Coalbed Gas Ownership in Pennsylvania - A Tenuous First Step with *U.S Steel v. Hoge*

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Coalbed Gas Ownership in Pennsylvania—a Tenuous First Step with U.S. Steel v. Hoge

I. INTRODUCTION

The existence of methane gas in coalbeds has long been acknowledged, but the question of its ownership has only recently been brought to the forefront due to its newfound value as a potential energy resource. In December, 1983, the Pennsylvania Supreme Court rendered a decision on the issue of ownership of coalbed gas in U.S. Steel v. Hoge. The court found the coal owner to have exclusive ownership of the coalbed gas under the coal severance grant at issue in the case. The question was one of first impression in the state, and Hoge has become the leading case on point in the nation. Because of the lack of clear legal precedent, the litigation has provided an opportunity for commentators from the legal profession, the scientific community and the industry to offer approaches to the resolution of the ownership question.

The trial court, recognizing the complexity of the issue, held exhaustive hearings and made extensive findings of fact before entering a final decree quieting title in the landowner and his gas lessee. The superior court affirmed after a lengthy legal analysis,

2. Id. at 150, 468 A.2d at 1385.
stating that it appeared to be a clear victory for the landowner and his gas lessee. The supreme court reversed, however, and ordered a decree quieting title exclusively in the coal owner. What has evolved is a fully developed record of the facts and legal analysis supplemented by a rich collection of commentary by different sectors of the community.

The supreme court condensed the issue to a simple finding of intent by construing the coal severance grant using standard legal principles. The dissent criticized the parties and amicus briefs for arguing who should own the gas, when the issue before the court was who does own the gas. The superior court had earlier voiced a similar complaint, stating that although the suit had been brought in equity, it was satisfied that equitable considerations did not mandate a result different from one reached using standard legal principles.

If Hoge merely involves a simple finding of intent, why then all the debate? Obviously even supreme court justices can differ on the finding of intent. The focus, however, of much criticism by commentators has been the insufficiency of the application of such a standard legal doctrine to a controversy of this type. Mineral law historically has been shaped in part by consideration of the public interest. The Pennsylvania Supreme Court itself stated in Chartiers Block Coal Co. v. Mellon that mineral rights exist as a necessity: such rights must be adjusted and protected as required. The Chartiers court pointed out that coal and gas are essential to our common comfort and prosperity, and in Pennsylvania, a state which abounds with such resources, the question of rights becomes of a quasi-public character.

The final victory for the coal owner may not seem foreseeable after heavy setbacks at the trial and appeals court levels, but examination of the extensive writings on the issue provides insight into what factors influence this area of law and will work to vindic-

6. 503 Pa. at 150, 468 A.2d at 1385.
7. Id. at 159, 468 A.2d at 1390 (Flaherty, J., dissenting).
8. 304 Pa. Super. at 204, 450 A.2d at 173.
9. 503 Pa. 140, 468 A.2d 1380. The majority found that the intent of the parties was to vest exclusive ownership of the coalbed gas in the owner of the coal, while the dissent found joint ownership between the coal owner and gas lessee.
11. Id. at 297, 25 A. at 599.
12. Id.
13. Id.
cate the court's decision. This comment will present the back-
ground of the issue and case, review the criticism of the decisions
and set forth the social and economic perspective in which the su-
preme court decision in fact appears both appropriate and foreseeable.

II. CHARACTERISTICS OF COALBED GAS

Historically regarded as valueless and a hazard to mining,
coalbed gas has newfound value as a potential energy resource. Experiments conducted by the coal companies, including U.S.
Steel, and the federal government to determine the technological
and economic feasibility of degasifying coal seams in advance of
mining paint a bright picture. Much interest in the development
of coalbed gas has ensued in light of the vast reserves, the rising
costs of natural gas and the additional benefits accruing to the
mining operation.

The U.S. Department of Energy has estimated that there may be
as much as 850 trillion cubic feet (Tcf) of methane available in the
nation's coalbeds. This is roughly equivalent to the estimate of
the natural gas reserves in the United States by the U.S. Geologi-
cal Survey. Coalbed gas is similar in composition and heating
value to conventional natural gas and can be added directly to
commercial pipelines without remedial processing. Coalbed gas
represents only one percent of the energy found in the coal seam;
coal itself is the remaining ninety-nine percent. Degasification of

14. A good general description of coalbed gas is found in Kemp, supra note 3, at 6:
Coalbed gas is present in all coalbeds and is formed by biochemical and physical
processes during the conversion of accumulated plant material into coal. Of the mix-
ture of gasses termed "coalbed gas," methane constitutes 80 percent to 99 percent.
Coalbed gas is similar in nature to natural gas in physical and chemical properties
and can be interchanged with natural gas, added directly to natural gas pipelines,
used as a chemical feedstock, converted to liquid natural gas (LNG), burned as a
boiler or process-heating fuel, or used in gas turbines for generating electricity . . . .
Coalbed gas is contained in coal fractures and also is adsorbed on the micropore sur-
faces of even the tiniest piece of coal, and is released when confining pressure is
released.

Id.

15. Deul & Kim, Methane in Coal: From Liability to Asset, 61 MINING CONGRESS J.,
Nov. 1975 at 28.

16. Id.

17. United States Department of Energy, National Gas Survey, Nonconventional
Natural Gas Resources 8 (1978).

18. Id. at 8, 14.


the coal strata is also undertaken in advance of mining to increase the safety and productivity of the mining operation and to reduce ventilation costs.\textsuperscript{21}

Technology for coalbed gas recovery is ready for the marketplace, but standing as a hindrance to full development are the questions of ownership and the right to develop the coalbed gas in situations where the coal and gas rights are held by different parties.\textsuperscript{22} This issue has been addressed by the federal government,\textsuperscript{23} and one state has passed legislation.\textsuperscript{24} The majority of the states have not addressed the issue, however, and can expect to see it litigated. Such was the case in Pennsylvania.\textsuperscript{25}

\section*{III. U.S. Steel v. Hoge}

In August, 1977, the appellant, United States Steel Corporation (U.S. Steel), began operations to recover coal from the Pittsburgh coal seam.\textsuperscript{26} The turn of the century deed under which it claimed ownership of the coal underlying a certain tract of land in Greene County gave the coal owner "all rights and privileges necessary and useful in the mining of the coal" along with the "right of ventilation."\textsuperscript{27} The landowners reserved the right to "drill and operate through said coal for oil and gas without being held liable for damages."\textsuperscript{28} The appellees were the current surface landowners and their oil and gas lessee.\textsuperscript{29} The grants to the gas lessee included "all of the oil and gas and all of the constituents of either in and

\begin{itemize}
\item \textsuperscript{21} Deul & Kim, supra note 15, at 28.
\item \textsuperscript{22} Coal-Seam Gas Recovery is Ready For The Marketplace, CHEMICAL ENGINEERING, April 4, 1983, at 39.
\item \textsuperscript{23} See Kemp, supra note 3, at 13. See also Solicitor's Opinion, Ownership of and Right to Extract Coalbed Gas in Federal Coal Deposits, U.S. Dept. of the Interior, M-36935 (May 12, 1981) (methane was included in a Congressional reservation of oil and gas; opinion cites U.S. Steel. v. Hoge). See also Olson, infra note 112, at 362 (Congress has included coalbed methane in the category of high cost natural gas in Section 107 of the Natural Gas Policy Act of 1978).
\item \textsuperscript{24} See Bowles, supra note 3, at 7.25 (Va. Code § 55-154.1 vests ownership of coalbed gas in the surface owner in all cases of severances executed after January 1, 1978. However, no ownership rights are fixed for severances granted before January 1, 1978).
\item \textsuperscript{25} See Olson, supra note 3, at 378 n.6 (General Assembly of Pennsylvania H.R. 181, 1977 Session. The proposed bill declared that all methane under the surface of land in the Commonwealth is property of the Commonwealth. The bill created a State Methane Commission with authority to license and regulate commercial recovery of coalbed methane. The bill did not pass.).
\item \textsuperscript{26} 503 Pa. at 144, 468 A.2d at 1381.
\item \textsuperscript{27} Id. at 144, 468 A.2d at 1382.
\item \textsuperscript{28} Id.
\item \textsuperscript{29} Id. at 144, 468 A.2d at 1381-82.
\end{itemize}
under" the surface.\textsuperscript{30}

In January of 1978, drilling commenced on the two tracts specifically to recover coalbed gas contained in the underlying Pittsburgh coal seam.\textsuperscript{31} It was the gas lessee's apparent intention to increase production of the wells through the use of a hydrofracturing process.\textsuperscript{32}

Following this action, the Court of Common Pleas of Greene County granted the preliminary injunction sought by U.S. Steel to prevent alleged irreparable injury and damage to the coal seam if hydrofracturing techniques were implemented.\textsuperscript{33} In a consolidated action in equity, U.S. Steel also sought a determination of ownership of the coalbed gas and the right to develop it in the portion of the Pittsburgh coal seam underlying the two tracts.\textsuperscript{34} The court quieted title in the coalbed gas in the landowners and their gas lessee, permitting them to drill for coalbed gas in the coal seam.\textsuperscript{35} Use of any hydrofracturing techniques however, was prohibited.\textsuperscript{36} Additionally, the court determined that U.S. Steel had the right to any coalbed gas liberated during the ventilation necessary for safe operation of the mine.\textsuperscript{37}

On appeal to the Pennsylvania Superior Court, U.S. Steel advanced four arguments based on the severance deed plus a fifth based on public policy which would resolve the question of ownership of coalbed gas in favor of the owner of the coal severance.\textsuperscript{38}

The court prefaced its opinion by stating that rules of statutory

\begin{itemize}
  \item \textsuperscript{30} Id. at 144, 468 A.2d 1382.
  \item \textsuperscript{31} Id.
  \item \textsuperscript{32} Id. Hydrofracturing is a production stimulation technique where existing natural fractures in the coal seam are expanded by the application of hydraulic pressure and the controlled injection of gelled water into the coal. Sand grains in the gelled water prop open the fractures after the pressure is released. Hydraulic stimulation increases the permeability of the coal, extends the collection radius, and increases exposed surface areas. These factors control the rate of degasification of the coal. Deul & Kim, \textit{supra} note 15, at 28.
  \item \textsuperscript{33} 6 Pa. D. & C.3d 64 (1980) (preliminary order granting temporary injunction).
  \item \textsuperscript{34} U.S. Steel v. Hoge, No. 682, slip op. (Ct. C.P. Greene County, Sept. 29, 1980).
  \item \textsuperscript{35} Id. at 48.
  \item \textsuperscript{36} Id.
  \item \textsuperscript{37} Id.
  \item \textsuperscript{38} 304 Pa. Super. 182, 450 A.2d 162. U.S. Steel filed timely exceptions to Judge Toothman's decree of September 29, 1980. Superior Court President Judge Cercone wrote the opinion for a panel consisting of himself, Judge Brosky and Judge Hoffman. \textit{Id.} at 188-89, 450 A.2d at 165. The superior court dismissed U.S. Steel's attempt to widen the scope of review to include the chancellor's findings of fact. \textit{Id.} at 188, 450 A.2d at 165. The court stated that it had independently reviewed the record and found that sufficient evidence was adduced at trial to support all of the chancellor's findings of fact. \textit{Id.} at 188 n.6, 450 A.2d at 165 n.6.
\end{itemize}
construction require that the deed be considered in its entirety and that the language be read in light of the conditions existing at the time of execution.\(^{39}\) Ambiguous language would be interpreted most strongly against the drafter of the deed.\(^{40}\) The court added that rules of construction would not be used as a "magic formula" for resolution of the dispute, asserting that the foremost consideration is the intention of the parties.\(^{41}\)

The court first considered the argument that the severance grant of a fee simple interest in the Pittsburgh vein of coal embraced everything in the coal stratum.\(^{42}\) The court stated that coal ownership in Pennsylvania has been considered a corporeal hereditament ever since the 1858 decision of Caldwell v. Fulton.\(^{43}\) But, as the court pointed out, the Caldwell court, although it made reference to "substrata," did not hold that a coal severance deed grants a fee simple interest in the geological situs of that coal.\(^{44}\)

Disagreeing with U.S. Steel's reading of Lillibridge v. Lackawanna Coal Co.,\(^{45}\) Webber v. Vogel,\(^{46}\) and Chartiers Block Coal Co. v. Mellon,\(^{47}\) the court stated that U.S. Steel had focused on dictum therein which seemed to imply that ownership of coal was ownership of the *stratum in fact*, with all rights analogous to land ownership.\(^{48}\) The court, however, preferred the reading of the cases by commentators Craig and Myers who, the court explained, wrote that the true subject of the conveyance is not the stratum but a particular mineral substance.\(^{49}\) Pennsylvania law, the latter commentators point out, has recognized separate ownership of each


\(^{41}\) 304 Pa. Super. at 189, 450 A.2d at 166.

\(^{42}\) Id. at 190, 450 A.2d at 166.

\(^{43}\) Id. In Caldwell v. Fulton, 31 Pa. 475 (1858), the Pennsylvania Supreme Court held that coal is land, that the grantor granted the entire dominion over the coal to the grantee and did not reserve anything to himself. Therefore this was not a mere license to take coal but a corporeal hereditament. Id. at 481.

\(^{44}\) 304 Pa. Super. at 190 n.7, 450 A.2d at 166 n.7.

\(^{45}\) 143 Pa. 293, 22 A. 1035 (1891).

\(^{46}\) 189 Pa. 156, 42 A. 4 (1899).


\(^{48}\) 304 Pa. Super. at 192, 450 A.2d at 167.

\(^{49}\) Id. at 195, 450 A.2d at 168. See Craig & Myers, *Ownership of Methane Gas in Coalbeds*, 24 ROCKY MT. MIN. INST. 767, 774 (1978).
constituent of a given tract of land.\textsuperscript{50} The second argument considered by the court was that coalbed gas and coal are so intimately intermingled as to be considered essentially different aspects of the same substance.\textsuperscript{51} U.S. Steel argued that this was common knowledge at the time the severance deed was executed.\textsuperscript{52} The court, however, agreed with the chancellor's findings that this was not common knowledge, citing a 1930's geology authority for the hypothesis that coalbed gas was natural gas which had migrated and become trapped in the coal.\textsuperscript{53}

Turning to the legal background at the time of the execution of the coal severance deed, the court cited the \textit{Dunham} rule\textsuperscript{54} which, the court explained, provides that natural gas is not classified as a mineral and so does not pass under a grant severing coal and minerals from the surface tract.\textsuperscript{55} Taking into account the similarity of composition of coalbed gas and natural gas, and that the \textit{Dunham} rule was in existence before the execution of the deed, the court found no reason not to apply the \textit{Dunham} rule by analogy.\textsuperscript{56}

\textsuperscript{50} Craig & Myers, \textit{supra} note 49, at 774.

\textsuperscript{51} 304 Pa. Super. at 195, 450 A.2d at 168. U.S. Steel's full argument was that the coalbed gas and coal are so intimately intermingled that there was no physical separateness upon which to base individual ownership. Contrary to the chancellor's finding of fact No. 24, U.S. Steel argued that coalbed gas, being mostly adsorbed to the coal, should be properly characterized as an intrinsic part of the coal. Brief for Appellant at 23-24, U.S. Steel v. Hoge, 304 Pa. Super. 182, 450 A.2d 162 (1982).

\textsuperscript{52} 304 Pa. Super. at 195, 450 A.2d at 168-69. U.S. Steel argued that the popular identification of coalbed gas is best ascertained by the custom and usage within the coal, oil and gas industries. U.S. Steel pointed out that coalbed gas has never been considered in studies of natural gas deposits in Pennsylvania by the Pennsylvania Bureau of Topography and Geological Survey. Also, the record shows that grantors and grantees of coal lands in Greene County viewed an oil and gas reservation as referring to oil and gas underlying the vein of coal. Brief for Appellant at 26-31, U.S. Steel v. Hoge, 304 Pa. Super. 182, 450 A.2d 162 (1982).


\textsuperscript{54} 304 Pa. Super. at 196, 450 A.2d at 169. \textit{See} Dunham & Shortt v. Kirkpatrick, 101 Pa. 36, 47 A.R. 696 (1882). In \textit{Dunham}, the court held that a deed granting "timber and all minerals" did not include petroleum, the existence of which was unknown at the execution of the deed. The court concluded that the word "minerals" was used in its ordinary, everyday meaning and so was not understood to encompass petroleum. \textit{Id.} at 44. The \textit{Dunham} rule is peculiar to the law of Pennsylvania.


\textsuperscript{56} 304 Pa. Super. at 196, 450 A.2d at 169. The Pennsylvania Supreme Court does not discuss the \textit{Dunham} rule although it does cite to the case for other propositions. \textit{Id.} The court states instead that natural gas is a mineral in Pennsylvania. It is the opinion of this writer that the superior court incorrectly applied the \textit{Dunham} rule to the more narrow grant of only coal in \textit{Hoge}, whereas the \textit{Dunham} rule was originally based on the construction of a grant of "minerals."
In its third argument, U.S. Steel focused on the reservation in the grantor of the right to drill through the coal seam. U.S. Steel had asserted that this reservation was a right of access to oil and gas deposits underlying the coal and not a right to recover gas from the coal seam. The court, however, dismissed the argument by calling attention to the historical practice of the oil and gas industry to take gas from whatever stratum in which it is found. The court pointed out that the chancellor had found numerous cases of wells producing coalbed gas, some for substantial periods of time and some drilled specifically for that purpose. Additionally, the court stated that the reservation to drill through coal, read strictly against the grantor, constituted nothing more than an attempt to avoid liability for damages to the coal if drilling through the seam became necessary to gain access to gas.

The court next considered U.S. Steel's argument that the right to ventilation conferred on the owner of the coal severance is evidence of a property right in the gas. The court agreed with the chancellor's conclusion that the right to ventilate the mine creates no property right in the coal owner except to the extent of recovery of coalbed gas which is released incident to the mining operation. The court thus concluded that the coal owner is entitled only to the use or profits from the sale of coalbed gas which it reduces to its possession incident to the ventilation of the mine.

U.S. Steel's fifth argument was a public policy argument demanding rational exploitation of energy resources. U.S. Steel asserted that the important consideration was the low cost, efficient

57. Id.
58. Id.
59. Id. U.S. Steel argued that the court had misread the evidence as to the instances and circumstances under which gas has been produced from the coal vein. Carnegie Natural Gas, a subsidiary of U.S. Steel, has produced coalbed gas from only eight out of over nine hundred wells drilled in Greene and Washington Counties between 1920 and 1974. There was no evidence that coal owners were notified of such operations. Even with the passage of the Gas Operations Act in 1955, no notice of the intent to recover coalbed gas is required by law. Hence, the coal owners' failure to contest the taking of the gas is not indicative of an acceptance of the gas lessee's claim to the gas. Brief for Appellant at 26-31, U.S. Steel v. Hoge, 304 Pa. Super. 182, 450 A.2d 162 (1982). See infra note 104 and accompanying text for a discussion of the Gas Operations Act.
60. 304 Pa. Super. at 197-98, 450 A.2d at 170.
61. Id. at 198, 450 A.2d at 170. More specifically, U.S. Steel argued that the grant of a right of ventilation is evidence of the surface owner's intent to dispose of the gas and surrender all claims to the gas. Brief for Appellant at 20-21, U.S. Steel v. Hoge, 304 Pa. Super. 182, 450 A.2d 162 (1982).
63. Id. at 202, 450 A.2d at 172.
production of all resources. The coal owner would have the requisite interest in both coal and coalbed gas to insure maximum utilization of both resources. Though characterizing the argument as appealing, the court nonetheless insisted that "equity follows the law," and, considering the legal and factual background at the time of execution of the severance deed, concluded that it could not hold that the parties had intended that coalbed gas pass under the coal deed. Indeed, it appeared to the court to be the opposite. Concluding, the court stated that the cases seemed to indicate a "clear victory" for the surface owners and their oil and gas lessee, and indicated satisfaction that the proffered equitable considerations did not mandate a different result than the one reached using the applicable legal principles.

The Pennsylvania Supreme Court, however, reversed the judgment of the superior court and remanded to the Court of Common Pleas of Greene County for entry of a final decree quieting title in U.S. Steel. In an opinion by Justice Zappala, the court placed exclusive ownership of coalbed gas found in the coal seam in the coal owner. The court’s analysis rested on consideration of the characteristics, origins, and historical development of coalbed gas. Although gas is fugacious, according to Pennsylvania law, it is part of the property for the time it is in place there. Recognizing this principle, the court stated that as a general rule, whoever has title to the property in which the gas is resting owns the gas. In this case, therefore, the coal owner was held to own the coalbed gas as long as it remained within his property and exclusive control.

The court similarly recognized that any owner may allow others
certain rights to his property.\textsuperscript{74} In this case, the grantor of the coal reserved the right to “drill and operate through said coal for oil and gas . . . .”\textsuperscript{75} To determine the extent of these rights, the court looked to the language of the deed in its entirety, in light of the conditions existing at the time of execution, so as to give effect to the intention of the parties.\textsuperscript{76} Based on findings of fact by the chancellor in the court of common pleas, the court found that it would be inconceivable that the parties intended all gas to be reserved despite the use of the unrestricted term “gas.”\textsuperscript{77} Implicit in the reservation of “oil and gas,” the court asserted, was the understanding that it included that which was generally known to be commercially exploitable: the oil and natural gas found in strata deeper than the coal.\textsuperscript{78} It would strain credulity, the court submitted, to believe that the grantor would retain the right to a valueless gas with the attendant responsibility for its dangerous nature.\textsuperscript{79} Therefore, the court found that the reservation did not affect the coal owner’s exclusive right to the coalbed gas found within its coal seam.\textsuperscript{80}

Justice Flaherty filed a dissenting opinion in which Justice Hutchinson joined. The dissent would have affirmed the lower court’s permanent injunction against the use of hydrofracturing, but would have modified the order to the extent that it would vest title in both the surface owners and the coal owner.\textsuperscript{81} The dissent agreed that as long as the coalbed gas remained within the coal seam it was the property of the owner of the seam.\textsuperscript{82} In construing the reservation in the original grant of coal, however, the dissenting Justices found that the use of the unrestricted term “gas” included coalbed gas as a recoverable gas.\textsuperscript{83} They concluded therefore that the coal owner does not have exclusive ownership of the coalbed gas;\textsuperscript{84} the surface owner, or his gas lessee would, under the dissenting opinion, be permitted to so much of the gas present and extractable through drilling efforts within the constraint of not un-

\textsuperscript{74} Id. at 147-48, 468 A.2d at 1384.
\textsuperscript{75} Id. at 148, 468 A.2d at 1384.
\textsuperscript{76} Id. at 148, 468 A.2d at 1384-85.
\textsuperscript{77} Id. at 150, 468 A.2d at 1385.
\textsuperscript{78} Id.
\textsuperscript{79} Id.
\textsuperscript{80} Id.
\textsuperscript{81} Id. (Flaherty, J., dissenting).
\textsuperscript{82} Id.
\textsuperscript{83} Id. at 154-57, 468 A.2d at 1389-90 (Flaherty, J., dissenting).
\textsuperscript{84} Id. at 158, 468 A.2d at 1389-90 (Flaherty, J., dissenting).
reasonably impairing or rendering useless the coal estate. Concluding, the dissent criticized the parties' arguments concerning who should own the coal. Instead, the dissenting Justices asserted, the issue before the court was who does own the coal under the language of a particular coal severance deed. According to Justice Flaherty, whether the rights were allocated in a way that is today desirable was not for the court to decide.

IV. CRITICAL TREATMENT OF THE COALBED GAS OWNERSHIP ISSUE

Criticism by commentators on this issue has most often focused on the inadequacy of standard legal doctrines to resolve controversies of the type involved in Hoge, and the lack of true protection of the coal fee.

The determinant legal doctrine in Hoge was the finding of intent, a common subject for discussion and dissection. The supreme court cited McGinley, a commentator who finds the scales heavily tipped in favor of the coal owner if the ultimate criteria is intent. McGinley questions whether a grantor would convey coalbed gas of then negative value under a gas lease, knowing that the extraction would make the more valuable coal a more difficult and less profitable operation. Similarly, he finds it difficult to believe that the gas lessee intended to purchase the coalbed gas with the attendant responsibilities for damages arising from explosions. As a practical matter, coal operators have always borne responsibility for the hazards of coalbed gas without objection by the gas industry; thus it is logical, McGinley submits, to expect that the benefits are concomitant with the responsibilities for the disadvantages. McGinley goes on to state, however, that whatever the parties expectations as to coalbed gas as a known nuisance, commercial development of coalbed gas was never contemplated by the parties. In such instances he suggests that further negotiations for compensa-

85. Id. at 159, 468 A.2d 1385 (Flaherty, J., dissenting).
86. Id. at 159-60, 468 A.2d 1390 (Flaherty, J., dissenting).
87. Id.
88. Id.
90. Id. at 390.
91. Id.
92. Id.
93. Id. at 391.
94. Id. at 391-92.
95. Id.
tion between the surface owner and the coal owner would be appropriate.  

The earliest commentator on coalbed gas ownership, C.C. Williams, Jr., writing contemporaneously with the conveyance, believed that "any notions about the intended scope of the severance . . . would have to be sheerest guesswork." He doubted that there was ever a meeting of minds on the subject. Principle, precedent, and doctrine are found in equipoise in this controversy, so in the absence of direct authority, Williams maintained that it should resolve down to a question of public policy. It was his opinion that the coal operator in the pursuit of safety should be encouraged to experiment with exploitation of coalbed gas and, if forced to an ultimate choice between surface or coal owner, sound policy would favor the coal owner. Williams also observed that often when legal doctrine is stagnant, the mechanical arts continue to advance far beyond the existing technical rules. It is the task of the law to "guide this current innovation into safe channels."

One of the more serious criticisms which may be leveled against the trial and appellate court opinions is their failure to perceive the lack of true protection of the coal fee under existing Pennsylvania statutes once a coal seam has become target strata for drilling. The vulnerability of the coal seam was recognized by Judge Toothman in the trial court in discussing the insufficient protection provided to the coal owner under the Gas Operation, Well-Drilling, Petroleum and Coal Mining Act (Gas Operations Act). However, satisfied that the right to appeal to the court of common pleas from the Environmental Hearing Board overcame the lack of true protection under the Act as applied by the Department of Environmental Resources (DER), Judge Toothman stated that this would insure that "no coal lands suffer, . . . that [the coal seam] becomes a horizontal pegboard for the petroleum industry . . . . " In reality, however, the coal owner is so limited under the

96. Id.
98. Id.
99. Id. at 227.
100. Id.
101. Id.
104. U.S. Steel v. Hoge, No. 682, slip op. at 46.
administrative procedure that, in effect, he must litigate to prevent his seam from gaining such an undesired condition.\textsuperscript{105}

A recent decision concerning denial of an application for an offset well, Einsig \textit{v. Pennsylvania Mines Corp.},\textsuperscript{106} demonstrates the limited review allowed the DER. The court held that the DER could not issue or deny a permit on the basis of which private party, the coal owner or gas developer, would be more harmed financially.\textsuperscript{107} The court stated that once the DER determines that the well will not unduly interfere with or endanger the mine, if the parties cannot agree on a suitable location for the well, then the DER has authority under the Act to impose a determination of \textit{where but not whether} the well may be drilled.\textsuperscript{108} The DER cannot find that the well unduly interferes with the mine \textit{unless} there is adequate quantitative evidence establishing the amount of coal rendered unmineable from the drilling and sufficient evidence on additional costs.\textsuperscript{109} This may be a substantial hurdle in the case of wells drilled for coalbed gas in advance of mining in locations where the coal owner may not be able to provide the specific quantitative evidence to carry the burden of proof.

Additionally, one commentator has pointed out that while Judge Toothman in the trial court had asserted that coal owners could receive just compensation for any deprivation, diminution or unreasonable taking, the Gas Operations Act does \textit{not} require compensation for coal pillars, left around gas wells as a safety device

\textsuperscript{105} See Ingram, \textit{supra} note 3, at 32. The Gas Operations Act, Pa. Stat. Ann. tit. 52, §§ 2101-2504, sets out a permit procedure such that a well operator must have a plat prepared showing the political subdivision and county, name of lessor or landowner, name of owner or operator of all known underlying workable coal seams, proposed location of the well, proposed angle and direction of the well, and the identification number of the well. This information is to be forwarded by registered mail to the division which in turn shall notify by registered mail the landowner and owner of any coal seams. The coal operator then has ten days to file an objection and propose an alternate location if possible. If no objection is raised, the permit is granted. \textit{Id.} at § 2201(a). Upon objection, a hearing is scheduled. If the parties fail to agree on a location, the division shall by appropriate order determine a location. A drilling permit is promptly issued. \textit{Id.} at § 2202(b). The well operator has a duty to keep a log of all coal seams penetrated and the depth at which all oil, gas and water are encountered. A copy of the log shall be furnished to the division within thirty days after completion of the well. \textit{Id.} at § 2201(b).

\textsuperscript{106} 69 Pa. Commw. 351, 452 A.2d 558 (1982). In Einsig, a permit granted by the Department of Environmental Resources for drilling of an offset well was found to be improperly revoked by the Environmental Hearing Board on the basis of insufficient evidence that the well would unduly interfere with the mine. \textit{Id.} at 362, 452 A.2d at 564.

\textsuperscript{107} \textit{Id.} at 368, 452 A.2d at 567.

\textsuperscript{108} \textit{Id.} at 369, 452 A.2d at 567.

\textsuperscript{109} \textit{Id.} at 361-62, 452 A.2d at 563.
and required under Pennsylvania law. The additional wells for retrieval of coalbed gas, which would be needed given the restriction on hydrofracturing, would have required substantial amounts of coal to be left in place; the issue of compensation for such losses thus would have to be litigated in every case.

The coal owner will find little protection under the Gas Operations Act. If his coal seam were to become the target horizon, he would have to turn additional attention to every drilling permit and continually object, and possibly litigate, in order to preserve the minability of his seam. Fortunately, the threat of an onslaught of coalbed gas drilling permits has been eliminated by vesting exclusive ownership of coalbed gas in the coal owner.

V. U.S. Steel v. Hoge from a Social and Economic Perspective

Coalbed gas can provide a valuable supplement to the nation's supply of natural gas. It can do so in a rational and efficient manner, however, only after clarification of the ownership issue is achieved in order to eliminate the legal uncertainty now hindering development. In U.S. Steel v. Hoge, the Pennsylvania Supreme Court has taken an important—albeit tenuous—first step toward this goal.

Though Hoge added some clarity to the controversy by vesting exclusive ownership of coalbed gas in the owner of the coal, its disclaiming of public policy arguments was unfortunate; both social and economic considerations tend to support the result in Hoge and, in addition, demonstrate the need for further clarification that coalbed gas ownership is securely vested in the coal owner. An interesting assortment of interests will be served by such clarification: enhanced mine safety, conservation, and expansion of natural resources by way of enhanced entrepreneurial opportunity.

In Pennsylvania, an important coal producing state, safety of coal miners is of paramount importance. The volume of state statutes addressing mining reflects the state's concern not only with protection of coal as a resource, but also the protection of the individuals who extract it. The existence of methane gas consti-


111. In addition to the state, the Congress declared in the Coal Mine Health and Safety Act of 1969, 30 U.S.C. §§ 801-960 (1976): "The first priority and concern of all the coal mining industry must be the health and safety of its most precious resource—the miner." Id. at § 801(a).
tutes the most critical safety hazard. Ignitions and explosions are responsible for the deaths of many miners each year; the number of fatalities has increased as deeper, gassier coal seams are mined.\textsuperscript{112} State statutes\textsuperscript{113} coupled with strict federal regulations\textsuperscript{114} impose rigorous standards to insure the safety of the miners.

Comprehensive federal safety regulations require that the concentration of methane at the coal face be limited to one percent.\textsuperscript{115} If it exceeds this value, mining must stop until ventilation dilutes the methane to an acceptable level.\textsuperscript{116} Once diluted, methane constitutes less than one percent of the ventilation exhaust.\textsuperscript{117} At this point it is unrecoverable and benefits no one. Degasifying in advance of mining, although initially experimented with to improve mine safety, has also produced methane in marketable quantities.\textsuperscript{118} Additionally, degasifying improves productivity of the mining operation by reducing downtime due to gas concentrations and allows more efficient use of continuous mining machines.\textsuperscript{119}

The most successful methods of degasification include the use of large diameter vertical boreholes,\textsuperscript{120} advance mine shafts\textsuperscript{121} and horizontal boreholes at the face of the seam.\textsuperscript{122} All of these methods require the coal owner's cooperation. In order to effect efficient degasification, the coal owner should have the control necessary to coordinate degasifying with his mining operations. Coordination aside, the coal mine operator has always borne the primary responsibility for the safety of the miners; degasification thus presents an opportunity to encourage the coal owner to improve mine safety with economic incentives. The importance of clarification of coalbed gas ownership is clearly a prerequisite to achieving these dual goals.

In addition to these latter goals, securing full ownership of coalbed gas in the coal owner will work in a general fashion toward conservation of natural resources. As evident from its oil and gas

\textsuperscript{112} Olson, Development of Coalbed Gas As An Energy Source, 4 Energy Source 353, 356 (1979).
\textsuperscript{115} Id. at § 863(h)(1).
\textsuperscript{116} Id. at § 863(h)(2).
\textsuperscript{117} Id. at § 863(h)(2).
\textsuperscript{118} Deul & Kim, supra note 15, at 28.
\textsuperscript{119} Id.
\textsuperscript{120} Id.
\textsuperscript{121} Id. at 31.
\textsuperscript{122} Id.
conservation statute, 123 Pennsylvania has adopted a firm policy endorsing such conservation. The statute, though not applicable to coalbed gas, states plainly that waste of oil and gas is prohibited. 124

That the conservation goal cannot be achieved until ownership of coalbed gas is more firmly clarified is evidenced from what would have been the results of a sustained Hoge superior court ruling. Pennsylvania statutes require that coal pillars be left in place around gas well boreholes to prevent methane migration into the affected mine. 125 In recognition of this important safety precaution, the Hoge superior court had restricted the gas lessee's use of hydrofracturing. Under such a restriction, the alternative practice for the surface driller would be to drill more wells. Notwithstanding the statutory requirement demanding coal pillars for safety, with every new well comes added risk of methane seepage. The practical result of such a state of affairs is to increase risk to the miners and to leave more coal in place and unminable; thus coal is wasted as a safety material to prevent gas seepage, and gas is wasted as coal owners, likewise in the name of safety, continue to ventilate their mines. Had the superior court holding in Hoge been sustained, and had ownership of coalbed gas been vested in the grantor/driller, conservation and safety interests would have been hopelessly at odds. One way to reconcile safety and conservation interests is to encourage the coal owner to degasify in advance of mining. This one interested party can make the requisite decisions for maximum utilization of both resources. This will reduce the needless waste of natural resources while improving mine safety. Coalbed gas, as suggested above, can supplement the nation's energy supplies. Its current wasting is unconscionable in light of the nation's energy policy, 126 a vital element of which is a commitment to developing various sources of energy to reduce dependence on foreign sources. 127 Coalbed gas can make a significant contribution toward this goal, however, only if incentives are available to accelerate development. 128 Clarification of the ownership issue is needed to eliminate the legal uncertainty now hindering development; sim-

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124. Id. at § 404.
126. Olson, supra note 3, at 404. The federal government is committed to developing new sources of energy as the activities of the Department of Energy demonstrate. Id.
127. Id.
128. Olson, supra note 112, at 363. Olson maintains that coalbed gas can make a major contribution toward meeting the nation's energy needs at the most significant time, but only if incentives are made available now. Id.
ple rules easily administered are best suited for that purpose. Safety, conservation and development with an eye to future needs can be achieved by placing the burdens and the advantages in the hands of one party: the coal owner.

VI. Conclusion

In Pennsylvania after *U.S. Steel v. Hoge*, exclusive ownership of coalbed gas rests in the owner of the coal for grants of the involved time and type, barring a clear expression otherwise. However, by restricting the holding to the construction of a particular grant using conventional legal principles and disclaiming any policy arguments, the supreme court has limited its holding, thus allowing much flexibility for prospective distinguishable fact situations.

The *Hoge* case as it originally stood in the superior court, with essentially a division of ownership (gas lessee owns the gas except that which the coal owner ventilates and brings under his possession), was fraught with unanswered questions. The case would have been of little help in drawing the line between the two owners. The supreme court’s holding of exclusive ownership prevents the litigation which would have ensued to determine the reciprocal servitudes of the coal fee and gas lease.

Intent of the parties, if a clear indication thereof could be discerned, would be dispositive of the issue. In *Hoge*, where intent was so ambiguous that it had to be construed or negatively implied from a number of factors, the court was provided with a situation where it could have reasonably held for either party. It would be logical to have expected the social and economic considerations to sway the court toward a specific party. Still, the supreme court disclaimed any such public policy considerations. Those arguments were presented to the court, however, and it is precisely those arguments which make the supreme court decision in *Hoge* both foreseeable and appropriate.

Nancy P. Regelin

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