-by-case basis.

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63. *See* Julie Wernau, *Illinois 'Fracking' Future Fractured: Plenty of Fights Lie Just Below the Surface of Natural Gas Drilling Plans*, CHICAGO TRIB. (Jan. 13, 2013), http://articles.chicagotribune.com/2013-01-13/business/ct-biz-0113-fracking-20130113_ 1_shale-gas-natural-gas-american-gas-association.

64. Michael J. Wozniak & Jamie L. Jost, *Horizontal Drilling: Why It's Much Better to "Lay-Down" than to "Stand-Up" and What is an "18° Azimuth" Anyway?*, 57 ROCKY MTN. MIN. L. INST. § 11.02[2], at 11-7 (2011) (citing Laura C. Reeder, *Creating A Legal Framework for Regulation of Natural Gas Extraction From the Marcellus Shale Formation*, 34 WM. & MARY ENVTL. L. & POL'Y REV. 999, 1004-05 (2010)).

65. *See* Patrick C. Booth & Jeffrey D. Roberts, *Directional Drilling Raises Questions About Surface Estates*, LEGAL INTELLIGENCER – ENERGY LAW (July 31, 2012), http://www.evergreen editions.com/display_article.php? id=1127016.

The absence of clearly-defined rights between surface owners and mineral owners has caused an influx of litigation. In states where the vast majority of minerals have been severed from the surface estate, surface owners often argue that the act of severance forever defines the outer boundaries of the mineral tract that can be produced from the severed surface.[66] Although this position is not supported by case law, an oil and gas treatise states as follows:

> The usual express easements and implied surface easements of a mineral owner or lessee are limited to such surface use[] as is reasonably necessary for exploration, development and production on the premises described in the deed or lease. Of course the instrument may expressly grant easements in connection with operations on other premises; such an express provision is common in joint or community leases or instruments which authorize pooling and unitization. Absent such express provision, clearly the use of the surface by a mineral owner or lessee in connection with operations on other premises constitutes an excessive use[] of his surface easements. . . . The consensus is that such veto power exists, although there is little case authority on the matter. The reason for the dearth of such authority is that such veto power appears generally assumed. . . .[67]

Some surface owners have pointed to this treatise in an attempt to constrain the development and production of minerals to the boundaries of their specific surface estate and to whatever specific antiquated technology existed at the time of severance.[68] While some courts have recognized that the implied easement of survace use generally does not extend to support activities benefiting off-leasehold properties, this proportion does not apply when either voluntary or compulsory pooling or unitization occurs. Limiting the use of the surface to the mineral tract directly beneath that surface would frustrate the important twin policies of generally encouraging progress and of specifically encouraging the most efficient and effective discovery and production of a valuable, limited natural resource like natural gas. To require otherwise "would be to stop to some extent the wheels of progress."[69]

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66. *See, e.g.*, Cain v. XTO Energy, Inc., No. 1:11-cv-00111-IMK (N.D.W. Va. filed July 22, 2011).

67. MARTIN & KRAMER, *supra* note 9, § 218.4, at 2-32 to 2-33.

68. *See generally* Julie Archer & Dave McMahon, *Bill Would Increase Opportunities to Rejoin Split Estate*, SURFACE OWNER'S NEWSLETTER, Summer 2012, *available at* http://www.wvsoro.org/newsletters/2012/summer.pdf.

69. Davis v. Jefferson Cnty. Tel. Co., 95 S.E. 1042, 1044 (W. Va. 1918).

In *Miller v. N.R.M. Petroleum Corp.*,[70] the United States District Court for the Northern District of West Virginia was asked to apply West Virginia law and determine "whether or not an oil and gas lessee may use the surface of a particular tract in connection with the operations on other tracts which have been unitized or pooled with the subject tract."[71] In *Miller*, the surface owner owned two contiguous tracts totaling sixty-two acres and the operator had the right to produce minerals beneath both.[72] The mineral operator sought to drill a well on the far tract, but the surface owner refused to give the operator an easement across the near tract so the operator could access the far tract.[73] The mineral operator then declared a unitization of the two properties and thereby asserted the right to cross the first tract for the purpose of developing the entire pool.[74] Plaintiffs attempted to have the question of whether this was a reasonable use certified to the West Virginia Supreme Court of Appeals, but the United States District Court said that although there was no state law on point, the majority rule from other jurisdictions provided a clear answer: "the majority rule in other jurisdictions would hold that pooling grants the right to use the surface of any tract in the drilling unit to produce gas or oil from the pool."[75] Based on the "economy of scale" principle, which recognizes that unitization promotes efficiency and prevents the waste of drilling numerous wells on each tract, the court held: "[i]t seems only reasonable that the surface area of each tract in a pool should be available for use in connection with the construction and operation of a well, as long as the use is reasonably necessary."[76]

Similarly, the Oklahoma Civil Court of Appeals held a unit operator "has the right to use any surface within the unit for the purpose of efficiently carrying out the approved unit plan, so long as such use is reasonable and not unduly burdensome to any particular surface area."[77] Likewise, the Texas Appellate Court recognized the reasonableness of horizontal drilling, indicating it "recovers hydrocarbons from the reservoir much more efficiently and effectively than does a conventional [vertical] hole. It also takes fewer of them. . . . It promotes the drilling of fewer

70. 570 F. Supp. 28 (N.D.W. Va. 1983). A very similar issue is currently pending in the United States District Court for the Northern District of West Virginia. *See* Cain v. XTO Energy, Inc., No. 1:11-cv-00111-IMK (N.D.W. Va. filed July 22, 2011).

71. *Miller*, 570 F. Supp. at 29.

72. *Id.*

73. *Id.*

74. *Id.*

75. *Id.* at 30.

76. *Id.*

77. Nelson v. Texaco Inc., 525 P.2d 1263, 1266 (Okla. Civ. App. 1974).

wells (preventing waste) and it realizes the more efficient and economical recoveries of this nation's reserves."[78]

Thus, recognizing the economy of scale provided by horizontal drilling, the majority rule provides the use of any surface within the unit is an implied property right that, when exercised to develop the minerals within the pool or unit, constitutes a reasonable and necessary use of the surface. Use of the surface is necessary to develop the minerals within the unit because the minerals cannot be developed in the absence of such use. To hold otherwise would thwart public policy, which favors the development of our natural resources. Moreover, in states where forced pooling and/or surface use compensation statutes have been enacted, allowing a voluntary or compulsory pooled unit to be defeated by a non-consenting surface owner would defeat the entire purpose of the legislation.

As a matter of necessity provided by the economy of scale, mineral owners must be permitted to use the surface to develop their minerals. Oftentimes, vertical wells will not be a reasonable alternative for developing the minerals because vertical wells are inefficient and, in the end, more costly because many more vertical wells need to be drilled to accomplish the same production as one horizontal well. Moreover, because one horizontal well can produce more natural gas than several vertical wells, a horizontal well could very well use *less* of a surface tract than numerous vertically drilled wells.

Furthermore, any doubt as to the reasonableness of horizontal drilling will likely be resolved by the *Restatement (Third) of Property*:

> Except as limited by the terms of the servitude . . . the holder of an easement or profit . . . is entitled to use the servient estate in a manner that is reasonably necessary for the convenient enjoyment of the servitude. The manner, frequency, and intensity of the use may change over time to take advantage of developments in technology and to accommodate normal development of the dominant estate or enterprise benefited by the servitude. . . .[79]

As such, horizontal drilling, "would seem to easily fit within either the 'reasonably necessary for the convenient enjoyment' category or the 'developments in technology' category."[80]

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78. Browning Oil Co. v. Luecke, 38 S.W.3d 625, 635 (Tex. App. 2000) (quoting Patricia A. Moore, *Horizontal Drilling – New Technology Bringing New Legal and Regulatory Challenges*, 36 ROCKY MTN. MIN. L. INST. §§ 15.01, .04, .05 (1990)) (alteration in original).

79. RESTATEMENT (THIRD) OF PROP: SERVITUDES § 4:10 (2000). This analysis has been applied to the use of hydraulic fracturing. *See generally* David E. Pierce, *Developing a Common Law of Hydraulic Fracturing*, 72 U. PITT. L. REV. 685 (2011).

80. Pierce, *supra* note 79, at 688.

VI. RECOMMENDATIONS

Comprehensive legislation addressing the corresponding rights of surface and mineral owners is necessary to the efficient production of natural resources. A comprehensive scheme would necessarily entail two components: forced pooling and surface use legislation. Forced pooling permits surface and mineral owners to apply directly to a regulatory body with jurisdiction over oil and gas operations. Thus, forced pooling statutes can be an effective tool for maximizing oil and gas recovery, preventing waste and unnecessary surface disturbance, and providing a fair and equitable result for all parties involved. Under a forced pooling scheme, surface owners are prevented from unnecessarily delaying the development and production of minerals. Surface use statutes, in turn, must specifically address horizontal drilling and provide the appropriate compensation to surface owners for the increased use of their property, including "unanticipated" damages as a result of new technologies.

VII. CONCLUSION

The legal framework for oil and gas production developed under the assumption that wells would be drilled vertically, and as a result, fails to adequately address modern drilling technology. A number of technological developments in oil and gas drilling and production, particularly horizontal drilling techniques, make this an opportune time to modernize the legal framework for oil and gas production. A legislative and statutory scheme specific to horizontal drilling is necessary to prevent waste, increase recovery of oil and gas, avoid the drilling of unnecessary wells, and protect the correlative rights of surface and mineral owners.