"The meek shall inherit the earth ... but not the mineral rights."

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1. Slogan used by the environmental group "Kentuckians for the Commonwealth" to
   rally support for surface owner rights against the problem of adverse mining effects. Lindsy
INTRODUCTION

American property law contains a curious doctrinal phenomenon: land may be horizontally severed into surface and subsurface estates so that legal title to multiple land strata vests in different owners.² This concept seems antithetical to traditional notions of property ownership that create in a landowner absolute, indivisible rights to a vertical space extending from the center of the earth into the heavens.³ Horizontal severance resonates in more modern theory, how-

². See Del Monte Mining & Milling Co. v. Last Chance Mining & Milling Co., 171 U.S. 55, 60 (1898) (stating that “[u]nquestionably at common law the owner of the soil might convey his interest in mineral beneath the surface without relinquishing his title to the surface,” thereby separating ownership of surface from ownership of “mines beneath that surface”); see also infra notes 23-46 and accompanying text (discussing theory and evolution of severed estate doctrine).
³. See 2 WILLIAM BLACKSTONE, COMMENTARIES *2 (explaining absolutist vision of prop-
ever, that property ownership consists of a “bundle of sticks,” such as the rights to use, devise, or exclude, and thus multiple people can own the “same” property if each possesses a different stick of the bundle.  

For example, a mining company may obtain title to a subsurface mineral estate while a private landowner or the government retains ownership of the surface. This arrangement is thought to provide specialization efficiencies because the surface owner can concentrate on attaining optimal use of the surface while the mineral owner does the same for the mineral estate. In the context of mineral development, severance seems especially useful because mineral extraction requires large investments of capital and sophisticated industry expertise, which are assets the typical landowner generally does not have. Horizontal severance raises one fundamental problem, however: property ownership as “that sole and despotic dominion which one [person] claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe”). Blackstone specified the scope of land ownership as follows:

Land hath also, in its legal signification, an indefinite extent, upwards as well as downwards. Cujus est solum, ejus est usque ad coelum, is the maxim of the law; upwards, therefore no [person] may erect any building, or the like, to overhang another’s land; and downwards, whatever is in a direct line, between the surface of any land and the centre of the earth, belongs to the owner of the surface; as is every day’s experience in the mining countries. So that the word “land” includes not only the face of the earth, but every thing under it, or over it.

Id. at *18; see also United States v. Causby, 328 U.S. 256, 260-61 (1946) (describing “ancient doctrine” of common law that “ownership of the land extend[s] to the periphery of the universe”).

In the late 1920s, Justice Cardozo first promulgated the notion that property ownership is analogous to ownership of a bundle of sticks. See Benjamin N. Cardozo, The Paradoxes of Legal Science 129 (1928) (arguing that “[t]he bundle of power and privileges to which we give the name of ownership is not constant through the ages. The faggots must be put together and rebound from time to time.”); see also Andrus v. Allard, 444 U.S. 51, 65-66 (1979) (using Cardozo’s terminology to discuss individual property rights as “strands” of “bundle” of such rights).

Professor Fox is careful to point out that the term “surface estate,” though widely used, is imprecise. Cyril A. Fox, Jr., Private Mining Law in the 1980’s: The Last Ten Years and Beyond, 92 W. Va. L. Rev. 795, 818 (1990). The so-called surface estate is usually a remainder interest, in that a mineral estate generally terminates when the minerals are exhausted or upon abandonment, depending on whether the mineral estate is a freehold or a leasehold, respectively. Id. Thus the “surface estate” will expand to encompass both the surface and subsurface estates once the mineral estate terminates, unless the parties have agreed otherwise. Id. This imprecision noted, the term will nevertheless be used for the sake of convenience.

The surface owner’s optimal use of his or her estate is conditioned, of course, on the mineral owner’s reasonable use of the surface for access to the minerals. See infra notes 76-79 and accompanying text (explaining “reasonably necessary” test used in restricting scope of mineral access easements).

See Ernest E. Smith, Evolution of Oil and Gas Rights in the Eastern United States, 10 E. Min. L. Inst. § 16.03, at 16-13 (1989) (explaining that even “shallow wells and relatively crude technology” of oil industry are beyond reach of most landowners). Mining for hard minerals tends to be even more capital intensive than oil drilling because of the greater risk and higher equipment, production, transportation, and labor costs involved. 4 American Law of Mining §§ 122.02-03 (Rocky Mtn. Min. Law Found. ed., 2d ed. 1992). Mining is generally financed through equity capital, whereas oil and gas drilling tends to be financed
ever: *access*. In the absence of express easements set forth in severance instruments for mineral exploration and development, how is a mineral owner to access his or her property?

Courts tend to become charged with answering this question, and for decades they have resolved it by designating the mineral estate dominant and the surface servient so that the mineral owner receives an easement encompassing as much of the surface as is "reasonably necessary" to extract the minerals. Unfortunately, this seemingly pragmatic solution led to alarmingly inequitable results in many cases, as mineral developers' reasonably necessary uses often left surface owners' estates substantially or completely destroyed. Change is afoot, however: the last two decades witnessed a flurry of litigation, legislation, and even constitutional amendment aimed at redistributing the rights and obligations of surface and mineral owners. These actions were taken in an attempt to bal-

through debt capital. *Id.* § 122.03. The difference lies in the time required for development: mining is a much slower process than drilling. *Id.* A mine often takes years to become profitable and decades to be worked to exhaustion, during which time the market for a given mineral can change dramatically. *Id.* Thus, landowners face major obstacles in attempting to mine their lands.

8. An easement is a nonpossessory interest (incorporeal hereditament) in land and may be defined as follows:

An easement is an interest in land in the possession of another which
(a) entitles the owner of such interest to a limited use or enjoyment of the land in which the interest exists;
(b) entitles him [or her] to protection as against third persons from interference in such use or enjoyment;
(c) is not subject to the will of the possessor of the land;
(d) is not a normal incident of the possession of any land possessed by the owner of the interest; and
(e) is capable of creation by conveyance.

*Restatement of Property, Servitudes* § 450 (1944). The traditional relationship between dominant mineral owner and servient surface owner is explained in *Getty Oil Co. v. Royal*, 422 S.W.2d 591 (Tex. Civ. App. 1967), as follows:

It is elementary that the mineral lessee, insofar as the surface of land is concerned, possesses the dominant estate, and the lessor, or surface owner, has the servient estate. The mineral lessee, as the owner of the dominant estate, has the right to the use and possession of so much of the surface as is reasonably required in the operation of his [or her] mineral lease.

*Id.* at 593.

9. *See infra* notes 74, 78, 86, 87, 230, 258 and accompanying text (providing examples of cases in which courts found mineral owner use of substantial portions or all of surface estate to be in accordance with "reasonably necessary" mining use doctrine).

10. *See Akers v. Baldwin*, 736 S.W.2d 294, 297-98 (Ky. 1987) (commenting that conflicting rights of surface and mineral owners have led to "plethora of litigation" throughout nation); *infra* notes 150-80 and accompanying text (surveying major legislative trends in field of severance disputes and describing Kentucky voters' radical attempt to amend their state constitution to redistribute some measure of power to surface owners). The Broad Form Deed Amendment voted on and passed in Kentucky has been called a "thinly disguised attempt to readjust property rights in favor of the surface owner and against the mineral estate owner by mandating the reinterpretation of contracts made almost one hundred years ago." Carolyn S. Bratt & Karen J. Greenwell, *Kentucky's Broad Form Deed Amendment: Constitutional Considerations*, 5 J. Min. L. & Pol'y 9, 10 (1989-1990). I do not think the attempt was "disguised." There is
ance increased demand for natural resources and improved methods of mining against heightened environmental awareness and strong surface development pressures. Millions of acres of min-

no question that this amendment and many of the legislative enactments adjust property rights via contract reinterpretation. This is necessary only because conveyance instruments are often ambiguous, and the ambiguities have been uniformly construed for over a century in favor of mineral owners, much to the detriment of surface owner rights. See infra notes 63-75 and accompanying text (examining doctrine of mineral estate dominance and providing examples of extreme mineral estate impact on surface estate allowable under doctrine). The choice to favor the mineral estate was political initially; therefore it is no great surprise to find that when policy changes, the sanctioned interpretation of ambiguous severance language changes as well.

11. See Marvin D. Truhe, Surface Owner vs. Mineral Owner or "They Can't Do That, Can They?" 27 S.D. L. REV. 376, 379 (1982) (describing reawakening of interest in mining for gold, uranium, oil and gas, coal, iron ore, industrial sand, and other minerals in South Dakota, brought on in part by new mining techniques that allow more cost-effective extraction of minerals than previously available); David Darlington, Copper Versus Grandeur, AUDUBON, July-Aug. 1992, at 91 (describing newly discovered copper deposit in British Columbia's Tatshenshini River wilderness and stating that "world demand for copper continues to grow," making mining attractive economic prospect despite remoteness of site and adverse environmental impact caused by mining process).

12. See, e.g., Roberts v. Twin Fork Coal Co., 223 F. Supp. 752, 752-53 (E.D. Ky. 1963) (noting that coal extraction via stripping and auguring became profitable after World War II, presumably because technological advances made removal of massive amounts of overburden (topsoil covering mineral deposits) more efficient and therefore cheaper than it had been in past; stating that new mining methods are "highly destructive" and "greatly increase the burdens on the surface estate"). Another modern mining development is the process of heap leaching, whereby cyanide is injected into the ground to remove gold. Truhe, supra note 11, at 379. This method has led to the reopening of many old mines in South Dakota's Black Hills. Id.

13. See, e.g., Surface Mining Control and Reclamation Act of 1977 (SMCRA) § 101, 30 U.S.C. § 1201 (1988) (reflecting concern over mining-induced subsidence damage to land, buildings, and water resources and assigning liability for such damage to mineral developers). For a discussion of SMCRA's effect in Kentucky, Maryland, Ohio, Pennsylvania, Virginia, and West Virginia, see generally Richard Roth et al., Coal Mining Subsidence Regulation in Six Appalachian States, 10 VA. ENVT. L.J. 311, 324-42 (1991) (concluding that treatment of problems falling under SMCRA differs from state to state because of variations in political and economic clout of mining industry relative to that of surface owners).

American taxpayers are increasingly unwilling to subsidize mining activities by paying to clean up after miners. See Commonwealth v. Harmar Coal Co., 306 A.2d 308, 321 (Pa. 1973) (stating that "[t]he public interest is not served if the public, rather than the mine operator, has to bear the expense of abating pollution caused as a direct result of the profitmaking, resource-depleting business of mining coal"), appeal dismissed sub nom. Pittsburgh Coal Co. v. Pennsylvania, 415 U.S. 903 (1974); see also John S. Palmore & Kevin M. McGuire, Avoidance of Disputes Between the Surface Owner and the Coal Owner/Operator Through Properly Drafted Severance Deeds, Leases, Subsidence Agreements and Other Instruments, 9 E. MIN. L. INST. § 6.03[2], at 6-8 (1988) (describing increasing influence of environmental and sociological considerations on use of private property stemming from property's finite nature).

14. See, e.g., Eastwood Lands, Inc. v. United States Steel Corp., 417 So. 2d 164, 168 (Ala. 1982) (deciding dispute between shopping center developer and miner in favor of miner because of existing surface support waiver in severance deed); Island Creek Coal v. Rodgers, 644 S.W.2d 339, 344-45 (Ky. App. 1982) (construing mineral owner duty to support surface estate as including weight of multiple houses in modern subdivision rather than simply as weight of single house and barn existing at time of severance); see also Paul F. Hultin, Recent Developments in Statutory and Judicial Accommodation Between Surface and Mineral Owners, 28 ROCKY Mtn. MIN. L. INST. 1021, 1021-22 (1983) (describing how increased population will cause land to become scarcer and thus more valuable commodity, thereby greatly increasing competition for use of surface).
eral lands in the United States are severed under turn-of-the-century "broad form" conveyance instruments,\textsuperscript{15} and many disagreements result when these instruments are interpreted in light of modern mining methods and newly valuable mineral resources.\textsuperscript{16} Other disputes arise when mineral owners seek to exercise long-dormant mineral rights on lands that have been improved by surface owners.\textsuperscript{17} All of these disputes impede the development of both surface and mineral estates by destabilizing the certainty of investment planning.\textsuperscript{18}

\textsuperscript{15} See infra notes 47-62 and accompanying text (defining broad form deeds and explaining circumstances under which such deeds are used to sever surface and mineral estates); see also J. Stephen Dycus, Legislative Clarification of the Correlative Rights of Surface and Mineral Owners, 33 Vand. L. Rev. 871, 871 (1980) ("Millions of acres of land in this country are owned by persons who do not hold title to the underlying minerals."); James L. Huffman, The Allocative Impact of Mineral Severance: Implications for the Regulation of Surface Mining, 22 Nat. Resources J. 201, 202 (1982) ("Most valuable minerals in the United States are owned separately from the land which overlies them.").

\textsuperscript{16} See, e.g., Pittsburg & Midway Coal Mining Co. v. Shepherd, 888 F.2d 1533, 1534-37 (11th Cir. 1989) (interpreting 1912 conveyance instrument to allow mineral owners to build coal slurry pond and pump as new method of disposing of coal mining waste, despite placement of facility on nine acres of surface owner's timberland); United States Steel Corp. v. Hoge, 468 A.2d 1380, 1380-90 (Pa. 1983) (litigating, as case of first impression, ownership of coalbed or methane gas that is adsorbed in micropores of coal and has previously been vented into atmosphere during coal mining as dangerous waste product because of its toxicity and high flammability, but is now recognized as having energy source value); Martin v. Kentucky Oak Mining Co., 429 S.W.2d 395, 396-99 (Ky. 1968) (construing 1905 broad form severance deed that did not specify approved mining methods as allowing modern surface mining, thereby sanctioning 100\% diminution in value of surface estate without imposing concomitant liability on mineral estate owner for use of enormous implied "easement"), overruled by Akers v. Baldwin, 736 S.W.2d 294 (Ky. 1987).

\textsuperscript{17} See, e.g., Martin, 429 S.W.2d at 396 (listing house, outbuildings, and gardens as improvements surface owners would lose when mineral owners decided, 60 years after severance, to commence mining); see also Chandler v. French, 81 S.E. 825, 828 (W. Va. 1914) (finding that 25-year period following execution of mining lease is unreasonable time to wait for mining to begin). Professor Fox delineates a number of reasons why long-severed mineral estates are not mined:

Some minerals go unmined as a result of the division of ownership which seems inevitable when property interests pass from generation to generation. Others go unmined when their corporate owners quietly go out of business without formal dissolution or bankruptcy proceedings. In still other cases, the minerals are being held as reserves, either against present commitments for future production or strictly as inventory for production or sale when market conditions warrant it. Finally, some mineral deposits cannot be economically developed under present market conditions or with current technology, but may be developed with changed conditions. Often non-production of a particular mineral property is due to a combination of these reasons.

Fox, supra note 5, at 819.

\textsuperscript{18} See Clyde O. Martz, The New Model Surface Use and Mineral Development Accommodation Act, 5 Nat. Resources & Envt'l 30, 31 (Winter 1991) (explaining that mineral estate owners can interfere with surface development and financing simply by expressing intent to exercise mining rights in surface estate, and that surface estate owners can impair mineral development by filing "unsuitable land for mining" petitions under federal or state SMCRA regulations); see also Dycus, supra note 15, at 882-83 (observing that legal uncertainty as to scope of potential mineral development instills reluctance in surface owners to develop their property fully for "fear that their hardwork would be suddenly destroyed by the mineral owner").
For these reasons, the National Conference of Commissioners on Uniform State Laws (Commissioners) became involved in drafting a uniform law for use by states in resolving severance disputes equitably and predictably. After examining state-to-state disparities in mineral availability, severance practices, and dispute resolution methods, the Commissioners drafted a model rather than a uniform law so that states could look to the law for guidance but modify it as necessary to meet local needs. The Commissioners spent three years examining the multiplicity of problems that arise between surface and mineral owners, and on July 19, 1990, they approved the Model Surface Use and Mineral Development Accommodation Act and recommended its adoption by all the states.

This Comment will analyze the Model Surface Use and Mineral Development Accommodation Act (Act or Model Act). Part I examines the theory of estate severance, broad form deeds, and the dominance of the mineral estate. Part II presents a survey of evolving severance doctrines put forward by courts and legislatures, with a special emphasis on the accommodation doctrine. Part III scrutinizes the Act itself, and Part IV analyzes the impact of the Act on mineral development and surface ownership in several states. Part V advances a series of recommended changes for the Act, and this Comment concludes that while the Act represents a step toward attainment of equity between surface and mineral owners, it is only a small step. Unless the Act’s provisions are strengthened, states seeking balanced use of surface and mineral resources will be better served by utilizing alternative statutory mechanisms.

I. HISTORY AND THEORY OF SEVERED MINERAL OWNERSHIP

A. The Doctrine of Estate Severance

As a preliminary matter, it is important to note that the Model Act is a legal tool intended for use solely in the context of horizontally severed estates. If one owner possesses a parcel of land in its entirety, disputes between a "mineral" and a "surface" owner do not arise and a statute of this kind is inapplicable. At early common law, horizontal severance was not, in fact, a recognized legal doctrine, for two reasons. First, the maxim *cujus est solum, ejus est usque ad coelum et ad inferos* (to whomsoever the soil belongs owns also to the

20. Martz, supra note 18, at 32.
sky and to the depths) dominated medieval English thinking about property ownership, and under this absolutist theory, any subterranean minerals belonged solely to the surface owner. Second, land transfers occurred through the ritual of “livery of seisin,” or delivery of possession, wherein land changed hands only after the parties traveled to the land being conveyed and the transferor handed the transferee a clump of soil or a tree branch taken from the land. By requiring the parties to grasp some physical manifestation of the land being transferred, this method theoretically precluded conveyances of undiscovered subsurface mineral lands.

The doctrine of estate severance gained a foothold in English legal theory via the operation of several ancient prerogatives of the King. First, the King held exclusive power to coin money, and incident to this right the King theoretically reserved all deposits of gold and silver to himself when granting out fee estates, thereby retaining sole right to extract these minerals. Second, the King

23. Owen M. Lopez, Upstairs/Downstairs: Conflicts Between Surface and Mineral Owners, 26 ROCKY MTN. MIN. L. INST. 995, 996 (1980); see also Edwards v. Sims, 24 S.W.2d 619, 620 (Ky. 1929) (analyzing ownership rights to Great Onyx Cave under this “old maxim and rule”); 2 BLACKSTONE, supra note 3, at *18 (defining ownership of land as extending down to center of earth).

24. Lopez, supra note 23, at 996; see also Edwards, 24 S.W.2d at 620 (quoting Blackstone’s statement of traditional rule that “whatever is in a direct line between the surface of the land and the center of the earth belongs to the owner of the surface”).

25. THOMAS F. BERGIN & PAUL G. HASKELL, PREFACE TO ESTATES IN LAND AND FUTURE INTERESTS 11 (2d ed. 1984). Additionally, the transferor had to chant words of grant while handing the soil to the transferee. Id. In an age lacking detailed land records, this ceremony worked to engrave the transfer in the participants’ memories and sufficed to notify feudal lords of the transaction. Id. at 10-11. Livery of seisin remained the dominant method of land transfer in England until 1536 and continued until 1845. Id. at 11. In 1845 the English Parliament passed the Real Property Act, which did not explicitly abolish livery of seisin but did sanction the use of written deeds as granting devices, thereby producing the same effect as outright abolition of the ritual. Id. at 11 n.25.


27. See The Case of Mines, 75 Eng. Rep. 472, 477 (Ex. 1567) (analyzing dispute between Queen of England and Earl of Northumberland over mine of copper containing gold and silver deposit and stating that “[a]ll mines of gold or silver throughout the realm, or of base metal, wherein there is any ore of gold or silver of however small value, belong to the King by prerogative, with liberty to dig . . . and carry it away from thence”). Among the prerogatives assigned to English royalty were “dominion of the sea, control over navigation, foreign affairs, defense of the realm, enforcing acts of Parliament, dispensing justice, coining money, providing for [their] own household, granting offices and titles of nobility, and collecting taxes.” William B. Stoebuck, A General Theory of Eminent Domain, 47 WASH. L. REV. 553, 562 (1972). The crown exercised these powers in its own right without needing parliamentary authorization to do so, perhaps because the responsibilities existed prior to Parliament’s ascension to supremacy. Id.

28. 2 WILLIAM BLACKSTONE, COMMENTARIES 18-19 n.20 (William D. Lewis ed., 1922) (“Mines of gold and silver, by royal prerogative from time immemorial, have belonged to the
was charged with responsibility for the defense of the realm, and to fulfill this prerogative, he had the right to enter private lands to excavate saltpeter for use in making gunpowder.\textsuperscript{29} The notion that "royal mines" could exist separately from surface ownership arose from these practices and provided an initial foundation for severance jurisprudence.\textsuperscript{30}

English colonists brought the royal mines concept to America: many of the charters under which the eastern United States was settled contained clauses reserving one-fifth of all gold and silver to the crown.\textsuperscript{31} After the American Revolution, some states asserted their own sovereign rights to precious metals,\textsuperscript{32} and the U.S. Congress

\textsuperscript{29} STOEYCK, supra note 27, at 563. The King's right to use private land in this fashion was challenged through the court system in 1606, and in light of traditional English conceptions of absolute private property ownership, see supra note 3, the plaintiffs seemingly had a strong case. Nevertheless, the King won. See The Case of the King's Prerogative in Saltpetre, 77 Eng. Rep. 1294, 1295 (K.B. 1606). The court reasoned:

\textsuperscript{30} Cf. Lopez, supra note 23, at 996 (questioning truth of King's prerogative mineral rights practices but labeling such practices, if true, as first historical evidence of severance).

\textsuperscript{31} Lopez, supra note 23, at 996. The civil law systems of France, Spain, and Mexico also contained doctrines allowing minerals to be reserved to the sovereign, so a majority of settlers who ultimately became enveloped within the boundaries of the United States had some theoretical familiarity with estate severance. Id. at 996-97; see, e.g., Shaw v. Kellogg, 170 U.S. 312, 334 (1898) (noting that under Spanish law all minerals were perpetually reserved to governing power); Sun Oil Co. v. Whitaker, 483 S.W.2d 808, 816 (Tex. 1972) (Daniel, J., dissenting) (tracing origin of estate severance rule in Southwest to rights of Spanish sovereign and stating that Republic of Mexico and then of Texas retained Spanish law mandating sovereign ownership of mines and minerals under all lands); see also Reed v. Wylie, 554 S.W.2d 169, 178 (Tex. 1977) (Daniel, J., dissenting) (listing minerals owned separately by Spanish and Mexican Governments in North America as "'not only the mines of gold and silver, but also those of precious stones, copper, lead, tin, quicksilver, antimony, calmine, bismuth, rock salt and other stoney matter (fossils), be they ores or semi-precious minerals, bitumen, and liquids (juices) of the earth'" (quoting Ordinances of May 22, 1783, promulgated for Mexico by King of Spain)). Mexican civil law governing mineral estate ownership remained effective in Texas until 1866. Reed, 554 S.W.2d at 177.

\textsuperscript{32} See 2 BLACKSTONE, supra note 28, at 18-19 n.20 (summarizing Pennsylvania and New York state severance law); Lopez, supra note 23, at 997 n.8 (noting that Pennsylvania and New
enacted a law reserving one-third of such metals to the Federal Government. These laws did not survive long, but they evidence colonial acceptance of separate governmental mineral estate ownership.

The Industrial Revolution provided impetus for discrete mineral ownership theory to evolve into a comprehensive severance doctrine applicable to private parties as well as to government. Industry and railroads needed large quantities of coal, iron ore, and other minerals to manufacture products beneficial to society and to provide transportation for the growing nation. Many landowners could not extract the enormous volume of minerals required by industry, nor did any one landowner necessarily own all the surface overlying a given coal seam or iron deposit. Mining entrepreneurs utilized governmental severance precedent to establish the right of private parties to possess severed minerals, and under this theory, developers were able to purchase minerals beneath many contiguous privately owned surface tracts, thereby gaining opportunities for large-scale production while avoiding expenditures for extraneous surface lands. Surface owners also gained incentive to allow their lands to be severed because they could use the capital gener-

York originally exercised sovereign power to reserve gold, silver, or other precious minerals to benefit state government).

33. See 28 JOURNALS OF THE CONTINENTAL CONGRESS 1774-1789 378 (John C. Fitzpatrick ed., 1933) (reprinting Act of May 20, 1785, ordinance for ascertaining mode of disposing of lands in western territories, which provided for reservation to United States of “one third part of all gold, silver, lead and copper mines”).

34. See Lopez, supra note 23, at 997 n.8 (noting that Pennsylvania repudiated its mineral reservation doctrine in 1843 and that New York asserted sovereign rights only “[f]or a short time”).

35. Lopez, supra note 23, at 997.


38. See, e.g., Reed v. Wylie, 597 S.W.2d 743, 745 (Tex. 1980) (discussing outcroppings of lignite on plaintiff’s land and at many other points in surrounding county; listing one outcropping within half mile and another within two miles of plaintiff’s tract); Chosar Corp. v. Owens, 370 S.E.2d 305, 307 (Va. 1988) (examining defendant’s need to access “Splashdam seam” of coal running beneath plaintiff’s land from adjoining land where seam outcropped and thereby allowed easier access to coal); Palmore & McGuire, supra note 13, § 6.02[1], at 6-4 (suggesting that development of typical coal tract of approximately 7500 acres in eastern Kentucky would require contract negotiations with over 100 different landowners and their families).

39. See Huffman, supra note 15, at 203 (explaining that Americans resorted to existing severance doctrine for economic advantages it provided to both surface and mineral developers).

40. See Huffman, supra note 15, at 203-04 (stating that severance allowed “economics of specialization” to benefit both estates).
ated by their minerals to develop the surface. Economically and practically speaking, therefore, mineral severance provided a means by which efficient and productive use could be made of multiple land strata.

See Huffman, supra note 15, at 203 (describing surface owners' generation of capital via estate severance).

See Donald N. Zillman & J. Russell Tyler, Jr., The Common Law of Access and Surface Use in Mining, 1 J. Min. L. & Pol'y 267, 290 (1985-1986) (declaring that because severance doctrine allows exploitation of surface and minerals on same parcel of land, doctrine is "surely an economically efficient use of scarce resources"); see also Huffman, supra note 15, at 202 (arguing that principles of estate severance are optimal in terms of allocational efficiency). In fact, Professor Huffman goes so far as to argue that the dominant estate rule that favors mineral owners, see infra notes 69-75 and accompanying text, optimally simulates the intentions of the parties to a severance and therefore results in efficient allocation of resources between surface and subsurface owners. Huffman, supra note 15, at 206. Professor Huffman explains the economist's conception of efficient resource allocation as follows:

\[ \text{[R]esources are efficiently allocated when the total value of production of commodi-} \\
\text{ties and services in the society, as measured by prices reflecting individuals' willing-} \\
\text{ness to pay, is maximized. This maximization principle is unconcerned with how the} \\
\text{optimal production will be distributed among consumers. It is claimed to be optimal} \\
\text{only in the sense that no greater yield of goods and services can be achieved by any} \\
\text{alternative allocation of resources... [A]ny efficient allocation of resources is effi-} \\
\text{cient only in the context of a particular distribution of wealth. Because value is mea-} \\
\text{ured by willingness to pay, the economist must take the existing distribution of} \\
\text{wealth as a given in assessing the efficiency of resource allocation at a particular} \\
\text{point in time.} \]

Id. at 209. This theory is extremely troubling, because by endorsing a dominant mineral estate doctrine as allocationally optimal, Professor Huffman is implicitly endorsing the current distribution of wealth. But see id. (asserting that subscribers to efficient-allocation-based-on-willingness-to-pay theory do not necessarily support distributional consequences of such theory). That is, for over a century surface owners and often society at large have been compelled to subsidize the profits of private mining companies by absorbing the diminution in value, repair, or replacement costs of mining-induced surface damage. See, e.g., Robert E. Mintz, Strip Mining: A Policy Evaluation, 5 ECOLOGY L.Q. 461, 479-85 (1976) (describing health, safety, environmental, financial, and other consequences borne by third parties as result of surface mining operations). In a "fair" world, these externalities would be borne by the miner developer, who could either handle them herself and thus gain incentive to minimize damage, or pass them on to society at large in the form of increased mineral prices. When value is measured in terms of "willingness to pay," absurd results ensue. The things that surface owners value but are not able (and therefore not "willing") to pay much for, such as intact surface lands and unadulterated water supplies, will not be deemed as high in "value" as a mineral estate that sells for a substantial sum of money, and thus use of the surface will be deemed less "allocationally optimal" than use of the minerals. See Huffman, supra note 15, at 209-10. But cf. ENVIRONMENTAL EQUITY WORKGROUP, U.S. ENVTL. PROTECTION AGENCY, EPA230-R-92-008, 1 ENVIRONMENTAL EQUITY: REDUCING RISK FOR ALL COMMUNITIES 12, 17, 20-21 (1992) (explaining that "not in my backyard" syndrome leads in part to siting of hazardous and solid waste management facilities in communities with "least ability to mount a protest," that is, in low-income communities; noting existence of evidence that exposures to and risk from environmental contaminants are higher than average for low-income communities because those communities tend to be located in areas with toxic waste sites and high levels of air pollution); Home Street, USA: Living with Pollution, GREENPEACE, Oct.-Dec. 1991, at 3, 8-13 (presenting case studies on how "[b]eing poor [and thus "unwilling" to pay] in America means breathing foul air, working filthy jobs, and living next door to toxic waste landfills and incinerators"). It is fundamentally irresponsible to write theoretically about allocational efficiency without factoring in the reality that willingness to pay is not equivalent to ability to pay. Any economic analysis that disregards distribution of wealth issues and nevertheless concludes that mineral estate dominance is optimal is therefore presumptively inadequate.
By 1900, the concept of estate severance was well established. In all jurisdictions today, the owner of a fee simple may create as many separate estates as there are different minerals or strata of minerals under his or her land. Severance may be accomplished by exception, reservation, grant, or lease. Once ownership is transferred, each severed estate is held under separate and distinct title, each of the estates is subject to the laws of descent, devise, and conveyance, and each is independently taxable and lienable.

B. Broad Form Conveyance Instruments

Surface and mineral estates are commonly severed by means of "broad form" conveyance instruments, or "deeds." Broad form deeds generally create sweeping rights for the mineral owner in terms of access easements and ownership privileges, but they fail to precisely define the minerals conveyed, the mining methods to be used, the expected surface damages, and the compensation to be paid for that damage. The deeds are notorious for their pervasive

43. Lopez, supra note 23, at 997-98.
44.马拉 E. Mansfield, On the Cusp of Property Rights: Lessons from Public Land Law, 18 Ecology L.Q. 43, 67 n.144 (1991); see, e.g., Davison v. Reynolds, 103 S.E. 248, 249 (Ga. 1920) ("The owner of the entire interest [in land] may sell the surface to A., the stratum of iron to B., the stratum of coal to C., the stratum of oil to D., and a stratum of the air space above.").
45. According to Professor Fox, "an 'exception' is the retention of some thing or some right which existed in the grantor before the conveyance, while a 'reservation' is the creation of a new legal right—one which did not exist while the grantor held the estate—passing to the grantor from the grantee.” Fox, supra note 5, at 801 n.34. Practical difference between exceptions and reservations has all but disappeared, however, because many attorneys are unaware of the technical distinction between the two and thus draft deeds imprecisely. Id. Courts realize this and focus on intent rather than on the actual words of conveyance used. See Bodcaw Lumber Co. v. Goode, 254 S.W. 345, 346 (Ark. 1923) (observing that "[t]hese terms are too often used interchangeably . . . to be material, and it always becomes a question to determine what the real intention of the parties was with respect to the thing granted"); Fox, supra note 5, at 801 n.34 (listing illustrative cases). The legal distinction between a mineral grant and a mineral lease retains vitality, however. In general, a lease conveys only a right to go on someone else’s land to extract something of value, whereas a grant conveys ownership of the mineral in place. Depending on how a conveyance is phrased, though, a "lease" may sometimes convey ownership in place and thus act as a severance instrument. See, e.g., Hummel v. McFadden, 150 A.2d 856, 861-63 (Pa. 1959) (holding that one agreement giving lessee right to mine and remove coal so long as coal was mined and removed in paying quantities, and another agreement giving lessee perpetual right to mine coal, with neither agreement mandating time, quantity, or royalty restrictions, were sales of coal in place and thus lessee acquired fee simple ownership of coal).
46. See Chartiers Block Coal Co. v. Mellon, 25 A. 587, 598 (Pa. 1893) (explaining that once estates are severed, "[e]ach of the separate layers or strata becomes a subject of taxation, of incumbrance, levy and sale, precisely like the surface"); Smith v. Jones, 60 P. 1104, 1106 (Utah 1900) ("When the surface and underlying mineral strata are separately owned, they constitute separate corporeal hereditaments, with all the incidents of separate ownership.").
47. For convenience, this Comment will refer to broad form conveyance instruments, which include deeds and leases, as "broad form deeds."
48. A recognized standard broad form deed does not exist, but the presence of three elements is generally thought to make a deed "broad form": (1) the right to use and operate on the surface, (2) a release of liability for surface damages, and (3) a detailed description of
ambiguity and their tendency to completely subsume surface rights to the mineral estate. For example, a widely used version of broad form deed called a “Mayo deed” grants the mineral owner the right to remove “[a]ll the coal, minerals and mineral products... in any

access easements. Barlow Burke et al., Cases and Materials on Minerals and Natural Resources Development on Private Lands (forthcoming 1993) (draft ed. ch. 3, at 298, on file with author). Broad form deeds may contain “detailed” descriptions of access easements, but “detailed” does not necessarily mean “specific.” For example, does a deed granting “the right to operate any machinery and mining upon the surface” mean the same thing in 1992 as in 1900? Clearly not. See infra notes 70-73 and accompanying text (describing increased impact on surface estate caused by technological advances in mining methodologies and energy production techniques). Easements couched in sweeping terms such as these are inherently ambiguous because the definitions of “machinery” and “mining” change over time, thereby changing the meaning of the conveyance. The following excerpt presents typically detailed yet ambiguous broad form deed language:

“Conveying all the minerals, etc.,... and such of the standing timber thereon as may, at the time of the use thereof, be or by the party of the second part [grantee], its successors or assigns, be deemed necessary or convenient for mining purposes, or so deemed necessary or convenient for the exercise and enjoyment of any or all of the property rights and privileges herein bargained, sold, granted, or conveyed... and the exclusive rights of way for any and all... haul roads and other ways, pipe lines, telegraph, and telephone lines that may hereafter be located on said land by the parties of the first part, [grantor], their heirs, representatives, or assigns, or by the party of the second part, its successors or assigns, by or by any person or corporation with or without the authority of either of said parties, their, or its heirs, representatives, successors, or assigns;... and to use and operate the surface thereof and any and all parts thereof... and also the right to build, erect, alter, repair, maintain, and operate upon said land... any and all houses, shops, buildings, ... and machinery and mining and any and all equipment, that may by the party of the second part, its successors or assigns, be deemed necessary or convenient for the full and free exercise and enjoyment of any and all the property rights and privileges hereby bargained, granted, sold, or conveyed;... and the right to remove all pillars and other lateral and subjacent supports (from the mines) without leaving pillars to support the roof or surface;... and the right to erect upon said land, and maintain, use, repair, and operate, and at their pleasure remove therefrom any and all buildings and machinery and mining and any and all equipment, whether specifically enumerated herein or not, that may by party of the second part, its successors or assigns, be deemed necessary or convenient for the exercise or enjoyment of any or all of the property, rights, and privileges herein... granted or conveyed, and also free access to, upon, and over said land for the purpose of surveying and prospecting for said property and interests.... And it, said party of the second part, its successors, and assigns, to have unlimited time in which to do so, and shall not be limited to commence the exercise or enjoyment of all or any of said property, rights, and privileges at any particular or reasonable time; and when so commenced shall not be deemed to have abandoned nor forfeited the same, nor any part thereof by a, or any cessation thereof, or any part thereof.... But there is reserved to the parties of the first part all the timber upon the said land, except that necessary for the purposes hereinafore mentioned; and there is also reserved the free use of said land for agricultural purposes, so far as such use is consistent with the rights hereby bargained, sold, granted and conveyed; and right to mine and use coal for their own personal household and domestic purposes.”

Case v. Elk Horn Coal Corp., 276 S.W. 573, 574 (Ky. 1925) (reprinting portion of elaborate granting clause of broad form mineral estate deed).

49. Martz, supra note 18, at 30; James K. Caudill, Note, Kentucky’s Experience with the Broad Form Deed, 63 Ky. L.J. 107, 114 (1975). But see Akers v. Baldwin, 736 S.W.2d 294, 304-05 (Ky. 1987) (“The provisions in typical broad form deeds are, beyond cavil, clear and unambiguous. They are, in fact, overwhelming in their language to demonstrate an intent to convey away the rights to the minerals described.”).
and every manner that may be deemed necessary or convenient for mining." This language can be interpreted so comprehensively that ownership of the surface essentially devolves to the mineral owner.

Broad form deeds received extensive use at the turn of the century. In the East, mineral speculators traveled from town to town using the deeds to purchase mineral rights under local people's lands. Mining companies perceived that broad form language would afford them "larger development rights and greater flexibility . . . with less exposure to compensation claims than would be the case if the grant or reservation language attempted in an abstract way to describe the scope and impacting elements of potential sur--

50. Buchanan v. Watson, 290 S.W.2d 40, 41-42 (Ky. 1956), overruled in part by Akers, 736 S.W.2d at 304-05; see also Rice v. Stapleton, 502 S.W.2d 522, 523 (Ky. 1973) (holding that owner of mineral rights can use any means necessary and convenient for mineral removal even if method damages surface that had been subsequently subdivided); Tolliver v. Pittsburgh-Consolidation Coal Co., 290 S.W.2d 471, 472 (Ky. 1956), overruled in part by Kentland-Elkhorn Coal Co. v. Charles, 514 S.W.2d 659, 663 (Ky. 1974) (overruling Tolliver's holding that mineral owner is not liable to surface owner in nuisance). The "Mayo deed" is named after John C.C. Mayo, a prominent turn-of-the-century mineral speculator who made a fortune purchasing and selling thousands of acres of mineral lands via these deeds. See HARRY M. CAUDILL, THEIRS BE THE POWER 57-84 (1983) (relating John Mayo's flamboyant life story and his unique technique for purchasing mineral rights from landowners).

51. See Caudill, supra note 49, at 116-17 (speculating that Mayo deed language seems challengeable only on public policy grounds, but pointing out that despite pro-mineral owner language in deeds, situations nevertheless occur where rights and privileges of transactors are uncertain).

52. Martz, supra note 18, at 30.

53. See Martin v. Kentucky Oak Mining Co., 429 S.W.2d 395, 398 (Ky. 1968) (Hill, J., dissenting) (noting that oftentimes books of uniform blank deeds were ordered by county clerks for convenience of mineral developers; these deeds required only insertion of land description, grantor's name, and acknowledgement by state to make conveyance valid), overruled by Akers, 736 S.W.2d at 303-05. Many of the landowners were illiterate and had little idea what riches they were granting away. HARRY M. CAUDILL, NIGHT COMES TO THE CUMBERLANDS 70-76 (1962). Caudill describes a typical turn-of-the-century mineral conveyance transaction as follows:

When the highland couple sat down at the kitchen table to sign the deed their guest had brought to them they were at an astounding disadvantage. On one side of the rude table sat an astute trader, more often than not a graduate of a fine college and a man experienced in the larger business world. He was thoroughly aware of the implications of the transaction and of the immense wealth which he was in the process of acquiring. Across the table on a puncheon bench sat a man and woman out of a different age. Still remarkably close to the frontier of a century before, neither of them possessed more than the rudiments of an education. Hardly more than 25 per cent of such mineral deeds were signed by grantors who could so much as scrawl their names. Most of them "touched the pen and made their mark," in the form of a spidery X, in the presence of witnesses whom the agent had thoughtfully brought along. Usually the agent was the notary public, but sometimes he brought one from the county seat. Unable to read the instrument or able to read it only with much uncertainty, the sellers relied upon the agent for an explanation of its contents—contents which were to prove deadly to the welfare of generations of the mountain-er's descendants.

Id. at 73-74.
face uses.”

In the West, the Federal Government encouraged settlement and preserved natural resources for the nation by allowing homesteaders to patent surface estates while simultaneously reserving subsurface minerals to itself. Because the Government lacked time and resources to perform geologic surveys before granting out the surface, ambiguous reservations of “all minerals” frequently sufficed to sever the estates.

Although broad form deeds often contain language expressly reserving access easements for the mineral estate, problems arise when mineral owners try to parlay this language into the enormous easements modern mining technologies require. For example, if two parties contracted in 1890 to allow the mineral owner “all rights and privileges necessary to go in and under [a] tract of land [to] mine and remove therefrom all coal and minerals,” is it fair to conclude that those parties anticipated and approved of the destructive easements required by modern surface, mountaintop, or chemical leach mining? Is it more reasonable to assume that the parties contemplated easements only of the scope generally mandated by mining methods known at the time of conveyance, plus or minus an

54. Martz, supra note 18, at 31.
55. See, e.g., Agricultural Entry Act of 1914, ch. 14, §§ 1-3, 38 Stat. 509 (codified as amended at 30 U.S.C. §§ 121-125 (1988)) (encouraging settlers to patent surface lands for agricultural use but reserving portions of land containing phosphate, nitrate, potash, oil, gas, or asphalitic minerals to U.S. Government); Stock Raising Homestead Act of 1916, ch. 9, §§ 1-11, 39 Stat. 862 (codified as amended at 43 U.S.C. §§ 291-302 (1988)) (allowing settlers to build homesteads and take government land as their own but reserving ownership of coal and other minerals that might be found on these lands); see also 1 AMERICAN LAW OF MINING, supra note 7, §§ 9.03-05 (detailing mechanics and motives of Federal Government’s promulgation of these and other statutes enacted to allow settlers to obtain federal nonmineral lands).
56. See, e.g., Stock Raising Homestead Act of 1916, ch. 9, § 9, 39 Stat. 862, 864 (codified as amended at 43 U.S.C. § 299 (1988)) (reserving all coal and “other” minerals to Federal Government while allowing stockraising lands to be patented by private citizens). Prior to Congress’ enactment of the Stock Raising Homestead Act in 1916, the Federal Government tried to classify lands in “mineral” and “nonmineral” categories. See 1 AMERICAN LAW OF MINING, supra note 7, § 9.05[1][a] n.1 (noting that federal mineral disposal system originated with Land Ordinance of 1785). The process of land classification was far from scientific, however, and often depended on misinformation provided by individuals trying to obtain mineral lands by having the lands categorized as nonmineral properties. Id. § 9.05[1][a]. In many other cases, the technology of the time made it impossible to ascertain whether a given tract of land contained minerals, and not surprisingly, much of the land patented as “nonmineral” according to this classification system turned out to be rich in minerals. Truhe, supra note 11, at 381 n.23. The Stock Raising Homestead Act’s broad reservation of “coal and other minerals” allowed the Federal Government to defeat these inaccurate or fraudulent land classifications and retain mineral reserves for the United States. See Watt v. Western Nuclear, Inc., 462 U.S. 36, 47 (1983) (describing Stock Raising Homestead Act as “the most important of several federal land grant statutes enacted in the early 1900s that reserved minerals to the United States rather than classifying lands as mineral or nonmineral”).
57. See supra note 48 and accompanying text (explaining treatment of access easements in broad form deeds and providing example of typical deed language).
58. See infra notes 70-73 and accompanying text (listing examples of expanded scope of mining easements under modern technologies).
59. Peabody Coal Co. v. Pasco, 452 F.2d 1126, 1128 n.2 (6th Cir. 1971).
average usage tolerance? If that same 1890 deed granted "all minerals" to the mineral owner, is it fair to expand the mining access easement to include minerals not considered economically or scientifically valuable in 1890? And what should happen under a severance instrument that lacks easement language of any sort? All of these questions arise in the context of severed estates, and liberal use of broad form deeds has complicated matters by increasing the level of uncertainty involved in conveyance interpretation.

C. Mineral Estate Dominance

A simple way to resolve ambiguous conveyance disputes is to designate one estate as having priority over the other. Thus at common law, the mineral estate has traditionally been considered dominant and the surface estate servient to the extent the mineral owner must use the surface to access the minerals. Practically speaking, this "mineral estate dominance doctrine" provides the mineral owner access to his or her property, but it also reflects policy consider-
Exploitation of America’s mineral wealth has long been considered a critical goal taking precedence over ownership rights in land surface. In 1882, the Supreme Court acknowledged a national policy favoring mineral development by allowing mining to proceed in the middle of a town. The Pennsylvania Supreme Court articulated this preference by stating, “To encourage the development of the great natural resources of a country[,] trifling inconveniences to particular persons must sometimes give way to the necessities of a great community.” This same court vividly described perceived consequences of curtailing mineral access:

"The public might be debarred the use of the hidden treasures which the great laboratory of nature has provided for man’s use in the bowels of the earth. Some of them, at least, are necessary to his comfort. Coal, oil, gas, and iron are absolutely essential to our common comfort and prosperity. To place them beyond the reach of the public would be a great public wrong. . . . [T]he question we are considering becomes of a quasi public character. It is not to be treated as a mere contest between A. and B. over a little corner of earth."

In the heyday of industrial development, sentiments such as these colored people’s perceptions of the burdens borne by surface owners under the dominance doctrine. Surface damage caused by
picks, shovels, and mule-drawn scrapers could perhaps be fairly labeled a "trifling inconvenience," and perhaps even the worst-case exercise of a dominant mining easement using nineteenth-century technology would not substantially impair surface land value. Circumstances have changed, however. Mineral developers now have powerful earthmoving equipment that allows a single miner to extract tons of ore per hour; new mining techniques inject cyanide and other chemicals into the ground and allow old mines to be productively reopened; increased pressures for energy sources impel

the continuing policy of the Federal Government in the national interest to foster and encourage private enterprise in ... the development of economically sound and stable reclamation industries"). The same policy has been promulgated in subsequent mineral laws. See National Materials and Minerals Policy, Research and Development Act of 1980, 30 U.S.C. § 1602 (1988) (pronouncing that "it is the continuing policy of the United States to promote an adequate and stable supply of materials necessary to maintain national security, economic well-being and industrial production"); Federal Land Policy and Management Act of 1976, 43 U.S.C. § 1701(a)(12) (1988) (asserting that "it is the policy of the United States that . . . the public lands be managed in a manner which recognizes the Nation's need for domestic sources of minerals, food, timber, and fiber").

See Martin v. Kentucky Oak Mining Co., 429 S.W.2d 395, 401 (Ky. 1968) (Hill, J., dissenting) (describing "usual, known, and accepted" mining methods around 1905 as including "picks, shovels, and slip-scrapers drawn by mules to remove the thin overburden")).

overruled by Akers v. Baldwin, 736 S.W.2d 294, 303-05 (Ky. 1987).

Surface ("strip"), mountaintop removal ("contour strip"), auger, and longwall mining methods all utilize massive machines that allow miners to excavate significantly larger quantities of minerals than old-fashioned room and pillar mining. See 1 AMERICAN LAW OF MINING, supra note 7, §§ 1.06[2][b], 1.06[3], 1.06[4][f] (explaining functioning of each type of mining technology); Dana Priest, Below Ground in Coal Country: Big Machines, Ready Replacements and the Strike's Bottom Line, Wash. Post, Nov. 26, 1989, at D1 (noting that longwall production is approximately five times faster than continuous room and pillar mining). Surface, mountaintop, and auger mining are enormously destructive, however. See Roberts v. Twin Fork Coal Co., 223 F. Supp. 752, 753 (E.D. Ky. 1963) (describing "highly destructive" post-World War II strip and auger mining machinery that "greatly increase[s] the burdens on the surface estate"); 1 AMERICAN LAW OF MINING, supra note 7, § 1.06[4][f] (describing use of giant auger machines that can bore 100 meters into hillsides); Van Gelder, supra note 1, at 65 (printing photograph of mountaintop removal mining in Martin County, Kentucky). Longwall mining creates rapid surface subsidence and may interrupt the flow of subterranean waters. See Large v. Clinchfield Coal Co., 387 S.E.2d 783, 787 (Va. 1989) (Russell, J., dissenting) (discussing evidence that longwall mining will cause plaintiffs' land surface to subside into five swales, each three feet deep, 600 to 700 feet wide, and 3000 to 5000 feet long, with resultant potential disruption of groundwater flows); 1 AMERICAN LAW OF MINING, supra note 7, § 1.06[2][b] (noting that as face of longwall mine moves forward into coal seam, roof supports move forward as well and exposed roof behind mined seam caves in).

See Bill Turque, The War for the West, Newsweek, Sept. 30, 1991, at 30-31 (describing process known as "heap leaching" in which ore is drenched in cyanide to chemically separate flecks of gold). High gold prices have spurred the reopening of old, previously unprofitable mines, Truhe, supra note 11, at 379, and the amount of gold recovered with cyanide has increased 6000% between 1979 and 1989. Turque, supra, at 31. Cyanide obviously has an adverse environmental impact on the surface estate. Id. at 30-31.

Uranium can be efficiently mined via solution, or "in situ" mining, where a chemical leach solution is injected into the ground and flushed through the underground ore. 1 AMERICAN LAW OF MINING, supra note 7, § 1.06[4][b]. The uranium dissolves into the solution and is pumped back up to the surface as "pregnant liquor," which is later filtered and precipitated and made into a salable substance called "yellowcake." Lomex v. McBryde, 696 S.W.2d 200, 202 (Tex. Ct. App. 1985). Again, a surface owner's land and groundwater are threatened by this introduction of toxic chemicals into the environment via mining.
production of previously "worthless" minerals such as oil shale, lignite, methane, and geothermal steam;\textsuperscript{72} and new materials such as uranium have been discovered.\textsuperscript{73} All of these changes impinge on surface rights to an extent unfathomable in the nineteenth century. Nevertheless, if mineral dominance is construed literally, surface owners holding land under ambiguous conveyances become subject to any surface easement the mineral owner chooses to exercise.\textsuperscript{74} In its most draconian manifestation, the dominance doctrine can be wielded to expand the scope of an implied mining easement to include any of the developments listed above. Thus, although a doctrine of mineral estate dominance may have seemed justifiable in the nineteenth century, it hardly seems fair today.\textsuperscript{75}

\textsuperscript{72} See United States Steel Corp. v. Hoge, 468 A.2d 1380, 1382 (Pa. 1983) (litigating, as case of first impression, ownership of methane gas under conveyance of "all the coal . . . together with . . . the right of ventilation"). Methane, or coalbed gas, is found in coal seams and is released when the coal seam is fractured. See id. at 1383 (describing process by which coalbed gas is extracted). Methane, measured in British Thermal Units (BTU) per pound, has approximately 90% of the heating value of natural gas, although only 1% of the BTU value of coal. Id. at 1386. The gas has been vented into the atmosphere for years as a dangerous and valueless waste product, and until the energy crisis of the 1970s, "it was still dismissed as useless and called moonbeam gas." Burke et al., supra note 48, ch. 1, at 31.

Lignite, another natural resource that has traditionally been thought commercially worthless, is an organic compound of carbon and hydrogen that exists in a form that could be called "post-peat" or "pre-coal." Lignite's BTU value is not as high as coal's, as the deeper and more compressed the plant material, the higher the BTU value. American Law of Mining, supra note 7, § 1.02[5][a]. Nevertheless, lignite is now used commercially as an energy source. Id.; see also Reed v. Wylie, 597 S.W.2d 743, 744 (Tex. 1980) (litigating ownership of near-surface lignite under conveyance of "all oil, gas and other minerals"), overruled by Moser v. United States Steel Corp., 676 S.W.2d 99 (Tex. 1984). Oil shale and geothermal steam are similarly relative newcomers to the commercial energy source arena. See, e.g., Andrus v. Shell Oil Co., 446 U.S. 657, 663 n.6, 668-70, 672 (1980) (litigating ownership of oil shale deposits and reprinting portions of congressional documents stating that in 1920 and 1931, oil shale had no commercial value, i.e., could not be mined and disposed of profitably; holding that in light of modern times' pressing need to find alternative energy sources, oil shale is to be considered a valuable mineral); United States v. Union Oil Co., 549 F.2d 1271, 1276-81 (9th Cir.) (holding that Federal Government reservation under Stock Raising Homestead Act of 1916 of "all the coal and other minerals" includes geothermal steam and other geothermal resources), cert. denied, 434 U.S. 930 (1977).

\textsuperscript{73} See Moser v. United States Steel Corp., 676 S.W.2d 99, 100 (Tex. 1984) (litigating dispute as to whether uranium is owned by mineral or surface estate owner under conveyance of "oil, gas, and other minerals").

\textsuperscript{74} See, e.g., MacDonnell v. Capital Co., 130 F.2d 311, 319-20 (9th Cir.) (finding that mineral owner's right to make reasonably necessary use of surface includes right to "wholly destroy" surface, if such destruction occurs as result of "usual or customary" method of mining), cert. denied, 317 U.S. 692 (1942); Buchanan v. Watson, 290 S.W.2d 40, 42-43 (Ky. 1956) (allowing surface mining to go forward by focusing analysis on mineral dominance rather than on intent of parties to allow certain types of mining), overruled on other grounds by Akers v. Baldwin, 736 S.W.2d 294 (Ky. 1987); Union Producing Co. v. Pittman, 146 So. 2d 553, 555 (Miss. 1962) (agreeing that mineral owner's right to extract minerals by usual and customary methods exists "even though the surface of the ground may be wholly destroyed as a result thereof").

\textsuperscript{75} The mineral estate dominance doctrine was not equitable or justifiable in the nineteenth century either, because individual surface owners were forced to subsidize private mineral development. See supra notes 65-67 and accompanying text (documenting precedence of mineral estate over surface estate). The external costs generated by mining should be inter-
II. EROSION OF MINERAL ESTATE DOMINANCE: THE RISE OF REASONABleness, THE ACCOMMODATION DOCTRINE, AND STATUTORY DEVELOPMENTS

A. Common Law Developments

1. Scope of the mining easement

As mineral estate dominance became an accepted canon in American jurisprudence, two moderating principles arose to mitigate the doctrine's potentially harsh consequences. First, it became axiomatic that a mineral owner's implied use of the surface could not exceed that considered "reasonable and necessary" for exploitation of the minerals. Any use beyond this threshold level provides the surface owner a cause of action for damages against the mineral owner. Typically, a surface owner must meet the rather high burden of proving excessive, wanton, or negligent use of the mining easement to obtain a remedy, but despite this qualification, a "reasonable necessity" standard still narrows the easement scope that could otherwise be broadly construed under the dominance doctrine. The rule can be justified in pragmatist's terms: it preserves


77. See Truhe, supra note 11, at 385-88 (discussing legislative origins of reasonably necessary test and noting that reasonable necessity standard is recognized today in majority of jurisdictions); see also RESTATEMENT (THIRD) OF PROPERTY, SERVITUDES § 2.15 (Tent. Draft No. 1, 1989) (stating that servitudes reasonably necessary to enjoyment of minerals will be implied from conveyances unless clearly contrary language exists in severance documents).

78. Theoretically, a holder of an implied or an express easement has no obligation to pay the owner of the servient estate for the reasonable exercise of that easement because the holder is merely exercising his or her property rights under the easement. See 1 HOWARD R. WILLIAMS & CHARLES J. MEYERS, OIL AND GAS LAW § 218, at 186.45 (1992) (noting that usual rules applicable to owners of dominant and servient estates apply to severed mineral interests and that mineral owner must use easements with due regard for interests of surface estate). But once easement use exceeds that considered reasonably necessary to attain its purpose, liability attaches. See Wilcox Oil Co. v. Lawson, 341 P.2d 591, 594 (Okla. 1959) (noting that surface owner's only basis for recovery of surface damages is "proof of wanton or negligent destruction" by mineral owner or proof that damages were "not reasonably necessary" for mineral development), superseded by OKLA. STAT. ANN. tit. 52, §§ 318.1-.9 (West 1991 & Supp. 1993); Sun Oil Co. v. Whitaker, 483 S.W.2d 808, 810-12 (Tex. 1972) (reversing lower court judgment that found mineral owner's use of water underneath surface estate in production of oil as not reasonably necessary use of mining easement).

79. The burden of proof on the surface owner is sometimes difficult to meet because the definition of "reasonably necessary" can be broadly defined to mean "convenient," "profitable," or "in accordance with industry practices." Dycus, supra note 15, at 880. Under flexible definitions such as these, courts have found that "reasonable use" can include use of all of the surface estate. Id. (citing Stradley v. Magnolia Petroleum Co., 155 S.W.2d 649, 652 (Tex. Civ. App. 1941)). In such situations, "reasonably necessary use" obviously does not act as much of a brake on the mineral estate dominance doctrine. See Buchanan v. Watson, 290 S.W.2d 40, 43 (Ky. 1956) (holding that any coal mining method, including surface mining, may be used under broad form deed without any obligation to pay damages except for those caused...
the original intent of the parties to the severance by acknowledging 
the patent illogic of reserving a surface estate if miners are expected 
to completely destroy that estate.79

Second, in the context of implied and express mining easements, 
surface owners are assigned an absolute right of subjacent sup-
port.80 That is, mineral developers must provide subterranean sup-
port for the land surface and for improvements existing or 
reasonably anticipated to be constructed on the surface after mining 
commences.81 The mineral owner is held strictly liable for any dam-
age to land or structures caused by his or her failure to fulfill this 
obligation.82 A strict liability standard reduces the burden of proof

by oppressive, arbitrary, wanton, or malicious actions), overruled on other grounds by Akers v. Baldwin, 736 S.W.2d 294, 304-05 (Ky. 1987).

79. See, e.g., Payne v. Hoover, Inc., 486 So. 2d 426, 427-28 (Ala. 1986) (finding only 
available method of extracting limestone to be surface mining and therefore not allowing 
mining to commence because it would destroy surface and negate intent of parties to mineral 
severance to preserve surface); Wiser Oil Co. v. Conley, 346 S.W.2d 718, 721 (Ky. 1960) 
(refusing to allow use of water-flooding process of recovering oil because method could not 
have been contemplated by parties to severance in light of fact that such method destroys 
surface); Wilkes-Barre Township School Dist. v. Corgan, 170 A.2d 97, 98-99 (Pa. 1961) (stating 
that where language of contract is ambiguous, language will be construed so that rational 
and fair result will ensue; holding strip mining to be barred because such mining subverts 
contracting parties’ intent). But see Martin v. Kentucky Oak Mining Co., 429 S.W.2d 395, 397- 
98 (Ky. 1968) (deciding that mineral owner paid sufficient sum of money for mineral estate to 
encومpass value of surface estate, so despite severance event, which, according to court, surface 
owner might have indulged in simply to retain whatever bare value title might have, 
mineral owner’s employment of surface mining, which will destroy surface estate, is not “un-
reasonable”), overruled by Akers, 736 S.W.2d at 303-04. One commentator has argued that the 
reasonably necessary limitation restricts the mineral owner’s “paramount interest in the real 
property,” so the mineral estate is not truly dominant. See Phillip E. Norvell, The Coal and 
Lignite Lease Compared to the Oil and Gas Lease, 31 ARK. L. REV. 420, 443 (1977) (asserting that 
mineral owner does not have right to destroy surface).

80. See Gabrielson v. Central Serv. Co., 5 N.W.2d 834, 838-39 (Iowa 1942) (reasoning 
that undisputed fact of mine cave-in was sufficient to establish lack of support for surface and 
affirming lower court’s award of damages to surface owner for injuries to house caused by 
mineral owner’s failure to provide adequate subjacent support); Penman v. Jones, 100 A. 
1048, 1045 (Pa. 1917) (finding that general conveyance of coal, machinery, fixtures, tools, and 
so on does not grant mineral owner release from absolute obligation to support surface); Cole 
v. Signal Knob Coal Co., 122 S.E. 268, 269-70 (W. Va. 1924) (noting that surface owner’s 
absolute right of surface support derives from legal doctrine “sic utere tuo ut alienum non laedas,” 
or “so use your property as not to injure the rights of another,” and awarding damages to 
surface owner for loss of horse that fell through opening in surface caused by coal mining).

81. See RESTATEMENT (SECOND) OF TORTS § 820 (1979). The section provides:

(1) One who withdraws the naturally necessary subjacent support of land in an-
other’s possession or the support that has been substituted for the naturally neces-
sary support is subject to liability for a subsidence of the land of the other that is 
naturally dependent upon the support withdrawn.

(2) One who is liable under the rule stated in Subsection (1) is also liable for harm 
to artificial additions that result from the subsidence.

Id.

(applying strict liability standard for damage to land and buildings caused by withdrawal of 
subjacent support, unless buildings’ weight contributed to subsidence); Western Coal & Min-
ing Co. v. Young, 65 S.W.2d 1074, 1075-76 (Ark. 1933) (noting that surface owner’s right to 
subjacent support is absolute and cause of action for subsidence damages need not be predi-
required of the surface owner, and thus if this doctrine can be wielded prospectively or if damages assessed are substantial enough to serve as a deterrent to irresponsible mineral development, a subjacent support rule can significantly limit easement scope.83 The rationale supporting this rule demonstrates the same pragmatic reasoning reflected above: severance is conceived of as a significant event evidencing intent to utilize both estates and to preserve maximum pre-mining value of the surface estate for use by the surface owner.84

In theory, these two limiting principles help to equalize the power of surface and mineral owners by encouraging fair utilization of both estates. The principles seemingly go so far as to partially invert the traditional roles of the estates: the surface estate becomes dominant and the mineral estate servient to the extent that the mineral owner's absolute freedom of surface action is curtailed.85 In practice, however, these rules are not always wielded in a fashion consistent with their theoretical basis. For the past century, courts operating on the premise that mineral exploitation is a critical national priority have routinely found ways to obviate any restraining influence reasonable use and subjacent support ideas might have on the dominance of the mineral estate.86 Even the "old reliables" of tort law, which include the doctrines of waste, nuisance, and trespass, provide a surface owner no remedy in a nation hungry for nat-

83. See Brooke v. Dellinger, 17 S.E.2d 178, 188 (Ga. 1941) (using subjacent rights theory to preclude use of surface mining method on surface owner's land); Campbell v. Campbell, 199 S.W.2d 931, 934 (Tenn. 1946) (holding miner liable for surface damage caused by loss of subjacent support despite surface owner's construction of building on land with knowledge of severed mining rights).


85. See Norvell, supra note 79, at 439-40 (describing impact of reasonably necessary use and absolute subjacent support rules as rendering surface and mineral estates "mutually servient" and "mutually dominant").

86. See, e.g., Ball v. Island Creek Coal Co., 722 F. Supp. 1370, 1372 (W.D. Va. 1989) (construing 1907 conveyance language "without leaving any support for the overlying strata" as unequivocal waiver of surface support so that longwall mining can be used by mineral owner); Trklja v. Keys, 121 P.2d 54, 54-55 (Cal. Dist. Ct. App. 1942) (allowing dredge mining for gold in creek bottoms to go forward despite concomitant destruction of surface because such mining is "usual manner" of gold mining operations); Kenny v. Texas Gulf Sulphur Co., 351 S.W.2d 612, 614 (Tex. Civ. App. 1961) (finding absolute duty of subjacent support waived by implication in sulphur mining context because subsidence therefrom is "necessary, natural, normal, inevitable" result of such mining); see also Vest v. Exxon Corp., 752 F.2d 959, 960-61 (5th Cir. 1985) (declaring that "[s]adly for the surface owner, Texas law . . . implies that a mineral [conveyance] gives a large measure of deference to the [mineral owner's] view of reasonableness").
A veritable wall of case precedent has been constructed on the foundational social policy favoring mineral development, and curiously, that wall is not held together by societal or even mineral owner efforts. Instead, it is mortared in place with the sacrifices of individual surface owners compelled to yield the value of their land to mining companies “for the good of the country.”

2. The accommodation doctrine

National priorities change, however. Under pressure from increasingly powerful agricultural, environmental, and surface development interests, the precedential wall favoring mineral development is beginning to crumble. A growing number of states have adopted a common law principle known as “the accommodation doctrine,” which builds on and transcends the traditional reasonably necessary test. While the reasonably necessary paradigm allows courts to focus solely on the needs and options of the mineral owner, the accommodation doctrine mandates examination of surface as well as mineral owner concerns. If the mineral owner pro-

87. See, e.g., Pennsylvania Coal Co. v. Mahon, 260 U.S. 393, 413 (1922) (declining to apply nuisance principles to case in which secondary removal of coal pillars would cause surface subsidence under private landowner’s house); P & N Investment Corp. v. Florida Ranchettes, Inc., 220 So. 2d 451, 454 (Fla. App. 1969) (following majority of jurisdictions’ rule that one of several co-owners of mineral estate may develop minerals without consent of other co-owners; extraction of minerals is material and continuing destruction of substance of mineral estate and therefore fits definition of waste, but majority rule views stream of income generated by property as important element of property ownership, so harm to property itself is less valued than harm to stream of income generated by property); Wiggins v. Brazil Coal & Clay Corp., 452 N.E.2d 958, 960 (Ind. 1983) (refusing to apply trespass on case cause of action to situation in which coal company continually pumped water out of strip mine and thereby drained artificial lake that surface owner relied on for catfish farming and commercial fishing purposes).

88. See, e.g., Pennsylvania Coal, 260 U.S. at 413 (using now-famous quotes, “This is the case of a single private house,” and “Government hardly could go on if to some extent values incident to property could not be diminished without paying for every such change in the general law” to strike down mining act that would have protected plaintiff’s home from mining-induced damage generated by privately owned mining company); Chartiers Block Coal Co. v. Mellon, 25 A. 597, 599 (Pa. 1893) (stating that it “would be a great public wrong” to prevent extraction of minerals, wherever they might be found).

89. See infra notes 100-15, 116-25, 126-33, 134-40, 141-49 and accompanying text (describing accommodation theory adopted by Texas, Utah, North Dakota, Arkansas, and West Virginia, respectively); see also Butler v. Baber, 529 So. 2d 374, 383 (La. 1988) (Dennis, J., concurring) (citing favorably Getty Oil Co. v. Jones, landmark accommodation doctrine case from Texas, in dispute between Louisiana oil and gas drillers and oyster bed lessees); Amoco Prod. Co. v. Carter Farms Co., 703 P.2d 894, 896 (N.M. 1985) (promulgating Getty Oil Co. v. Jones doctrine in severed oil and gas dispute in New Mexico).

90. See Bruce Kramer, Conflicts Between the Exploitation of Lignite and Oil and Gas: The Case for Reciprocal Accommodation, 21 Hous. L. Rev. 49, 60-61 (1984) (classifying reasonably necessary test as “unidimensional” analysis focusing solely on mineral owner activities to determine scope of mineral easement, whereas accommodation doctrine is “multidimensional” approach that examines rights and duties of both mineral and surface owners).
poses to use a mining method that will interfere with an existing surface use, the accommodation doctrine compels the mineral owner to utilize reasonable alternative mining methods, if such methods exist. Generally, it does not matter that the alternative methods cost more to implement than the proposed method, so long as the alternative cost is reasonable.

This surprising infringement on previously nigh-inviolable mineral rights reflects a more balanced policy choice than previously evinced. Rather than favoring mineral exploitation at the expense of all else, the accommodation doctrine "serve[s] the public policy of developing our mineral resources while, at the same time, permitting the utilization of the surface for [other] productive... uses." The accommodation doctrine is more equitable than the dominance doctrine because it facilitates wider wealth distribution and broader land utilization. Preference for mining activity is not completely subsumed, however. The accommodation doctrine carefully preserves mineral estate dominance by assigning the burden of proving the existence of mining method alternatives to the surface owner, and by providing that if no reasonable alternative exists, the mineral owner may implement his or her proposed surface use despite the fact that it interferes with the surface owner's use of his or her land.

The accommodation doctrine is clearly a manifestation of the common law's ability to adapt to changing societal conditions. Significantly, the doctrine first evolved in a western setting under

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91. See infra notes 106-10 and accompanying text (examining development of accommodation doctrine in Texas and explaining mechanism by which mineral estate dominance is retained despite accommodation theory's encroachment on traditional dominance).

92. See, e.g., infra note 109 (explaining differential in cost of drilling methods in Texas accommodation doctrine case).


94. Mineral estate dominance allows the mineral owner to use her land in any way she deems necessary to make it profitable, so long as the use meets the reasonably necessary requirement. See supra notes 76-79 and accompanying text (explaining reasonably necessary standard). It follows that the surface owner will not be able to use her land to the greatest advantage for her, because her use is subject to the mineral owner's decisions. Equalizing the power of the two estates will give surface owners more discretion in making land use decisions, thereby potentially redistributing some of the mineral owner's wealth to the surface owner. See Jones, 470 S.W.2d at 622 (compelling mineral owner to accommodate surface owner's farming activities even if mineral owner's costs increase).

95. See infra notes 109-10, 131-33 and accompanying text (explaining burden of proof assignment promulgated by Texas and North Dakota courts in accommodation context).

96. For examples of common law adaptations to evolving social conditions, see State v. Hay, 462 P.2d 671, 678-79 (Or. 1969) (Denecke, J., concurring) (using creative "custom" argument to find that dry sand area between mean high tide line and visible line of vegetation on entire Oregon coastline belongs to state and cannot be privately owned: it is for public use, despite overwhelming precedent to contrary); Prah v. Maretti, 321 N.W.2d 182, 189 (Wis. 1982) (granting cause of action to owner of solar-heated home to prevent neighbor's construction of house that would block solar collector; stating that old policies supporting
the influence of powerful agricultural interests.97 Also significant is the fact that accommodation ideas developed in the context of oil and gas drilling rather than in the arena of hard mineral development.98 Because the Model Act codifies a version of the accommodation doctrine99 and is suggested for use in all states and for all types of minerals, it is important to understand the functional dynamics of these factors. A basic understanding may be obtained by examining the implementation of the accommodation doctrine in a number of states.

a. Birthplace of accommodation

Texas blazed the trail in the development of accommodation theory by advancing the prototypical doctrine in Getty Oil Co. v. Jones.100 In the case, Jones, the surface owner, used a self-propelled irrigation system requiring seven feet of surface clearance to water his cotton fields.101 Getty Oil, one of several mineral owners, installed two oil pumps exceeding seven feet in height that obstructed the operation of Jones’ machine.102 Two other oil companies produced oil from underneath Jones’ land without interfering with his irrigation system: Amerada Petroleum used hydraulic pumping units that were only a few feet high, and Adobe Oil sunk beam-type units simi-
lar to those used by Getty into concrete cellars to provide clearance for Jones' system.\textsuperscript{103} The lease granting out Getty's mineral estate did not specify the type of oil pumps that could be installed on the land, but it did contain a clause requiring the mineral owner to bury any pipelines below ordinary plow depth,\textsuperscript{104} which could be construed as evidence of intent to allow farming to exist in tandem with mining.\textsuperscript{105}

Jones brought suit to enjoin Getty's use of the pumps and for damages, and Getty argued that the easement required by its pumps met the long-established reasonably necessary limitation on mineral estate dominance.\textsuperscript{106} The court was not persuaded by Getty's argument, and stated:

[W]here there is an existing use by the surface owner which would otherwise be precluded or impaired, and where under the established practices in the industry there are alternatives available . . . whereby the minerals can be recovered, the rules of reasonable usage of the surface may require the adoption of an alternative by the [mineral owner].\textsuperscript{107}

In the interest of realizing maximum benefit from both surface and mineral lands, the court assigned the surface owner a right "to an accommodation between the two estates."\textsuperscript{108} The court stressed that this accommodation does not entail a balancing of surface owner harm or inconvenience against mineral owner options; instead, the surface owner must prove that the mineral owner's surface use is not reasonably necessary by showing that reasonable mining alternatives exist.\textsuperscript{109} If the surface owner cannot carry this

\textsuperscript{103.} Id. \\
\textsuperscript{104.} Id. at 621. \\
\textsuperscript{105.} But see id. at 625 (McGee, J., dissenting) (construing lease provision as explicitly delineating all and only mining equipment required to be buried beneath land surface because "it is elementary that an express stipulation upon a matter excludes the possibility of an implication upon the same subject"). \\
\textsuperscript{106.} Id. at 621. \\
\textsuperscript{107.} Id. at 622. \\
\textsuperscript{108.} Id. at 623. \\
\textsuperscript{109.} See id. at 627-28 (on motion for rehearing) (clarifying that initial issue is not question of inconvenience to surface owner, but rather is evidentiary issue as to whether surface owner is able to carry burden of proving mineral owner's surface use is unreasonable). The court stated, somewhat tautologically, that the reasonableness of a mineral owner's access easement "may be measured by what are usual, customary and reasonable practices in the industry under like circumstances of time, place and servient estate uses." Id. at 627. Thus, accommodation must be determined on a case-by-case basis. See id. (hypothesizing as to potential difference in determined reasonableness of given mining use as applied to "bald prairie used only for grazing" versus use "within an existing residential area . . ., campus . . ., or irrigated farm").

By structuring the accommodation doctrine so that the issue of reasonable alternative mining methods is a question of fact that must be proven by the surface owner, the Texas Supreme Court preserved the dominant status of the mineral estate. See Kramer, supra note 90, at 65-66 (discussing Texas jurisprudence in context of North Dakota case). The court was
burden of proof, then the mineral owner may proceed with the planned surface use, and if the surface owner does meet the burden, then a balancing of the options available to each party ensues.\textsuperscript{110} Here, Getty clearly had two other reasonable options available while Jones had none,\textsuperscript{111} so the court remanded the case for findings consistent with the new doctrine.\textsuperscript{112}

The factors motivating the majority’s promulgation of this new accommodation doctrine were twofold. First, Texas had adopted a policy favoring agricultural as well as mining activities, so the court had legislative support to bolster its decision.\textsuperscript{113} Second, disputes between surface and oil and gas owners in Texas arose infrequently, apparently because drillers routinely accommodated surface uses to avoid altercations of this sort.\textsuperscript{114} In light of the latter factor, perhaps the majority did not think its decision would cause the “tidal

not reluctant to impose restrictions on the mineral owner, however, as evidenced by its willingness to uphold accommodation despite the increased costs the mineral owner would incur in utilizing alternate mining methods. See Jones, 470 S.W.2d at 622 (reprinting petroleum engineer’s and contract pumper’s expert testimony that oil pump cellars would cost less than $12,000 to install and would have lower maintenance costs than surface pumping units, and that hydraulic pump installation would cost approximately $5000 more than installation of Getty’s offending pumps and would run extra $350 to $1000 to operate each year). Apparently, increased costs for the alternative mining methods are acceptable as long as they are adjudged to be reasonable. See \textit{id.} (introducing discussion of expert witness testimony by stating that “there was evidence to show that [Getty] had reasonable alternatives for obtaining its oil”).

110. \textit{Id.} at 627-28 (Steakley, J., on motion for rehearing). If the surface owner fails to establish the existence of usual, customary, and reasonable alternative mining methods, then the analysis reverts to the unidimensional question “whether the proposed [mining] use is nonnegligent and will enhance mineral production” (i.e., the reasonably necessary test). Mansfield, \textit{supra} note 44, at 71.

111. See Jones, 470 S.W.2d at 622-23 (discussing acute, persistent farm labor shortage that compelled Jones’ decision to purchase automatic sprinkler system in 1963; examining suitability of substitutes such as manual or reversible automatic irrigation systems; finding each substitute to be unrealistic because of labor shortage or loss in irrigation time).

112. \textit{Id.} at 618, 623 (affirming lower court’s reversal and remand of state district court’s granting of Getty Oil’s motion for judgment \\textit{non obstante veredicto}).

113. See \textit{id.} at 622-23 (discussing Texas public policy of developing minerals in tandem with surface utilization for productive agricultural uses); see also \textit{id.} at 622 (quoting court’s own recently articulated recognition that surface soil has value as natural resource in its own right, per Acker v. Guinn, 464 S.W.2d 348, 352 (Tex. 1971), which states: “[the mineral estate] owner is entitled to make reasonable use of the surface for the production of his [or her] minerals. It is not ordinarily contemplated, however, that the utility of the surface for agricultural . . . purposes will be destroyed or substantially impaired.”) (emphasis added).

114. See \textit{id.} at 628 (Steakley, J., on motion for rehearing) (taking judicial notice of existence of very few conflicts between surface and mineral owners on more than 378,000 oil and gas wells operating in Texas and noting “usual and customary” practice of oil and gas operators is to “take due consideration” of servient surface owner uses; examples are Amerada’s and Adobe’s conduct in this very case); see also Ronald W. Polston, \textit{Surface Rights of Mineral Owners—What Happens When Judges Make Law and Nobody Listens?}, 63 N.D. L. Rev. 41, 63-67 (1987) (surveying severed oil and gas disputes in Michigan and Oklahoma and finding that in both states, general agreement exists that oil industry should, and routinely does, pay compensation for surface damages above and beyond compensation bargained for in severance documents).
wave” of conveyance reinterpretation foreseen by the dissent.\textsuperscript{115} If the Jones decision did not generate a stir in the realm of Texas oil and gas severances, however, it certainly has given rise to a nationwide wave that is sweeping away the old reasonably necessary test and replacing it with the accommodation doctrine.

\textbf{b. The wave begins}

In \textit{Flying Diamond Corp. v. Rust},\textsuperscript{116} Utah followed Texas’ lead by adopting the accommodation doctrine in the context of an oil and gas versus agriculture dispute. Flying Diamond, the mineral owner, wanted to build a road across the surface owner’s clover and alfalfa fields to access its oil well.\textsuperscript{117} Rust, the surface owner, suggested that the road enter his land from the north to minimize surface damage and not interfere with land irrigation.\textsuperscript{118} Flying Diamond considered Rust’s suggestion but proceeded to build the road coming in from the east, which used six acres of farmland and prevented the irrigation of another fifteen acres.\textsuperscript{119} The court held Flying Diamond liable for the value of the twenty-one acres of land rendered unusable for agricultural purposes, and for the crops thereon, because an alternate, less damaging route for the access road existed but was not used.\textsuperscript{120}

To reach this conclusion, the court reasoned that each severed estate holder “should have the right to the use and enjoyment of his [or her] interest in the property to the highest degree possible not inconsistent with the rights of the other.”\textsuperscript{121} To define the meaning of “not inconsistent with the rights of the other,” the court cited Jones for the proposition that a mineral owner should use alternative methods to minimize damage to the fee holder, although he or she need only use alternatives deemed “reasonable and practicable under the circumstances.”\textsuperscript{122} This language seemingly indicates Utah’s acceptance of the accommodation doctrine, but the court

\textsuperscript{115} See Jones, 470 S.W.2d at 626 (McGee, J., dissenting) (stating that “[t]he oil and gas lease becomes a mere letter in the sand, to be washed away by the tidal wave which will be caused by the majority holding”).
\textsuperscript{116} 551 P.2d 509 (Utah 1976).
\textsuperscript{117} Flying Diamond Corp. v. Rust, 551 P.2d 509, 511 (Utah 1976).
\textsuperscript{118} Id.
\textsuperscript{119} Id.
\textsuperscript{120} Id. at 512.
\textsuperscript{121} Id. at 511.
\textsuperscript{122} Id. Interestingly, Utah is careful to use the term “fee holder” rather than “surface owner” to indicate the owner of the “surface estate.” Id. The terms “surface owner” and “surface estate” are widely used but are problematic because they fail to convey that the surface owner’s interest is a remainder interest in many cases, in that once mineral extraction terminates, the surface estate will again extend from the depths into the sky. See Fox, \textit{supra} note 5, at 818 (highlighting imprecise use of term “surface estate”). Thus “fee holder” is a
failed to delineate the parameters Texas used to confine the doctrine. The opinion does not mention the consequences of higher costs for alternate mining methods, nor does it clarify which party must introduce evidence of alternate uses.123 Presumably, Rust established the feasibility and impact of the alternate road at trial, and perhaps the court therefore decided that the surface owner’s burden of proof requirement had been fulfilled. Significantly, the court explicitly examined the magnitude of harm suffered by Rust and did not analyze Flying Diamond’s reasons for building the road where it did.124 This consideration of surface owner concerns is sufficient to establish the court’s analysis as something more than the reasonably necessary test, because that test focuses solely on mineral owner options.125 Thus Utah has adopted the accommodation doctrine, albeit in a somewhat equivocal fashion.

c. Point of clarification

North Dakota also followed Texas’ lead, but the state adopted a clearer Texas-style accommodation doctrine than did Utah. In Hunt Oil Co. v. Kerbaugh,126 the North Dakota Supreme Court explicitly adopted the accommodation doctrine set forth in Getty Oil Co. v. Jones.127 In the case, Kerbaugh, the surface owner, failed to provide evidence that reasonable alternatives to seismic mapping existed for Hunt Oil, the mineral owner, to use in exploring for oil.128 Kerbaugh proved only that Hunt Oil’s seismic activity disrupted the flow of a spring he used for domestic and agricultural purposes and left open holes and debris on his property.129 The Flying Diamond decision had implied that these factors should be weighed when de-
termining accommodation,130 so the court in Hunt Oil took action to clarify the analysis. Because a "pure balancing test is not involved under the accommodation doctrine where no reasonable alternatives are available,"131 the court refused to consider Kerbaugh's harm in deciding that Hunt Oil would not be required to accommodate Kerbaugh's surface uses.132 The court made clear that only when alternatives are shown to exist is a balancing of the mineral and surface owners' interests mandated.133 In the absence of such a showing, the mineral owner's implied access easement will expand to allow the reasonably necessary mining use.

d. Prospective surface uses

In its purest form, the accommodation doctrine protects a surface owner's existing surface uses only.134 Arkansas has taken the doctrine a step farther, however, by using it to protect a surface owner's proposed surface use. In Diamond Shamrock Corp. v. Phillips,135 the Arkansas Supreme Court awarded damages to the Phillipses, surface owners, because Diamond Shamrock, the mineral owner, drilled a gas well on the precise location the Phillipses had selected for their

130. See supra notes 123-24 and accompanying text (noting court's focus in Flying Diamond on surface owner harm in accommodation analysis that does not clearly delineate doctrinal parameters, thereby leaving impression that accommodation is simply balancing of surface and mineral owner circumstances, whether or not, perhaps, surface owner has carried burden of proving existence of reasonable alternative mining methods).
131. Hunt Oil, 283 N.W.2d at 137.
132. Id.
133. See id., stating:
[A] pure balancing test is not involved under the accommodation doctrine where no reasonable alternatives are available. Where alternatives do exist, however, the concepts of due regard and reasonable necessity do require a weighing of the different alternatives against the inconveniences to the surface owner. Therefore, once alternatives are shown to exist a balancing of the mineral and surface owner's interest does occur.

134. See Getty Oil Co. v. Jones, 470 S.W.2d 618, 622 (Tex. 1971) (stating that accommodation may be required "where there is an existing use by the surface owner" that would be impaired) (emphasis added); id. at 627-28 (holding that "in determining the issue of whether a particular manner of use of the dominant mineral estate is reasonable or unreasonable, we cannot ignore the condition of the surface itself and the uses then being made by the servient surface owner") (emphasis added). The phrase "uses then being made" underscores that accommodation applies to current surface uses only. An authority in the field of oil and gas law has summarized the accommodation doctrine (in its purest form) as follows:

[W]here a severed mineral interest owner or lessee asserts rights to use of the surface that will substantially impair existing surface uses, the mineral owner or lessee must accommodate the surface uses if he [or she] has reasonable alternatives available. . . . The accommodation principle is limited by three requirements: (1) there must be an existing surface use; (2) the proposed use must substantially interfere with the existing surface use; and (3) the lessee must have reasonable alternatives available.

Lowe, supra note 97, at 181-82 (citing Jones).
135. 511 S.W.2d 160 (Ark. 1974).
retirement home.\footnote{Diamond Shamrock Corp. v. Phillips, 511 S.W.2d 160, 161, 164 (Ark. 1974).} Diamond Shamrock had agreed to drill the well elsewhere and had filed public notices to that effect, but for unspecified reasons the company ultimately drilled exactly where it had promised it would not.\footnote{See \textit{id}. at 162 (discussing two notices drillers are legally required to file in Arkansas: first, notice of intent to drill accompanied by plat showing proposed location of well, and second, completion report upon consummation of well; Diamond Shamrock filed both notices and each showed location of well in pasture behind Phillipses' homesite, but actual well was drilled directly on homesite). If the drilling easement in this situation is considered to be an easement implied by necessity, then typically the servient estate owner is allocated the first chance to select the right-of-way location. If the servient and dominant estate owners do not agree on easement placement, then a court must settle the issue. See \textit{Hancock v. Henderson}, 202 A.2d 599, 603 (Md. 1964) (holding that location of easement implied by necessity may be decided by court in absence of agreement between parties in manner least burdensome to servient tenement); \textit{Higby Fishing Club v. Atlantic City Elec. Co.}, 79 A. 326, 326-27 (N.J. 1911) (asserting court's jurisdiction to determine parties' rights by locating easement if parties cannot agree on easement placement). Ostensibly, the parties in this case had agreed on the location of the oil well. See \textit{Diamond Shamrock}, 511 S.W.2d at 161 (reciting Mr. Phillips' testimony that Clovis Moody, Diamond Shamrock official who died before trial, had assured him that well could be drilled in pasture behind homesite). Possibly, communications between various Diamond Shamrock employees could have gone awry, especially in light of Mr. Moody's death, because he had been the party discussing easement location with Mr. Phillips. \textit{Id}. at 164.} The court found this behavior to be unreasonable in light of the existent alternative well sites Diamond Shamrock had stated it would use and therefore awarded the Phillipses actual damages for diminution in value of their property.\footnote{See \textit{Diamond Shamrock}, 511 S.W.2d at 163-64 (reasoning that because Diamond Shamrock had inflicted permanent damage on Phillipses' homesite, measure of damages equals difference between before- and after-damage value of property, which is diminution in value measure). The court considered but declined to award punitive damages because "[g]ross negligence, without willfulness, wantonness, or conscious indifference, does not justify infliction of punitive damages," \textit{id}. at 164, and the plaintiffs here failed to establish "willfulness, wantonness, or conscious indifference" on the part of Diamond Shamrock. \textit{Id}.} The paper trail left by Diamond Shamrock made this an easy case, possibly one resolvable without the invocation of the accommodation doctrine.\footnote{See \textit{supra} note 137 and accompanying text (pointing out difference between Diamond Shamrock's stated conduct and documented actual conduct). Based on the notices and records Diamond Shamrock filed with the state, presumably the Phillipses could have won this case in a simple negligence action, and if they could have proven malicious intent or conscious indifference, they perhaps could have obtained punitive damages as well.} Nevertheless, Arkansas' expansion of the doctrine to protect future surface owner uses is doctrinally significant because it acknowledges that mining activity can seriously curtail surface rights by precluding secure surface development for the duration of potential mineral exploitation.\footnote{If a mineral developer need only accommodate existing surface uses, \textit{per Getty Oil Co. v. Jones}, then a surface owner who had planned to construct an apartment complex or a horse farm on the surface ten years into the future may not be able to do so because the mining easement either has harmed or may harm her proposed development location. If the parties have freely and knowingly agreed to such an arrangement in the severance instrument, then there is nothing unjust about this result. If the surface owners hold title under an old ambiguous conveyance document, however, and mineral development has not yet or not re-}
e. Hard mineral application

The foregoing cases demonstrate that the accommodation doctrine has gained fairly wide acceptance in the context of oil and gas drilling.\textsuperscript{141} Doctrinally there is nothing explicitly or implicitly restricting accommodation to this context, so West Virginia undertook to expand the theory’s application into the realm of coal mining. Surprisingly, West Virginia’s conception of accommodation suggests a broad doctrine favoring surface owners to a greater extent than does the Texas version. In \textit{Buffalo Mining Co. v. Martin},\textsuperscript{142} the West Virginia Supreme Court construed an 1890 severance deed to find an implied right for the mineral owner to construct electric lines on the surface.\textsuperscript{143} In reaching this result, the court described what it implied to be the mineral owner’s burden of proving reasonable necessity of a surface use, stating that the burden becomes “more exacting” in the context of implied as opposed to express easements, requiring a showing “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.\textsuperscript{143}”

Id. Mining activity, especially for hard minerals, can last for many years. See \textit{Va. Code Ann. § 55.154} (Michie 1986) (creating presumption that no recoverable minerals exist under surface tract if mineral development has not taken place for 35 years); Dethloff v. Zeigler Coal Co., 412 N.E.2d 526, 529 (lll. 1980) (analyzing coal mining lease that, by its terms, lasted 25 years from date of deed execution and continued for so long thereafter as mineral owner deemed necessary to extract all of coal, \textit{cert. denied}, 451 U.S. 910 (1981); Henderson v. Virden Coal Co., 78 Ill. App. 437, 442-46 (1898) (enforcing extreme 999-year lease in coal mining context). The Model Act itself contemplates that “ongoing mineral development” can last for upwards of 30 years beyond the point at which initial development ceases. See \textit{infra} notes 202, 223 and accompanying text (quoting Model Act’s definitional language for “ongoing mineral development”).

\textsuperscript{141} See \textit{supra} note 89 (listing Texas, Utah, North Dakota, Arkansas, West Virginia, Louisiana, and New Mexico as states adopting some form of accommodation doctrine in oil and gas context); see also \textit{Mingo Oil Producers v. Kamp Cattle Corp.}, 776 P.2d 736, 742 (Wyo. 1989) (citing \textit{Getty Oil Co. v. Jones} in support of proposition that Texas jurisprudence has consistently favored dominance of mineral estate and positing that Texas law in this area is not essentially different from developed Wyoming law). This statement may represent Wyoming’s adoption of the accommodation doctrine, although if so, the state is using it to provide the surface owner continuing damages from the mineral owner so long as mineral development persists, rather than requiring the mineral owner to use alternative mining methods. \textit{Mingo Oil}, 776 P.2d at 742. In this sense Wyoming’s “accommodation doctrine” functions more like a surface damage statute than like the accommodation doctrine. See \textit{infra} notes 176-80 and accompanying text (explaining mechanics of surface damage acts).

\textsuperscript{142} 267 S.E.2d 721 (W. Va. 1980).

\textsuperscript{143} Buffalo Mining Co. v. Martin, 267 S.E.2d 721, 725-26 (W. Va. 1980).
This requirement essentially makes the surface owner dominant because presumably the mineral owner will not be able to use an implied easement if he or she fails to show that it causes an insubstantial burden to the surface owner. The court did not carry the analysis through, however, because the surface owners did not raise the issues of undue burden and reasonable necessity at trial.

Nevertheless, by removing the burden placed on surface owners to show the availability of alternative mining methods, West Virginia’s adaptation of the accommodation doctrine discards the sole mechanism intended to maintain mineral estate dominance under accommodation theory and concomitantly allows the surface estate to become dominant.

It is not clear whether West Virginia intended this result, but it is nevertheless significant that an accommodation doctrine of sorts has gained the approval of an eastern state in a hard minerals context and that Jones has been cited favorably under those circumstances. Importantly, the court notes that “[w]e do not, nor do other courts, make a distinction between the extent of the right to surface use under coal severance deeds and oil and gas or other mineral severances.”

The Model Act, perhaps following the lead of the West Virginia court, similarly does not dis-
criminate on the basis of mineral context when determining the relevance of accommodation.\footnote{149}{See infra note 202 (quoting Model Act's broad definition of "mineral" as including gas, oil, coal, sand and gravel, building stone, gemstone, clay, ores, steam and other geothermal resources, etc., and subjecting excavation or harnessing of all such substances to Act's accommodation doctrine).}

B. Statutory Developments

Before turning to an analysis of the Model Act, a brief survey of recent legislative developments that affect the rights and obligations of surface and mineral owners is in order. Many states have opted to approach severed ownership disputes via legislation rather than through common law change, thereby precluding, perhaps, more wide-ranging acceptance of the accommodation doctrine.\footnote{150}{Cf. Richard A. Epstein, The Social Consequences of Common Law Rules, 95 Harv. L. Rev. 1717, 1717-22 (1982) (arguing that legislation is much more efficient and effective way to achieve social change than is common law). Because adoption of a Texas-style accommodation doctrine may represent a dramatic change for states previously operating solely under the reasonably necessary test, courts may be reluctant to "legislate" the new theory, and thus legislatures have stepped in to provide solutions for severance disputes.}
The legislation can be organized into five categories: consent statutes, lapse statutes, methods statutes, reclamation statutes, and surface damage acts. Each of these categories will be briefly summarized and the states adopting them noted. Familiarity with these efforts is important in a comparative sense because each type of statute presents dispute resolution theories and procedures that the Commissioners had available for incorporation into the Model Act.

1. Consent statutes

First, many states have singled out surface mining, a particularly controversial mining method, for special legislative treatment via "consent" statutes. Under the typical consent statute, an owner of severed surface-minable minerals must obtain the consent of the surface owner before mining can proceed.\footnote{151}{See, e.g., Ala. Code § 9-16-5(2) (1987) (providing that surface mining permit application shall contain statement that applicant has right by "legal estate owned" to surface mine land, and shall explicitly reference source of that right); Colo. Rev. Stat. § 34-82-112(2)(d) (1984) (stipulating that application for mining permit shall include source of applicant's legal right to enter and mine land); Ill. Ann. Stat. ch. 96 1/2, para. 4506, § 5(a) (Smith-Hurd Supp. 1992) (stating that application shall contain statement that applicant has right and power by legal estate to engage in surface mining); Md. Nat. Res. Code Ann. § 7-6A-07(d)(i) (Supp. 1991) (requiring that surface mining permit application be accompanied by agreement signed by applicant and landowner, if landowner is different person than applicant, granting state employees and subcontractors right of entry onto land to restore land surface if miner fails to do so); Mo. Ann. Stat. § 444-550.1(2) (Vernon Supp. 1992) (requiring that application for strip mining permit include identification of source of applicant's legal right to strip mine land); Ohio Rev. Code Ann. § 1513.07(B)(2)(a)(i) (Anderson Supp. 1991) (stating that coal mining permit application must contain names and addresses of all owners of surface and mineral properties to be mined); S.D. Codified Laws Ann. § 45-6B-6(11) (1983) (stating that...
utes modify the common law dominance doctrine by giving surface owners the power to gainsay the surface mining of their lands. Several states with powerful mining lobbies have therefore struck down consent statutes as unconstitutional takings of property and impairments of contracts, stating that the statutes' "primary purpose and effect . . . is to change the relative legal rights and economic bargaining positions of many private parties under their contracts rather than achieve any public purpose."152 Many other states continue to maintain consent statutes, however, as a means of "promoting fairness and understanding between the parties."153

2. Lapse statutes

Another type of statute frequently attacked on constitutional grounds is the "lapse" or "dormant mineral" statute.154 Legislation for mining permit must include written consent of applicant and of all others necessary to grant legal access to property; Tenn. Code Ann. § 59-8-205(a)(1)(F) (Supp. 1992) (providing that surface mining permit application must include identification of source of operator's legal right to enter and so mine land); Tex. Nat. Res. Code Ann. § 131.133(6) (West 1978) (requiring permit application to include information concerning applicant's legal right to surface mine affected land); W. Va. Code § 22A-3-9(a)(1)(B), (a)(2) (Supp. 1992) (stating that surface mining permit must contain names and addresses of surface as well as mineral owners, and that all record owners of surface and subsurface areas contiguous to proposed mining area must be notified of details of such mining); Wyo. Stat. § 35-11-406(b)(xi) (Supp. 1992). The Wyoming statute contains typical consent language requiring a surface mining permit application to include "an instrument of consent from the resident or agricultural landowner, if different from the owner of the mineral estate, granting the applicant permission to enter and commence [the] surface mining operation, and also written approval of the applicant's mining plan and reclamation plan." Wyo. Stat. § 35-11-406(b)(xi) (Supp. 1992). For a discussion of Wyoming's consent statute, see Thomas Reese, Comment, The Surface Owner's Easement Becomes Dominant: Wyoming's Surface Owner Consent Statute, 16 Land & Water L. Rev. 541 (1981) (discussing constitutionality of Wyoming's surface owner consent law from perspective of takings law, federal preemption (supremacy clause), and equal protection doctrine).

152. Department for Natural Resources & Envt. Protection v. Number 8 Ltd., 528 S.W.2d 684, 687 (Ky. 1975) (striking down Kentucky consent statute as unconstitutional under takings and impairment of contracts clauses of United States and Kentucky Constitutions). The Kentucky statute required that a surface mining permit application contain:

[A] statement of consent to have strip mining conducted upon the area of land described in the application for a permit. The statement of consent shall be signed by each holder of a freehold interest in such land. . . . No permit shall be issued if the application therefor is not accompanied by the statement of consent.


153. Dycus, supra note 15, at 886; see, e.g., Cogar v. Sommerville, 379 S.E.2d 764, 767-70 (W. Va. 1989) (applying consent statute requiring surface owner consent to mining within 300 feet of surface owner-occupied dwelling unit to decades-old broad form deed that waived surface damages and holding that statute overrides deed); see also Mansfield, supra note 44, at 78 (arguing that consent statutes make surface owner "joint venturer" with mineral owner).

154. The statutes are also labeled "merger" statutes, Truhe, supra note 11, at 415-16, or "marketable title" statutes, Smith, supra note 7, § 16.06[2][b], at 16-40 to -41. Prior to the Supreme Court's decision in Texaco, Inc. v. Short, see infra note 157, lapse statutes had been frequently struck down as unconstitutional takings and due process violations. See, e.g., Wil-
tutes enact these statutes to allow ownership of mineral estates to lapse after a specified period of nonuse and revert to either the surface owner or the state.\footnote{155} States differ in specifying the parameters of prescribed "use": "use" variously means actual or attempted mineral development, payment of taxes, rents, or royalties, periodic registration of ownership interests with the county clerk, or even simply the sale of the mineral estate.\footnote{156} In general, lapse statutes are meant to resolve uncertainties of title created by state or abandoned mineral claims and to otherwise encourage mineral development for the general welfare of a state's citizens.\footnote{157} The Supreme Court upheld Indiana's mineral lapse statute in\textit{Texaco, Inc. v. Short} \footnote{158} by affirming the notion that government can condition the retention of a protectible property interest on the performance of

\begin{quote}

Joshua reverts to surface owner; nor paid taxes due on such rights for 7-year period; possession if owner of mineral rights neither worked nor attempted to work mineral rights ing 30-year lapse period for establishing marketable title); GA. termination of dormant mineral rights); as violative of due process and contract clauses to extent statute operated retroactively).

Heath, was provided to noncomplying mineral owner before property became forfeited); Wheelock v. Heath, 272 N.W.2d 768, 771-74 (Neb. 1978) (holding Nebraska lapse statute unconstitutional as violative of due process clause because notice-by-publication provisions were inadequate and no hearing was provided to noncomplying mineral owner before property became forfeited); CONTOS v. HERBST, 412 N.E.2d 272 (ILL. 1980) (mandating 20-year period within which severed mineral estate must be used, or else reverts to surface owner); NEB. REV. STAT. § 57-229 (1988) (asserting that severed mineral interest will be deemed to be abandoned if it is unused for 25-year period) (held unconstitutional under due process and contract clauses of United States and Nebraska Constitutions to extent operates retroactively in Wheelock v. Heath, 272 N.W.2d 768 (Neb. 1978)); N.C. GEN. STAT. §§ 1-42.1 to -42.9 (1983 & Supp. 1992) (setting forth parameters for extinguishment of variety of "ancient" mineral rights when such interests are not being mined, are adversely possessed, or are not listed for tax purposes for 10- to 50-year periods); OHIO REV. CODE ANN. § 5301.56 (Anderson Supp. 1991) (specifying factors used to determine whether mineral interest will be deemed abandoned and vested in owner of surface); TENN. CODE ANN. § 66-5-108(c) (Supp. 1991) (establishing procedures for extinguishment and reversion of mineral interests to owner of surface when such interests are unused for 20-year period). The Indiana law cited above contains typical lapse language, which states:

\begin{quote}

Any interest in coal, oil and gas, and other minerals, shall, if unused for a period of 20 years, be extinguished, unless a statement of claim is filed . . . and the ownership shall revert to the then owner of the interest out of which it was carved.
\end{quote}


\footnote{155} See Smith, supra note 7, § 16.06[2][b], at 16-46 (noting that Michigan and Ohio statutes treat sale, leasing, mortgaging, or other transfer by recorded instrument as "use"); Joshua E. Teichman, Comment, \textit{Dormant Mineral Acts and Texaco, Inc. v. Short: Undermining the Takings Clause}, 32 Am. U. L. Rev. 157, 162 (1982) (describing Indiana statute's definition of "use" as including actual development of minerals or payment of rents, royalties, or taxes).

\footnote{156} See Texaco, Inc. v. Short, 454 U.S. 516, 524 n.15 (1982) (quoting lower court opinion explaining that purposes of Indiana lapse statute are driven in part by dependence of state on limited fossil fuel resources).

\footnote{157} 454 U.S. 516 (1982).
acts indicating intent to retain that interest.\textsuperscript{159} Despite the sanction of the Supreme Court, lapse statutes are disfavored by some commentators as divestitures of valuable mineral property rights without due process of law.\textsuperscript{160} Only one state has held its lapse statute unconstitutional since the \textit{Short} decision,\textsuperscript{161} however, which indicates the strength of the public policy concerns supporting the statutes.

3. Mining methods statutes

A few states have attempted to resolve deed interpretation disputes by legislatively dictating a standard rule of construction: in broad form deeds and other ambiguous conveyance instruments, allowable mining methods are restricted to those available at the time the conveyance was executed.\textsuperscript{162} Thus if a mineral severance occurred in 1892 under a broad form deed and the mineral owner wants to longwall mine in 1992, the mineral owner will not be able to do so because longwall mining was not a recognized mining method in 1892.\textsuperscript{163} This legislatively imposed rule of construction operates on the premise that the parties executing a mineral deed in 1892 could not have contemplated the destructive impact modern mining methods have on surface estates and thus could not have had the intent to allow such use of the surface.\textsuperscript{164} Kentucky's first

\begin{itemize}
\item \textsuperscript{159} Texaco, Inc. v. Short, 454 U.S. 516, 525-30 (1982).
\item \textsuperscript{160} See Truhe, \textit{ supra} note 11, at 416 (stating that after \textit{Short} decision, practical effect of lapse statutes is to render mineral property rights null).
\item \textsuperscript{161} See Riddleberger v. Chesapeake W. Ry., 327 S.E.2d 663, 664-68 (Va. 1985) (holding Virginia lapse statute unconstitutional because it only applied to certain populations west of Blue Ridge Mountains; condition had no rational relationship to presence of minerals and thus was arbitrary).
\item \textsuperscript{162} See Ky. REV. STAT. ANN. §§ 381.930-.945 (Baldwin 1984) (providing that absent express delineation of allowable mining methods in coal severance instruments, intent of parties will be construed in favor of position that coal may only be extracted by methods commonly employed in Kentucky at time instrument was executed), \textit{held unconstitutional} in Akers v. Baldwin, 736 S.W.2d 294, 309-10 (Ky. 1987), \textit{reinstated via constitutional amendment}, Ky. CONST. § 19(2) (1988); TENN. CODE ANN. § 66-5-102 (1982) (establishing rule of construction for coal severance contracts that do not specify allowable methods of coal extraction: courts must presume that parties to such contracts intend that minerals be mined only in fashion commonly used in Tennessee at time contract was executed) (held constitutional in Doochin v. Rackley, 610 S.W.2d 715, 719-20 (Tenn. 1981)).
\item \textsuperscript{163} See Ball v. Island Creek Coal Co., 722 F. Supp. 1370, 1372 (W.D. Va. 1989) (deciding coal severance case in part on geologist's affidavit, furnished by plaintiff and undisputed by defendant, that longwall mining was unknown in United States in 1908 and was not established until many decades later). \textit{But see} Culp v. Consol Penn. Coal Co., No. 87-1688, 1989 WL 101553, at *8, *11-12 (W.D. Pa. May 4, 1989) (asserting that longwall mining has been used in Pennsylvania and around world for at least past century and supporting assertion with quotes from multiple scholarly treatises).
\item \textsuperscript{164} See, e.g., Barker v. Mintz, 215 P. 534, 534-36 (Colo. 1923) (holding that severance deed expressly granting mineral owner right to use as much of surface as is reasonably necessary to sever coal does not give mineral owner right to strip mine, because "use" cannot be construed to mean "destroy"); Skivolocki v. East Ohio Gas Co., 313 N.E.2d 374, 378 (Ohio
attempt at enforcing a statute of this type resulted in a court decision that the law unconstitutionally violated the separation of powers doctrine by interfering with the judiciary's role in interpreting conveyance instruments.\textsuperscript{165} Kentucky voters later amended their state constitution to include the text of the methods act, in effect trumping the state supreme court's decision to the contrary,\textsuperscript{166} and the federal constitutionality of that amendment has been upheld, at least in part.\textsuperscript{167} One other state operates under a similar act that has passed state constitutional muster,\textsuperscript{168} but this approach to resolving severance disputes is much criticized and has not gained wide acceptance.\textsuperscript{169}


\textsuperscript{166.} In 1988, Kentucky voters participated in a state referendum on coal mining conflicts and passed, by 83% of the vote, a constitutional amendment that retroactively imposed a special rule of construction on coal conveyances. Bratt & Greenwell, \textsuperscript{supra} note 10, at 9-10. In the absence of express conveyance language or surface owner permission, the amendment limits construable mining methods to those commonly known at the time the mineral estate is severed from the surface estate. Ky. Const. § 19(2). The amendment provides:

\begin{quote}
In any instrument heretofore or hereafter executed purporting to sever the surface and mineral estates or to grant a mineral estate or to grant a right to extract minerals, which fails to state or describe in express and specific terms the method of coal extraction to be employed, or where said instrument contains language subordinating the surface estate to the mineral estate, it shall be held, in the absence of clear and convincing evidence to the contrary, that the intention of the parties to the instrument was that the coal be extracted only by the method or methods of commercial coal extraction commonly known to be in use in Kentucky in the area affected at the time the instrument was executed, and that the mineral estate be dominant to the surface estate for the purposes of coal extraction by only the method or methods of commercial coal extraction commonly known to be in use in Kentucky in the area affected at the time the instrument was executed.
\end{quote}

Ky. Const. § 19(2). This language is identical to the language of the statute struck down in Akers, 736 S.W.2d at 308; its enactment is a clear repudiation of that decision. It seems unlikely that Kentuckians really want to limit miners to the use of turn-of-the-century mining methods only, but by amending their state constitution in this fashion, the voters sent a clear message that they were unhappy with the courts allowing large-scale surface and mountaintop mining to go forward under century-old mineral conveyances.

\textsuperscript{167.} See United States v. Stearns Co., 873 F.2d 134, 136 (6th Cir. 1989) (remanding case to U.S. district court for determination of Kentucky methods act amendment's (Ky. Const. § 19(2)) validity under U.S. Constitution), appeal after remand, 949 F.2d 223, 225-26 (6th Cir. 1991) (observing that U.S. district court had determined on remand that methods act amendment was valid under U.S. Constitution on particular facts of case, and declining to reconsider that decision or consider amendment's constitutionality in toto).

\textsuperscript{168.} See \textit{supra} note 162 (noting that Tennessee mining methods statute was held unconstitutional).

\textsuperscript{169.} See, e.g., Fox, \textit{supra} note 5, at 831 n.152 (stating colorfully that in context of allowable mining methods, "[c]ourts should not be Luddites"). Luddites were a "group of early Nine-
4. Reclamation statutes

The Federal Surface Mining Control and Reclamation Act (SMCRA) and analogous state laws introduce principles of formal land use planning into the surface coal mining context by compelling miners to submit land reclamation plans to government before beginning surface mining. SMCRA provides that land affected by mining will be restored to "a condition capable of supporting the uses which it was capable of supporting prior to any mining, or higher or better uses of which there is reasonable likelihood." Thus surface miners must backfill mining pits to the land's original contour, restore topsoil and replant native flora, and replace original groundwater sources and flows. Clearly, federal and state SMCRAs modify the traditional dominance doctrine for the benefit of surface owners, because without the statutes, mineral owners have no obligation to repair or restore the damage they cause in the "reasonable" exercise of their mining easements.

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172. See Lee W. Saperstein, An Analysis of U.S. Surface Mining Law and Its Attitude Toward Land Use Planning, 5 J. Min. L. & Pol’y 235, 235 (1989-1990) (noting that SMCRA’s introduction of land use planning principles into coal mining context (concepts such as designation of lands as unsuitable for mining of coal or other minerals, provision for reclamation of mined areas in conformance with area use plan, etc.) was notable because body of United States mining law previously contained few planning precepts).


174. Id. § 515, 30 U.S.C. § 1265; Saperstein, supra note 172, at 235.

175. See supra note 109 and accompanying text (explaining that mineral owner is liable for only that use of mining easement deemed unreasonable and unnecessary, as judged by what is usual, customary, and according to standards of industry); see also Palmore & McGuire, supra note 13, §§ 6.05(2)-.07, at 6-28 to -41 (analyzing “substantial” changes in common law rules induced by enactment of SMCRA and equivalent state programs).

SMCRA benefits the general public as well as surface owners. One of the central congres-sional findings driving enactment of SMCRA was as follows:

[M]any surface mining operations result in disturbances of surface areas that burden and adversely affect commerce and the public welfare by destroying or diminishing the utility of land for commercial, industrial, residential, recreational, agricultural, and forestry purposes, by causing erosion and landslides, by contributing to floods, by polluting the water, by destroying fish and wildlife habitats, by impairing natural beauty, by damaging the property of citizens, by creating hazards dangerous to life and property[,] by degrading the quality of life in local communities, and by counter-
5. Surface damage acts

Finally, a number of state legislatures have opted to enact surface damage statutes as a means of injecting fairness into the mineral estate dominance doctrine. Typically, these statutes hold mineral developers strictly liable for damage to land surface and structures caused by mining, regardless of the allocation of risk set forth in the severance instrument and despite the fact that at common law a mineral owner incurred no such obligation.176 In part, surface dam-

- acting governmental programs and efforts to conserve soil, water, and other natural resources . . . .
- SMCRA § 101(c), 30 U.S.C. § 1201(c) (1988). But see Huffman, supra note 15, at 203 (arguing that SMCRA’s mandatory reclamation procedures will likely lead to allocational inefficiencies in most cases).

176. See, e.g., ILL. ANN. STAT. ch. 96 1/2, paras. 9651-9657 (Smith-Hurd Supp. 1992) (providing for reasonable compensation of surface owners by oil and gas developers for damages caused to surface by drilling and production operations); IND. CODE ANN. §§ 32-5-7-1 to -6 (Burns 1980 & Supp. 1992) (establishing that any transfer of oil and gas subsurface interest rights also transfers express rights and privileges including accountability to surface owner for actual damage to surface resulting from subsurface operations); MONT. CODE ANN. § 82-10-504 (1991) (protecting surface owners by requiring oil and gas developers to compensate surface owners for lost land value, lost agricultural production, and lost value of surface improvements caused by drilling operations); N.D. CENT. CODE §§ 38-11.1-04 (1987) (ensuring that owners of surface will be compensated for damage to or interference with their property and improvements thereon resulting from oil and gas development) (upheld against constitutional challenge in Murphy v. Amoco Prod. Co., 729 F.2d 552, 554-60 (8th Cir. 1984)); N.D. CENT. CODE § 38-18-07.1 (1987) (stating that unless provided for in lease, mineral developer shall annually compensate surface owner in amount equal to damages sustained to agricultural activity as result of mining activity); OHIO REV. CODE ANN. § 1509.07.2 (Anderson 1986) (requiring oil or gas well owners to restore land surface within areas disturbed by drilling and production); OKLA. STAT. ANN. tit. 52, §§ 318.1-9 (West 1991 & Supp. 1993) (requiring that oil and gas developers be responsible for plugging wells and for negotiating with surface owners for payment of any damages caused by drilling operations) (upheld against constitutional challenge in Davis Oil Co. v. Cloud, 766 P.2d 1347, 1351 (Okla. 1988)); S.D. CODIFIED LAWS ANN. §§ 45-5A-1 to -11 (1989) (mandating mineral developer payment of damages to surface owners for injury to property or improvements thereon and for interference with use of property due to mineral development); TENN. CODE ANN. § 60-1-604 (1989) (obliging oil and gas developers to compensate surface owners for specified items including lost use of land, damages to crops and water supplies, costs of personal property repair, and diminution in value of surface lands and other property); W. VA. CODE § 22B-2-3 (1985) (requiring oil and gas developers to compensate surface owners for losses incurred by surface owners as result of drilling operations). The North Dakota statute contains typical surface damage language pertaining to oil and gas operations, but is equally relevant in any mining context:

The mineral developer shall pay the surface owner a sum of money equal to the amount of damages sustained by the surface owner . . . for loss of agricultural production and income, lost land value, lost use of and access to the surface owner’s land, and lost value of improvements caused by drilling operations. The amount of damages may be determined by any formula mutually agreeable between the surface owner and the mineral developer. When determining damages, consideration must be given to the period of time during which the loss occurs and the surface owner may elect to be paid damages in annual installments over a period of time; except that the surface owner must be compensated for harm caused by exploration only by a single sum payment. The payments contemplated by this section only cover land directly affected by drilling operations. Payments under this section are intended to compensate the surface owner for damage and disruption; any reservation or assignment of such compensation apart from the surface estate except to a tenant of the surface estate is prohibited.
age statutes represent a realization that the parties profiting from mining should bear the cost of surface damages, in contradiction to common law rules grounded on the opposite assumption. In addition, these statutes represent an admission that broad form severance deeds and other standardized conveyance instruments can resemble contracts of adhesion, in that landowners commonly operate with much less information than do mining companies and thus contractual allocation of damage is frequently unfair. Surface damage statutes are another type of law often challenged on constitutional grounds, but many states uphold them as protective of economic and agricultural concerns, which are cognizably valid public purposes. The acts plainly alter the traditional relationship between mineral and surface estates by giving more power to the surface estate and by deterring wasteful mining practices, thereby encouraging equitable use of both estates.


177. See Polston, supra note 114, at 42-44 (noting natural tendency for courts to have looked to implied easement jurisprudence when creating mining access easements, but arguing that courts did not examine "whether the solution overshot the objective" by affording mineral owners greater rights than necessary to further mineral estate productivity and seemingly never considered possibility of conditioning mineral owners' right of access on obligation to pay for surface estate destroyed by mining operations). Professor Polston goes on to argue that, based on his studies of Michigan and Oklahoma severance disputes in the context of oil and gas drilling, "it is apparent that the parties who engage in the business of extracting minerals believe that the extraction industries should bear the cost of surface damages." Id. at 67.

178. See Clarence A. Brimmer, The Rancher's Subservient Surface Estate, 5 LAND & WATER L. REV. 49, 51 (1970) (explaining that disturbing inequities resulting from mineral conveyances arise partially because of hasty execution of deeds). Judge Brimmer argues that severance inequities result also in part because of "the appalling practical inequality of the negotiators who produced the situation." That is,

[o]n the one hand is an urbane, diplomatic landman, well schooled in the details of his lease form and versed in his [mineral] landman's handbook, who is the product of a hundred negotiating sessions this year; and on the other hand is a rancher who at worst may be negotiating his first lease in a lifetime and who probably may have leased the same tract a few years before on a similar form and did not get hurt because there was no development.

Id.

179. See, e.g., Murphy v. Amoco Prod. Co., 729 F.2d 552, 554-60 (8th Cir. 1984) (upholding North Dakota surface damage statute in face of challenges on due process, takings, and equal protection grounds because statute is substantially related to legitimate state interest of protecting state agriculture and economic interests). The court held further that the surface damage statute did not destroy mineral owners' property rights; instead, it merely imposed economic burdens on the mineral developer. Id. at 558-59.

180. See, e.g., TENN. CODE ANN. § 60-1-602 (1989) (stating that "the exploration for and development of oil and gas reserves must coexist with the equal right to the use, agricultural or otherwise, of the surface of land within the state of Tennessee"). Requiring mineral owners to pay damages can serve as an effective deterrent to wasteful easement use. See Murphy, 729 F.2d at 555 (explaining cost-benefit analysis mineral owners might engage in when confronted with duty to pay for surface damage).
The Model Act is a form of surface damage statute, although it falls far short of imposing strict liability on mineral owners for all mining-induced surface damage. An early draft of the Act espoused three goals motivating enactment: (1) minimization of harm suffered by surface estate owners, (2) prevention of potential loss of the surface that may harm the general public by depleting available land for agricultural or other beneficial use, and (3) amelioration of unsettled disputes between surface and mineral estate owners so as to avoid undue impact on mineral development itself. The current version of the Act is not so expressly solicitous of surface estate rights, but these goals are nevertheless representative of the general concerns motivating states to adopt surface damage statutes.

III. THE MODEL ACT

The Model Act is synthesized from statutory consent, reclamation, and surface damage principles and common law accommodation theory. Consent ideas are extant in provisions requiring notification and agreement, acquiescence, or arbitration of proposed mineral or surface development; reclamation theory interjects the wisdom of advance planning into severance disputes; surface damage tenets mandate equitable allocation of development costs between parties; and accommodation precepts require co-

181. See infra notes 282-88 and accompanying text (describing Model Act’s provision of reasonable rental and consequential damages only (no compensatory or punitive damages) for mineral owner nonaccommodation of surface owner surface uses or improvements).


183. See infra notes 190-201 and accompanying text (arguing that Act’s stated policy of preserving opportunities for optimum development and use of all surface and mineral resources is contradicted by Act’s promulgation of mineral estate dominance doctrine).

184. See infra notes 242-54 and accompanying text (providing text of Act’s sections dealing with indemnification of proposed mining use (§ 4) and proposed surface uses (§ 5)). The Act does not incorporate consent jurisprudence per se, in that one of the parties does not have to obtain the consent of the other to proceed, but the Act does provide for notification and agreement between the parties, id., which approximates consent theory.

185. See infra notes 242-54 and accompanying text (detailing Model Act provisions that allow accommodation requirements to be determined in advance). SMCRA is an important statute for the Act to emulate in that it proactively handles problems before they occur, rather than reacting to “done deals” per the common law.

186. See infra notes 282-88 and accompanying text (analyzing text of Model Act § 10 that sets forth rental and compensatory damages for mineral owner nonaccommodation of surface owner surface uses or improvements). Unfortunately, the Act’s restrictive rental value approach to allocating development costs is not as equitable as the remedy provided by surface damage statutes, which generally provide actual damage or replacement value relief for surface injuries. See supra note 176 (providing text of typical surface damage statute allowing for actual damages); see also Dycus, supra note 15, at 889-90 (arguing that “payment of money damages may not fairly compensate the surface owner who has reasonable, but conflicting, expectations concerning the use of his [or her] land”).
operation. In theory, these concepts could be forcefully amalgamated to equalize the power of the two estates, and indeed, an earlier version of the Act reflects intent to do just that. Unfortunately, the official version of the Act has been eviscerated to the point that its enactment in many states will only negligibly alter the status quo.

A. Section 1: Statement of Policy and Findings

The Model Act begins by setting forth an explicit declaration of the policy choices motivating development and enactment of the statute: "[t]he public policy of this State is to maximize the economic, cultural, and environmental welfare of the people by preserving all reasonable opportunities for optimum development and use of all surface and mineral resources." Inclusion of this declaration is refreshing in light of the tendency of state minerals statutes to leave off policy explanations. Interestingly, the drafters want to "maximize . . . economic, cultural, and environmental welfare." Considering the mathematical impossibility of maximizing three dependent variables simultaneously, this statement is per-
haps meant to suggest an ordering of priorities: economic welfare first, cultural second, and environmental third. Without explicit enunciation of precedence, a "plain meaning" argument could be advanced to support highest priority maximization of any of the factors.

Ostensibly, the Act's central policy statement values surface development on a par with mineral development. If this is true, the Act will certainly transform existing relations between surface and mineral owners. To attain this seemingly equitable goal, the Act proclaims three ancillary policies to: (1) quantify surface and mineral rights and obligations, (2) encourage accommodation, and (3) provide efficient severance dispute resolution procedures. In the interest of efficiency, the drafters were careful to protect the Act from the multitude of constitutional challenges that have plagued statutes of this sort. This is handled by section 1(b) upon enactment, so that adoption of the Act qualifies its policies within the purview of the enacting state's police power. Strangely, this provision can be used to essentially delegate a private power of eminent domain to mineral owners for surface access use and as such will be discussed further below. it to go out of business, causing subsequent economic loss for the coal company's employees and cultural loss in the coal community's way of life. See McCoy-Elkhorn Coal Corp. v. EPA, 622 F.2d 260, 263-67 (6th Cir. 1980) (upholding Clean Air Act against constitutional challenge from low sulfur Kentucky coal company wanting to sell coal in Ohio high sulfur coal producing region; Clean Air Act required Ohio utilities to (1) burn low sulfur fuel, or (2) install flue gas desulfurization system (scrubbers); all utilities chose less expensive low sulfur option, so EPA invoked § 125 of Clean Air Act to protect local/regional coal industry, i.e., Ohio coal companies, that could only mine and produce high sulfur coal; result was that all Ohio utilities had to buy Ohio coal and install scrubbers to meet Clean Air Act requirements). Congress enacted § 125 of the Clean Air Act, 42 U.S.C. § 7425 (1988), not in response to environmental concerns, but rather out of concern for the potential economic and cultural hardships that could be inflicted on regions by the Clean Air Act, as in this example regarding the Ohio high sulfur coal industry. See 123 CONG. REC. 18,458-96 (1977) (containing Senate floor debate discussion of rationale for enacting Clean Air Act § 122, now contained in amended form at Clean Air Act § 125).

Cf. Getty Oil Co. v. Jones, 470 S.W.2d 618, 627 (Tex. 1971) (preserving mineral estate dominance even while granting surface owners' accommodation); Mansfield, supra note 44, at 70 (stating that "[t]he mineral estate remains dominant despite the fact that some moderation of the superiority of rights [has] occurred").

MODEL ACT § 1(a)(i)-(iii).

See supra notes 152-53, 154-61, 165-69, 179 and accompanying text (relating various constitutional questions raised by statutes that alter entrenched property interests).

See Model Act § 1(b). This section provides:

§ 1. Statement of Policy and Findings.

(b) The [legislative body of this State] finds that this public policy can be pursued without impairment of any constitutionally protected right of owners of severed estates through the exercise of the state's police power in the manner provided in this [Act].

Id.

See infra notes 282-88 and accompanying text (arguing that even though surface
Section 1 concludes by specifying that damages will be the sole remedy for violation of the provisions of the Act, so that injunctions or permit and license denials will not be available to hinder mineral development. After explicitly declaiming state’s policy as the utilization of “all surface and mineral resources,” this provision makes clear that the drafters intend mineral resources to be favored. Mining can never be enjoined by a surface owner under the Act, no matter how severe the anticipated mining-induced surface damage or valuable the surface use. Surprisingly, this section implicitly promulgates mineral estate dominance, in complete contradiction to the Act’s preliminary representations of estate parity.

B. Section 2: Definitions

Section 2 presents definitions of doctrinally critical parameters contained in the Act to forestall inconsistent interpretations of key provisions. Unfortunately, the drafters failed in at least three respects to clearly articulate the absolutely central definition of “accommodation.” First, the drafters did not specify, in text or in owner is able to bring suit for nonaccommodation against mineral owner, damages provided by Act are so low as to fail to deter abuse of mining access easement).  

199. MODEL Act § 1(c). The section provides:

§ 1. Statement of Policy and Findings.

(c) The [legislative body of this State] declares that the purpose of this [Act] is to provide damages as the sole remedy for violations of duties and obligations provided by this [Act] and not otherwise to limit or restrict the right of an owner of a severed mineral interest to engage in the development of minerals. This [Act] does not limit or restrict action upon or issuance of any permit, license, or approval required under other law for mineral development.

Id.

200. See id. (stating that damages are sole remedy under Act).

201. Compare MODEL Act § 1(a) (announcing support for “optimum development and use of all surface and mineral resources”) with id. § 1(c) (preserving mineral estate dominance in Act by providing no injunctive remedy for surface owner, which implicitly means mineral estate will at times take precedence over surface estate).

202. MODEL Act § 2. This section provides:

§ 2. Definitions.

(1) “Accommodation” means the exercise of mineral development rights with due regard for the rights of the surface owner as to surface use and improvements, if technologically sound and economically practicable alternative methods of mineral development exist. “Accommodate” has a corresponding meaning.

(2) “Mineral” means gas, oil, coal, other gaseous, liquid and solid hydrocarbons, oil shale, cement material, sand and gravel, road material, building stone, chemical substance, gemstone, metallic, fissionable and nonfissionable ores, colloidal and other clay, steam and other geothermal resources, and any other substance defined as a mineral by any law of this State.

(3) “Mineral developer” means the owner of a severed mineral estate or any lessee or other person who has rights of mineral development.

(4) “Mineral development” means the full range of activity, from exploration through production and reclamation, associated with the location and extraction of a mineral which will cause physical damage to the surface. The term includes (i) processing and transportation of the minerals if those operations are conducted on
comments, which party must carry the burden of pleading and proving the existence of alternative mining methods. The Act draws its definition of accommodation from Moser v. United States Steel Corp., but ironically, that case is a quiet title rather than an accommodation case. Moser affirmed the holding of Getty Oil Co. v. Jones and extended it to apply to nonspecific as well as specific mineral conveyance situations, but at no time did the court in Moser analyze the components of Jones' accommodation doctrine or create its own doctrine. Getty Oil Co. v. Jones is cited in the Act as "apply[ing] or further defin[ing] accommodation," so perhaps it is fair to assume that the drafters meant to adopt Jones' prototypical and oft-quoted analysis as the Act's own doctrine.

If that is true, however, why would Getty Oil Co. v. Royal be selected to illustrate the application of accommodation theory? This bizarre choice presents a second problem with the Act's definition of accommodation, because Royal is an inverted example of the accommodation doctrine that again does not clarify allocation of the burden of proof. The established common law accommodation doctrine applies in cases involving mineral owner utilization of the same surface tract from which the underlying mineral is extracted; and (ii) recovery of any mineral left in residue from previous extraction or processing operations.

(5) "Ongoing mineral development" means: (i) the continuation of any mineral development that is being conducted on or under the surface; (ii) additional mineral development that is identified in a work plan, pooling or unitization agreement, or other document, that has been approved by an agency responsible for regulating the mineral development; or in drilling or mining logs or other records maintained by a mineral developer; or (iii) the resumption or extension of mineral development within 30 years after the previous production stopped.

(6) "Person" means an individual, corporation, business trust, estate, trust, partnership, association, joint venture, government, governmental subdivision or agency, or any other legal or commercial entity.

(7) "Surface" means the exposed area of land, improvements on the land, subjacent and lateral support for land and structures, and any part of the underground actually used by a surface owner as an adjunct to surface use, such as root medium, groundwater, and construction footings.

(8) "Surface owner" means a person who holds an interest of record in the surface estate or a person in possession of the surface who holds an unrecorded interest in the surface estate, excluding adverse claimants without adjudicated title.

(9) Except when expressly stated otherwise, "surface use or improvement" means an existing or future surface use or improvement.

Id. 203. See id. §§ 2(1), 5(b) & cmts. (neglecting to assign burden of proof).
204. 676 S.W.2d 99, 103 (Tex. 1984); see Model Act § 2 cmts.
205. See Moser v. United States Steel Corp., 676 S.W.2d 99, 100 (Tex. 1984) (litigating claim to quiet title to ownership of uranium ore).
206. See id. at 103-04 (failing to elaborate on accommodation doctrine jurisprudence set forth in Jones).
207. Model Act § 2 cmts.
209. See Mansfield, supra note 44, at 70 & nn.163-64 (describing Royal as case stressing surface owner's right to use surface so long as no "unreasonable interference" with mineral owner's use results, and observing that decision "served notice that the Texas courts would
eral estate dominance to gain expanded access easements, while the
surface owner invokes accommodation to mitigate the dominance
document’s harsh effects.\footnote{See supra notes 100-33 and accompanying text (explaining accommodation doctrine
development in Texas and doctrine’s use and refinement in Utah and North Dakota).} In Royal, however, the surface owner was
the party wanting to change the status quo by installing gates across
the mineral owner’s long-established access roads, so the parties’
accommodation roles were flipped.\footnote{Id. at 593-94.} The court in Royal balanced
the utility of surface owner versus mineral owner conduct, and with-
out delegating the burden of showing available alternatives, decided
that it was not unreasonably inconvenient to require the mineral
owner to accommodate the surface owner’s gates.\footnote{See Model Act § 2(1) & cmts. (failing to assign burden of proof and using Royal’s
“unreasonable inconvenience” balancing test to illustrate accommodation doctrine).}

The Act’s express discussion of the balancing in Royal comprises a
third problem with its definition of accommodation.\footnote{See supra notes 109-10, 126-33 (delineating parameters of accommodation doctrine).} Getty Oil Co. v. Jones and Hunt Oil Co. v. Kerbaugh make clear that a balancing of
surface and mineral owner options does not take place until after
the surface owner has successfully demonstrated the existence of
reasonable mining method alternatives.\footnote{That is, while the established accommodation doctrine involves mineral owner ac-
commodation of surface owner existing surface uses, the drafters apparently wanted to ensure
surface owner accommodation of existing (and future) mineral owner surface uses. Thus,
despite the fact that Royal is not truly an accommodation doctrine case, see supra note 209, the
drafters utilized the case because it almost matched the paradigm they wanted to establish. See Ronald W. Polston, Oil and Gas Law Developments, 10 E. Min. L. Inst. § 21.03[3], at 21-11 (1989) (stating, with respect to preliminary version of Model Act, that “[t]o give an appear-}
application of accommodation theory therefore pervades the Act, and surface owners are consequently denied the moderating effect the doctrine can produce on mineral estate dominance.\textsuperscript{217}

Another confusing element contained in the Act derives from its use of the definition of "surface use or improvement." The Act declares plainly enough that, "[e]xcept when expressly stated otherwise, 'surface use or improvement' means an existing or future surface use or improvement."\textsuperscript{218} When this definition is incorporated into the definition of accommodation, the Act emulates the Arkansas Supreme Court's decision in \textit{Diamond Shamrock Corp. v. Phillips} by including a surface owner's future surface development in the accommodation family.\textsuperscript{219} This result might lead one to believe that a mineral owner would be routinely obliged to accommodate future as well as existing surface developments under the Act, but such is not the case. A close reading of the Act reveals that the only future surface use even remotely protectible is one that can be qualified under the difficult terms of section 5.\textsuperscript{220} The Act's use of the term "surface use or improvement" is misleading because it portrays the expanded version of the definition as the rule when it is in fact the exception, and simple existing surface use is the rule.

The other parameters contained in this section are defined comprehensively to allow universal application of the Act. The definition of "mineral" includes any substance considered valuable now or in the future.\textsuperscript{221} "Surface" encompasses land, buildings, roads, subjacent and lateral support, groundwater, and that part of the subsurface used for surface-owned items such as trees and base-
ments. "Ongoing mineral development" is very broadly defined to include not only existing and documented planned mining activity, but also "resumption or extension of mineral development within 30 years after the previous production stopped."223

C. Section 3: Easement for Surface Access and Use Accommodation

Section 3 codifies the common law mineral estate dominance doctrine for use in construing conveyances lacking express assignments of estate priority.224 This result is foreshadowed by section 1's prohibition of injunctive relief, but it is nevertheless surprising to discover the Act's drafters expressly sanctioning a doctrine that is progressively weakening.225 The drafters could have designated the estates mutually dominant and mutually servient, or they could have chosen the surface estate to be the dominant estate.226 Either of these choices would provide the surface owner a greater voice in the placement and scope of mining access easements, while the mineral owner's right of access could be preserved via easement by necessity jurisprudence.227 By promulgating the mineral dominance doc-

222. Model Act § 2(7).
223. Id. § 2(5).
224. Id. § 3(a). The section provides:
§ 3. Easement for Surface Access and Use Accommodation.
(a) The separation of a mineral estate with a right of mineral development from the surface by deed, lease, or other instrument, in the absence of language in the instrument to the contrary, establishes the mineral estate as the dominant estate and creates an easement on and through the surface for reasonable access to the minerals in place and for reasonable use of the surface in the development of the mineral estate, as defined by other law of this State.

225. See supra notes 89-98, 151-80 and accompanying text (explaining accommodation doctrine and statutory developments aimed at curtailing mineral estate dominance and injecting fairness into severance disputes).
226. In 1949, one modern-thinking commentator described the mutual rights and obligations of surface and mineral owners in the following terms:
[T]he surface and mineral estates are not only mutually dominant, but are also mutually servient estates. The surface estate is burdened with the right of access, and the mineral estate is burdened with the right of the surface owner to insist that the surface be left intact and that it not be rendered valueless for the purposes for which it is adapted, by depletion of sub-surface or surface substances. Eugene O. Kuntz, The Law Relating to Oil and Gas in Wyoming, 3 Wyo. L.J. 107, 113 (1949); see also Smith, supra note 146, at 821 (stating that under West Virginia Supreme Court's decision in Buffalo Mining Co. v. Martin, surface estate becomes dominant); Reese, supra note 151, at 541 (arguing that under Wyoming consent statute, surface owner has dominant estate).
227. An easement by necessity is implied based on the presumption that a conveyance would not have been made but for an understanding between the parties that each has a right to access his or her own tract. An easement will be created by implied reservation if it can be shown that: (1) there was an initial unity of ownership of the now severed dominant and servient estates; (2) the mining easement is a necessity, not a mere convenience; and (3) the necessity existed at the time of the severance of the two estates. Othen v. Rosier, 226 S.W.2d 622, 625 (Tex. 1950). Obviously, easement by necessity jurisprudence makes the surface estate servient to the extent of the easement, but if the surface estate is considered to be dominant overall, regardless of the servitude, then perhaps the mineral owner would have to
trine, the Act reveals itself to be targeted not to achieve “optimum development and use of all surface and mineral resources”; rather, the Act is primarily focused on maintaining the status quo of maximizing mineral developer profit by minimizing surface owner power to object to wasteful or destructive mining practices.

This inference is supported by the Act’s failure to confront the problem of defining the scope of the implied mining easement. The Act sanctions a “reasonable use of the surface in the development of the mineral estate” standard but explicitly leaves the definition of “reasonable use” to the common law of enacting states. Unfortunately, disagreements over the definition of “reasonable use” motivate an enormous number of lawsuits, and the Model Act does nothing to quell this furor. Granted, it is difficult to propose guidelines for a factor that varies dramatically between states, depending variously on the mineral involved, the mining methods available, contemporaneous market factors, and the political influence of mining or surface development interests. By doing nothing to impede iterative litigation over the meaning of “reasonable use,” however, the Act subverts its stated goal of “quantifying . . . surface and mineral rights and burdens” to facilitate resource obtain the surface owner’s consent before placing or expanding an easement. This would provide the surface estate a measure of protection beyond easement by necessity precepts, which allow the servient estate owner first crack at placing the easement but then no control over expansion of the easement once it is located. See supra note 137 (explaining easement placement under easement by necessity doctrine).

228. MODEL ACT § 1(a).

229. See id. § 3 cmts. (stating that Act “does not provide a basis for deciding whether a particular means of access or a particular use . . . is within the scope of the easement. . . . Decisions as to what reasonable surface uses exist for the mineral developer will continue to be made under the common law of the state.”).

230. See, e.g., Pittsburg & Midway Coal Mining Co. v. Shepherd, 888 F.2d 1533, 1534-37 (11th Cir. 1989) (allowing nine-acre slurry pond used for modern coal processing method to be constructed on surface owner’s timberland); Martin v. Kentucky Oak Mining Co., 429 S.W.2d 395, 397-99 (Ky. 1968) (failing to provide, as sought by plaintiffs, that under mineral deed, owner of minerals had no right to remove coal by strip or auger mining), overruled by Akers v. Baldwin, 736 S.W.2d 294, 303-05 (Ky. 1987); Large v. Clinchfield Coal Co., 387 S.E.2d 783, 785-86 (Va. 1990) (finding longwall mining reasonable mining use because would not appreciably harm plaintiff’s land, despite evidence that land would subside in five swales); see also Van Gelder, supra note 1, at 64 (giving journalist’s perspective of “reasonable use” as follows: “Eastern Kentucky, like much of Appalachia, is virtually a polluter’s theme park. Worked over by coal companies . . . the state has more than its share of . . . sawed-off-at-the-knees, strip-mined mountaintops.”). Van Gelder is referring, in the last part of the quote, to a mining method called “mountaintop removal,” which seems to be a prima facie unreasonable use of land. See Van Gelder, supra note 1, at 65 (reprinting photograph of “mountaintop removal” mining method, which involves destruction of entire surface estate).

231. See Roth et al., supra note 13, at 341-42 (analyzing treatment of coal mining subsidence in six Appalachian states and concluding that differences in dispute resolution techniques and assignments of rights and obligations between surface and mineral owners “may reflect the states’ political cultures and perhaps the relative political and economic clout of the . . . mining industry vis-a-vis surface owners”).
The Act’s sole mechanism for limiting mineral easement scope is contained in section 3(b). This section codifies a version of the accommodation doctrine, giving surface owners an opportunity to defeat proposed mining practices if alternative methods of mineral development can be proven to exist. While the common law accommodation doctrine compels a showing of “reasonable” alternatives, the Model Act requires a demonstration that “technologically sound and economically practicable” alternatives exist. The drafters presumably altered the common law test in the interest of precision, but these new terms are as enigmatic as the reasonableness standard, and beyond that, they may impose a heavier burden on the surface owner. The Act’s standard is symbiotically intertwined with the state of technological development and the condition of the marketplace, whereas the reasonableness test involves free evaluation of a multiplicity of factors. By narrowing the

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232. See Model Act § 1(a)(f). Actually, by defining the term “mineral” to include not only oil, gas, coal, etc., but also sand and gravel, id. § 2(2), the Act is surreptitiously expanding the scope of what may be considered a reasonable use of the mining easement. Many disputes have arisen over the ownership of sand and gravel, id. § 2(2), the Act nevertheless presumes to define “mineral” in such a way that even surface mining could ensue within the scope of the mining easement, because sand and gravel cannot be mined any other way. In light of this result, it is strange that the Act’s drafters did not simply leave the definition of “mineral” to the common law of enacting states, as they did the definition of “reasonable use,” because the former implicates the latter and thus the two should be treated consistently. States adopting the Act should be aware of this hidden conundrum and modify the definition of mineral to match their own common law or statutory definition.

233. Model Act § 3(b). This section provides:

§ 3. Easement for Surface Access and Use Accommodation.

(b) A surface access and use easement under subsection [3](a) is subject only to accommodation to surface uses and improvements and enlargements or curtailments effected under Section 4, 5, 6, or 8 or by agreement.

Id.

234. Id.


236. Model Act § 2(1).

237. See Getty Oil Co. v. Jones, 470 S.W.2d 618, 627 (Tex. 1971) (stating, somewhat circularly, that reasonableness of mining access easement may be measured by “what are usual, customary and reasonable practices in the industry under like circumstances of time, place and servient estate uses”). Presumably, the Getty standard can take into account the condition of the marketplace in the future, not just in the present, as well as the scope and value of surface uses, the location of the mining, any routine practices mineral developers engage in voluntarily to accommodate surface uses, and the like. All of these factors provide a surface
qualifying criteria for alternate mining methods to two highly technical areas, the Act makes it more difficult substantively as well as statistically for a surface owner to prevail.238

The accommodation doctrine adopted by the Act also contains the problems discussed previously regarding the confusing definition of "accommodation" and the misleading scope of the phrase "surface use or improvement."239 These problems manifest themselves in the Act's treatment of proposed mineral and surface development in sections 4, 5, and especially 8, which are discussed below. In an effort to clarify rights under the accommodation doctrine before disputes arise, these provisions provide for predevelopment approval of "enlargements or curtailments" in the mining access easement.240 The Act's accommodation doctrine is therefore subject to these provisions and must also defer to express party agreements according to the requirements of section 6.241

D. Section 4: Protection of Mineral Development

Section 4 indemnifies a mineral owner from liability for surface damage so long as mining activities remain within the purview of the accommodation doctrine.242 A mineral owner can ensure that pro-

owner more "wiggle room" than would singular focus on technological and economic conditions.

238. This statement assumes the surface owner must carry the burden of proving the existence of alternative mining methods, despite the Act's failure to assign the burden. See supra notes 203-12 and accompanying text. If a surface owner could previously draw on a number of factors and now can only examine two factors in an attempt to prove the existence of alternatives, she is statistically less likely to succeed because optional avenues have been foreclosed. If the surface owner must rely on only technological and economic factors to prove her case, she may have a difficult time substantively if she is not informed in these areas, and because many laypersons do not possess detailed mineral industry knowledge, lack of reasonableness may be a difficult burden to carry for surface owners. See Hunt Oil Co. v. Kerbaugh, 283 N.W.2d 131, 137 (N.D. 1979) (finding that plaintiff did not introduce evidence of reasonable alternatives to seismic exploration for oil and thus could not enjoin such exploration, despite evidence of seismic activity's adverse effect on plaintiff's land and water resources).

239. See supra notes 203-20 and accompanying text (criticizing Act's definitions of "accommodation" and "surface use or improvement").

240. Model Act § 3(b) & cmts.

241. Id.

242. Id. § 4. This section provides:


If a mineral developer gives each surface owner notice of proposed mineral development, together with a plan to accommodate existing surface uses or improvements protected by Section 3(b) or a plan satisfying requirements for a permit under federal or state law, the mineral developer is not liable for failure to accommodate surface uses or improvements affected by the proposed plan unless (i) a surface owner serves on the mineral developer a written objection to the plan within 60 days after receipt of notice, challenges the plan by a proceeding under Section 8 and obtains a favorable determination in the proceeding, or (ii) the mineral developer makes material deviations from the plan which result in material injury to surface uses or improvements entitled to protection under the accommodation doctrine.
posed mineral development will not give rise to liability by notifying each surface owner of development plans and by including procedures to accommodate existing surface uses, or alternatively, by including a design consistent with state or federal mining permit requirements, with the notification.\textsuperscript{243} This method of indemnification raises two important points. First, a mineral owner need only consider existing surface uses when developing an accommodation plan, so the mineral owner will automatically be indemnified from liability for damage to future surface uses.\textsuperscript{244} Second, it is not entirely clear that state or federal mining permit requirements are equivalent to mandatory accommodation procedures for surface lands and structures. A mineral owner will most likely choose the path of least resistance, so it is important to clearly understand whether the former provides as much protection for the surface owner as the latter. Unfortunately, the Act does not clarify this matter.\textsuperscript{245}

A surface owner can challenge a mineral developer’s plan by sending the developer a written objection and by subsequently initiating a proceeding under section 8 of the Act.\textsuperscript{246} A mineral owner will only be held liable for surface damages if the surface owner’s section 8 challenge succeeds or if the mineral owner materially deviates from his or her plan and material surface damage results that

\textsuperscript{243} Id.

\textsuperscript{244} See id. § 4 (requiring mineral developer to file “a plan to accommodate existing surface uses or improvements” but finding that mineral developer is “not liable for failure to accommodate surface uses or improvements affected by the proposed plan”). By explicitly clarifying that the plan need only consider existing uses and then negating liability for damage to uses “affected by the proposed plan,” the Act is limiting the mineral developer’s liability to cover damages to existing surface uses only. See id. § 2(9) (proclaiming that “[e]xcept when expressly stated otherwise, ‘surface use or improvement’ means an existing or future surface use or improvement”). The Act could have extended liability for existing and future surface uses merely by leaving off the word “existing” in the first clause quoted above. Id. Of course, it would be difficult, if not impossible, to devise a plan that would accommodate all possible future surface uses. But considering that the duration of mineral development under the Act can extend 30 years beyond the end of current development, which may be 20 to 30 years itself, it would be more equitable to require mineral owner examination of likely surface developments. Short of that, the term of the mining activity should be clearly proclaimed so that surface owners understand, up front, the length of time that secure surface development will be precluded.

\textsuperscript{245} An analysis of state and federal permitting requirements is beyond the scope of this Comment. Presumably, permit requirements vary from state to state; some states will have permitting requirements more stringent than the accommodation doctrine, and some will have requirements less stringent. Either way, the mineral developer will be able to choose either the accommodation doctrine or a lesser standard, assuming the developer chooses the easiest path for itself. If the standard is lower than the accommodation doctrine, then obviously this provision of the Act will not provide much of a hurdle for mineral owners to secure indemnification of planned mineral development activities against existing and future surface estate uses.

\textsuperscript{246} Model Act § 4(i).
would have been protected under the accommodation doctrine. 247

E. Section 5: Protection of Surface Use or Improvement

Section 5 attempts to provide a similar method for surface owners to obtain prior approval for proposed surface uses under the accommodation doctrine. 248 Unfortunately, the provision is so biased in favor of mineral development as to be almost useless for surface owners. First, a surface owner must notify a mineral developer of proposed surface uses, but if there is “ongoing mineral development,” which is broadly defined to include existing and planned mining and the “resumption or extension of mineral development within 30 years after the previous production stopped,” the mineral developer is not liable for any damage to that surface use. 249 If ongoing mineral development does not exist, 250 the mineral developer may still evade liability by objecting in writing to the surface owner. 251 This is sufficient in itself to defeat liability unless the surface owner has the wherewithal to institute a section 8 proceeding. 252 And even if a section 8 proceeding is joined, the mineral

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247. Id. § 4(i)-(ii).
248. Id. § 5. This section provides:

§ 5. Protection of Surface Use or Improvement.

(a) A surface owner who desires protection for a proposed surface use or improvement may give the mineral developer notice of the use or improvement. The mineral developer is subject to a claim for damages for any injury that subsequent mineral development causes to the use or improvement unless there is ongoing mineral development or the mineral developer makes a written objection to the proposed use or improvement to the surface owner within 60 days after receipt of the notice.

(b) If the mineral developer makes a written objection on the surface owner pursuant to subsection (a), the surface owner may gain protection for the proposed use or improvement only by (i) entering into an agreement with the mineral developer, or (ii) obtaining a determination in a proceeding under Section 8 that there is no probability of future mineral development or that technologically sound and economically practicable mineral development can be conducted without material injury to the surface use or improvement.

249. See id. § 5(a) (“The mineral developer is subject to a claim for damages . . . unless there is ongoing mineral development”); id. § 2(5) (defining “ongoing mineral development”).
250. This is an unlikely situation, because if the Act is adopted by a state, a mineral developer could ensure that this requirement is always fulfilled simply by inserting additional mineral development plans into the drilling or mining logs or other records maintained by that selfsame mineral developer. See MODEL ACT § 2(5)(ii) cl. 2 (providing that mineral developer’s own records are sufficient to establish existence of ongoing mineral development). This kind of planning via mineral developer record keeping, i.e., according to the records of the party with the most to gain from having ongoing mineral development proclaimed, may in and of itself be sufficient to guarantee that the requirement is met, much to the detriment of the surface owner.
251. MODEL ACT § 5(a) (“The mineral developer is subject to a claim for damages . . . unless . . . the mineral developer makes a written objection to the surface owner . . . within 60 days”).
252. See id. § 5(b)(i)-(ii) (providing protection to surface owner’s proposed surface use
developer need only show a probability of future mineral development to continue to forestall liability.\textsuperscript{253} If the surface owner cannot counter with a showing of alternative mining methods, then the surface owner cannot attain indemnification for his or her proposed surface use.\textsuperscript{254} This section therefore offers limited practical assistance to surface owners and will more often than not fail in its attempts to provide certainty to surface planning efforts.

\textit{F. Section 6: Modifications of Easement for Surface Access and Use}

Section 6 limits the Act's accommodation doctrine to apply only to implied mining easements and privileges.\textsuperscript{255} If a severance instrument contains an express waiver or requirement of surface damage payments or expressly protects certain surface uses or mining rights, then the Act's accommodation doctrine is applicable only to the extent that it does not infringe on these express provisions.\textsuperscript{256} Additionally, the Act's accommodation doctrine will recognize and respect any agreements struck between surface and mineral owners relating to surface uses or improvements or damages.\textsuperscript{257}

Once again, the Model Act fails to provide guidance in a much litigated area,\textsuperscript{258} preferring to leave the validity of severance provisions to be decided under common law contract and property prin-

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\textsuperscript{253} \textit{Id.} \textsuperscript{5(b)(ii), 8(b)-(c)}. The Act does not specify "how probable" mineral development must be. Is the probability factor 95%? 75%? 50%? Or can a mineral developer defeat a surface owner's attempt to protect a proposed surface use with a 5% probability factor? The term "foreseeable future" is equally ambiguous. \textit{See id.} \textsuperscript{8(b)-(c)} (using term "foreseeable future" but failing to define duration of term).

\textsuperscript{254} \textit{See id.} \textsuperscript{5(b)} (providing protection to surface owner for proposed surface use only if, after mineral developer has made written objection to proposed use, surface owner obtains favorable ruling in \textit{§ 8} proceeding or strikes bargain with mineral developer).

\textsuperscript{255} \textit{Id.} \textit{§ 6}. This section provides:

\textit{§ 6. Modifications of Easement for Surface Access and Use.}

An easement for surface access and use and the obligation to accommodate are subject to (i) any provision of a deed, lease, or other instrument which expressly requires payment of surface damages, or waives surface damages, or protects surface improvements constructed before or after severance occurs or the obligation to accommodate arises; and (ii) any agreement relating to surface use or improvement or damages.

\textit{Id.}

\textsuperscript{256} \textit{Id.}

\textsuperscript{257} \textit{Id.} \textit{§ 6(ii)}.

\textsuperscript{258} \textit{See, e.g.}, Eastwood Lands, Inc. v. United States Steel Corp., 417 So. 2d 164, 166-69 (Ala. 1982) (denying mining injunction sought by surface owner wanting to build shopping center on surface because of waiver of surface support in severance instrument); Bevander Coal Co. v. Matney, 320 S.W.2d 301, 302 (Ky. 1959) (upholding broad form deed waiver of surface damages in context of auger mining); Buchanan v. Watson, 290 S.W.2d 40, 43 (Ky. 1956) (upholding broad form deed waiver of surface damages in context of strip mining, so long as miner's behavior is not "oppressive, arbitrary, wanton, or malicious"), overruled on other grounds by Akers v. Baldwin, 736 S.W.2d 294, 304-05 (Ky. 1987).
Given the disparity in mining knowledge and relative bargaining power between mining companies and private landowners, many severance instruments are actually contracts of adhesion and thus waivers of surface damage contained in these conveyances are invalid. In addition, the definition of "surface damage" changes as mining methods evolve, rendering contemporary interpretation of dated waiver provisions imperative in the interest of equity. The Act is not responsive to these concerns, however: it merely provides a caveat that any provisions found contractually invalid are not relevant to the Act and thus avoids the substantive issue. As a result, a surface owner operating under a questionable deed must first litigate the validity of the deed before he or she can utilize the accommodation protections of the Act. Multiple litigation costs tend to deter parties having limited resources, and because many surface owners do not stand to gain enormous profits by challenging the validity of their surface damage waivers, they will not "choose" to do so. For all practical purposes, this provision implicitly favors mineral owners because it essentially sanctions the questionable waivers that have been inserted into deeds to protect mining interests.

G. Section 8: Determination Whether Accommodation Is Required

Section 8 provides the ground rules for determining whether an
accommodation is required in proposed development disputes between surface and mineral owners. Section 8(a) provides that "[i]f the surface owner and mineral developer are unable to reach an agreement under Section 4 or 5, either party may institute a [Section 8] proceeding." This "either party" language is interesting in light of language in sections 4 and 5 consistently placing the burden of initiating proceedings on the surface owner, in either mineral or surface owner-initiated development scenarios. It is not clear that mineral owners will ever need to resort to section 8 proceedings to indemnify proposed mining under the Act's accommodation doctrine, because sections 4 and 5 are designed to ensure that this indemnification occurs by default, i.e., by lack of action on the surface owner's part.

264. Model Act § 8. This section provides:

§ 8. Determination Whether Accommodation is Required.

(a) If the surface owner and mineral developer are unable to reach an agreement under Section 4 or 5, either party may institute an appropriate proceeding.

(b) If it is determined in the proceeding that (i) mineral development in the foreseeable future is probable based upon reasonably foreseeable economic conditions and technology and that technologically sound and economically practicable mineral development cannot be conducted without material injury to the surface use or improvement, or (ii) that the proposed surface use or improvement would interfere materially with technologically sound and economically practicable mineral development, the mineral developer may exercise the development easement appurtenant to the mineral estate without accommodation for the proposed surface use or improvement and is not liable under this [Act] for damages to the proposed use or improvement.

(c) If it is determined in the proceeding that (i) there is no probability of mineral development in the foreseeable future, based upon reasonably foreseeable economic conditions and technology, or (ii) the proposed surface use or improvement would not interfere materially with technologically sound and economically practicable mineral development, the mineral developer may exercise the development easement appurtenant to the mineral estate only with accommodation for the proposed surface use or improvement and is liable under this [Act] for damages to that use or improvement.

If the determination under this subsection authorizes a new use or improvement, and the surface owner does not begin the proposed use or construction of the proposed improvement within three years after the determination, the mineral developer is thereafter relieved from the obligation to accommodate the proposed surface use and improvement and is not liable under this [Act] for damages to the proposed use or improvement.

(d) The issues specified in subsections (b) and (c) are the sole substantive issues for determination in the proceeding. A court may not enjoin mineral development or surface use or improvement under this [Act].

(e) The court shall award to the prevailing party reasonable attorney's fees and other expenses incidental to the proceeding.

Id. § 8(a). Section 8 comments indicate that "[w]hat constitutes an appropriate proceeding will depend on the law of the state. For example, it might be a declaratory judgement proceeding, a civil proceeding, or a proceeding in arbitration." Id. § 8 cmts.

266. See id. § 4(i) (providing that "a surface owner . . . challenges the plan by a proceeding under Section 8"); id. § 5(b)(ii) (stating that surface owner may obtain determination in proceeding under § 8).

267. See id. § 4 (mandating that mineral owner be indemnified after serving notice "unless" surface owner takes action, or "unless" mineral developer materially deviates from plan.
Sections 8(b) and (c) present the dominant mineral estate doctrine in yet another guise: generally, a mineral developer need not accommodate existing or future surface uses if there exists a probability of mineral development in the foreseeable future or if the proposed surface use would interfere with mineral development. Under either of these circumstances, a mineral developer may utilize implied mining easements without liability for damages to the surface. A surface owner is only eligible to receive nonaccommodation damages when mineral development is not probable in the foreseeable future or when the surface owner's proposed surface use would not materially interfere with mineral development. Obviously, however, in either of these situations the mineral owner does not need to accommodate the surface owner anyway.

Sections 8(b) and (c) are riddled with the definitional problems regarding "accommodation" and "surface use or improvement" mentioned earlier. First, the accommodation language used here is inverted, per Getty Oil Co. v. Royal, and in fact conflicts with standard accommodation language used in section 5. That is, the Act suggests that surface owners must accommodate mineral development rather than vice versa, and again, the burden of proving accommodation is not allocated to either party. The drafters ostensibly manipulated the accommodation doctrine in this fashion so that it could be applied to either party, but in so doing, they rendered its purpose meaningless. Under the Act's wording, either the mineral owner must show material interference of the surface use with mineral development, in which case the mineral owner is not liable for damage, or else the surface owner must show lack of interference with mining, in which case the mineral owner must accommodate or pay damages. But this is not an accommodation doctrine at all,
because if the surface owner shows that a proposed surface use will not materially interfere with mineral development, then the mineral developer need not change his or her behavior at all and will never have to pay damages.

A second problem with section 8 lies in its selective employment of the adjective "proposed." By inserting that word before "surface use or improvement" in section 8(b)(ii) and in the third clause of that subsection, the Act forecloses a surface owner's ability to challenge proposed mineral development that will affect existing surface uses. If this is true, then a surface owner will not have an opportunity under the Act to forestall anticipated surface damage by a proposed mining method. Instead, only section 10 will provide surface owners a remedy for this type of harm, and that relief is less than ideal because it manifests only after damage has been done to the surface. In addition, because clause 3 of this subsection is the denouement of 8(b)(i) as well as 8(b)(ii), the use of "proposed" limits a mineral owner's ability to indemnify new mining activity from proposed surface uses only and not from existing surface uses. It seems unlikely that the drafters intended this result because it obstructs advance quantification of party rights and obligations and thus erodes the certainty of investment planning that is at the heart of the Act.

Section 8 goes on to impose a three-year time limit on surface owners to begin any proposed use, without mandating a similar restriction for mineral owners. Section 8(d) provides that the issues raised in sections 8(b) and (c) are the "sole substantive issues for determination in the proceeding" and that a court may not en-

274. Id. § 8(b). This subsection, if its part (i) or (ii) requirements are met, allows the mineral developer to go forward with proposed mining without accommodating certain surface uses. By inserting "proposed" into clause 3 of § 8(b), those "certain" surface uses are limited to "proposed" surface uses. Thus, a surface owner utilizing this section to try to protect an existing surface use from proposed mining will not be able to do so if "proposed surface use or improvement" is read literally. Similarly, the surface owner may not be able to protect "future" surface uses, because it is not clear that the term "future" is equivalent to the term "proposed." And of course, the mineral owner will not be able to gain indemnification from damage to "existing" and perhaps "future" surface uses under this provision, again because of the qualifying adjective "proposed." Id.

275. See id. § 10(a) (providing maximum measure of damages attainable by surface owner in civil action filed to recover for mineral owner nonaccommodation).

276. See supra note 274 (examining effect of use of term "proposed" in clause 3 of § 8(b) on disposition of existing surface uses or improvements).

277. See MODEL ACT § 1(a) (asserting that quantification of party rights and obligations is important public policy of state); id. § 5 cmts. (stating that mineral owner's right to use surface without payment for surface damage under dominance doctrine is key factor that impedes surface development).

278. Id. § 8(c).
join mineral or surface development under the Act. Finally, section 8(e) discourages frivolous actions by awarding attorney's fees and incidental expenses to the winner of the proceeding. This qualification again works to deter surface owner suits because surface owners generally have lower financial resources to use in litigation than do mineral owners, and because most surface owners stand to gain much less, profit-wise, than do mineral owners.

H. Section 10: Measure of Damages for Failure to Accommodate—Limitations

Section 10 specifies the measure of damages recoverable via civil action by surface owners for mineral owner nonaccommodation. The Act provides a surface owner two types of damages. First, the surface owner may recover damages approximating the reasonable rental value of surface lands actually occupied by the mineral developer or otherwise made unavailable to the surface owner during mineral development. Second, a surface owner may recover consequential damages for actual injury to surface improvements caused by the mining activities. The mineral developer is allowed to reduce his or her damage outlay by offsetting the value of "any required reclamation activity or any benefits conferred on the prop-

279. Id. § 8(d).
280. Id. § 8(e).
281. See supra notes 53, 140, 178 and accompanying text (giving typical examples of surface owner versus mineral developer bargaining capacities).
282. MODEL ACT § 10. This section provides:
§ 10. Measure of Damages for Failure to Accommodate—Limitations.
(a) If a mineral developer fails to accommodate a surface use or improvement protected under this [Act], the surface owner may maintain a civil action to recover damages for:
   (1) loss of surface use limited to the greater of (i) loss of income for any interrupted period of use of the surface or improvements under the accommodation doctrine, or (ii) loss of value of the use of the surface or improvements during any period of interrupted use; and
   (2) injury to or destruction of surface improvements limited to the lesser of (i) the loss of fair market value of the improvement, or (ii) the cost of repairing, relocating, or replacing the improvements.
(b) A mineral developer may offset the value of any required reclamation activity or any benefits conferred on the property as a result of mineral development against the amount of aggregate damages for loss of surface use and destruction or injury to surface improvements.
(c) An action to recover damages under this section may not be commenced more than two years after the loss is or should have been discovered by the surface owner, but the parties by agreement may modify or waive the period of limitation.

Id. § 10(a)(1); see Fox, supra note 5, at 845 (describing Act's damages as similar to rent).
283. Id. § 10(a)(2); see Fox, supra note 5, at 845 (describing Act's additional consequential damages).
E:tery as a result of mineral development." This would include the value of an improved access road or the dredging of a pond, whether or not the surface owner thinks those features are of benefit to his or her property.

Again, the policy underlying this provision is mineral estate dominance. The drafters plainly did not want to deter mining activities of any stripe, as evidenced by the fact that they failed to provide surface owners a punitive damages option for wanton and malicious nonaccommodation and even declined to supply reasonable diminution in value damages for harm caused to surface land and improvements. By valuing surface injury at only the rental and/or consequential damage level, section 10 encourages mineral owners to abuse their accommodation obligations. In fact, this provision may work to grant mineral owners a private right of eminent domain because section 1(b) qualifies the Act under an enacting state's police power. That is, if a mineral estate's overlying surface is only used to grow corn or pasture cows or provide recreational hiking and camping facilities, a mineral owner may find it more cost effective to destroy the surface and pay the penalty than to accommodate the surface use. This result certainly does not further the Act's policy of preserving surface resources and maximizing environmental welfare.

Section 10(c) sets forth a flexible two-year statute of limitations within which time the surface owner must file a claim for damages. The two-year period begins to run at the point the loss is or should have been discovered by the surface owner. Thus if surface subsidence from underground mining does not occur until five

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285. Model Act § 10(b).
286. See id. § 10 (failing to provide such damage options for surface owners). For examples of judicial willingness to provide surface owners with equitable relief beyond the rental and consequential damage level, see Diamond Shamrock Corp. v. Phillips, 511 S.W.2d 160, 164 (Ark. 1974) (considering but not assessing punitive damages because surface owner did not establish wanton or willful misconduct on part of mineral owner); Akers v. Baldwin, 736 S.W.2d 294, 307 (Ky. 1987) (holding that diminution in value damages are available to surface owner for damage caused by mining under implied access easements).
287. Model Act § 1(b); see Stoebuck, supra note 27, at 599 (explaining that eminent domain is "a power of government by which property of private persons may be transferred to the government, or to an alter ego such as a public utility, over the transferor's immediate, personal protest"). Here, private mining companies are acting as the "alter ego" of government to consume the surface and pay the surface owners only rental value damages.
289. Model Act § 10(c).
290. Id.
years after mining ceases, the surface owner will have two years beyond that time to file a claim.

I. Section 11: Rights Preserved

Section 11 is perhaps partially intended to fill the breach left by the limited remedy provided a surface owner in section 10. This section preserves all other statutory and common law rights and obligations of surface and mineral owners so that claims under "obstruction, excessive or unreasonable use, negligence, nuisance, malicious or intentional misuse, contract, other recognized grounds and all causes of action conferred by other statutory law" are cognizable in tandem with this Act. Thus, most of the provisions in the Act establishing dispute resolution procedures and encouraging settlement are optional. Only section 3 contains mandatory legal procedures: the mineral estate dominance and quasi-accommodation doctrines are codified into state law by enactment of this Act.

IV. Model Act Application

In practice, the Model Act appears to be "full of sound and fury, [s]ignifying nothing." Perhaps this is an ungenerous characterization, but at a very basic level, the Act does little to change the status quo. Certainly, surface owners have more rights under the Model Act than anything contemplated under the mineral estate dominance doctrine, but these new rights are so carefully constrained as to be almost meaningless. In Pennsylvania Coal Co. v. Mahon, Justice Holmes stated that "if regulation goes too far it will be recognized as a taking." Apparently the Model Act draft-

291. Id. § 11 cmts. The section provides:
§ 11. Rights Preserved.
Except as specifically modified by this [Act], this [Act] does not limit liability of the surface owner under other law for impairment or obstruction of mineral development or correlative remedies of the mineral developer, or liability of the mineral developer under other law for unreasonable or excessive use of the surface or correlative remedies of the surface owner.

Id.

292. See Martz, supra note 18, at 65 (stating that "except for the servitude in section 3, [which is mineral estate dominance and the accommodation doctrine,] all provisions of the Act prescribe optional procedures"). Martz served as an advisor to the Special Committee on the Uniform Law Commissioners' Model Surface Use and Mineral Development Accommodation Act and thus should have an insider's understanding of the statute.

293. William Shakespeare, Macbeth act 5, sc. 5.

294. See supra notes 229-32, 236-38, 244-45, 249-54, 258-63, 266-67, 268-81, 286-88 and accompanying text (analyzing myriad ways Act favors mineral development over surface rights).

295. 260 U.S. 393 (1922).

ers heeded Holmes' words, because the Act does not go too far: it falls far short.

A. Effect on States Lacking Common Law Accommodation Doctrines

The most significant change the Model Act achieves is the introduction of the accommodation doctrine into states having no such principle. Given the pervasiveness of mineral estate dominance and the historic national preference for mineral exploitation, a doctrinal shift to provide surface estates even a modicum of consideration may seem revolutionary. In light of the national legislative trend curtailing mineral dominance and considering the limitations of surface owner power under the Act's provisions, however, the Model Act's impact is almost laughingly inconsequential.

1. Pennsylvania

For example, the state of Pennsylvania does not have a common law accommodation doctrine. If the dispute in Pennsylvania Coal Co. v. Mahon arose today under the Model Act, how would the controversy be resolved? The plaintiffs in Pennsylvania Coal sought to enjoin full-extraction coal mining underneath their land because such mining would cause the surface to subside, with resultant damage to their home and water supply. First of all, the Model Act

297. See supra notes 63-68 and accompanying text (explaining traditional preference for mineral development).

298. See supra notes 150-80 and accompanying text (providing brief overview of consent, lapse, mining methods, reclamation, and surface damage statutes that have been enacted by many states in last 10-20 years to enhance rights of surface owners as against mineral owners).

299. See supra notes 229-32, 236-38, 244-45, 249-54, 258-63, 266-67, 268-81, 286-88 and accompanying text (examining many different ways that Model Act favors mineral development over surface rights).

300. But see Mansfield, supra note 44, at 71 n.175 (stating that Pennsylvania has adopted accommodation doctrine in Einsig v. Pennsylvania Mines Corp., 452 A.2d 558 (Pa. 1982)). Einsig, however, involves a dispute between competing mineral interests: an oil and gas owner wanting to drill through a separately owned coal mine to reach the oil, 452 A.2d at 558, 560-61, and so is not directly relevant to this discussion of surface owner/mineral owner disputes.

301. Pennsylvania Coal Co. v. Mahon, 260 U.S. 393, 412 (1922). Much of the coal deposit underneath the Mahons' land had already been removed via the "room and pillar" method of mining, during which "rooms" of coal are extracted and "pillars" of coal are left in place to support the surface. Pennsylvania Coal planned to go back in and remove the supportive pillars of coal (called full- or secondary-extraction mining), which the company felt free to do under the surface damage waiver provision in its 1878 severance deed. Id. The Mahons invoked Pennsylvania's newly enacted Kohler Act, which barred the use of coal mining methods that would cause subsidence of "any structure used as a human habitation," id. at 412-13, but the Court would have none of it. Id. at 414. The Court struck down Pennsylvania's Kohler Act and refused to grant the Mahons' injunction, finding that the statute "destroy[ed] previously existing rights of property and contract" and that "a strong public desire to improve the public condition is not enough to warrant achieving the desire by a shorter cut than the constitutional way of paying for the change." Id. at 413, 416. The Court decided a very similar case in 1987 but achieved the opposite result. See Key-
does not offer injunction as a remedy, but seemingly the Act would allow the Mahons, surface owners, to compel Pennsylvania Coal, the mineral owner, to accommodate their home by providing support for the surface. The Act would have no such effect, however. Pennsylvania Coal would first have to notify the Mahons of its proposed mineral development according to section 4 of the Act, or else leave itself vulnerable to accommodation liability. The notification would have to be accompanied by a plan to accommodate the Mahons' house or by a plan satisfying federal or state permit requirements. Pennsylvania Coal wanted to remove the supportive pillars of coal in this case, so it would have to replace the pillars with some technologically feasible surface support system to meet the accommodation requirement, or else it could fulfill the federal or state permit requirements, whatever they might be. Assuming the coal company meets these criteria, it frees itself of all liability for failure to accommodate surface uses unless the Mahons successfully challenge its plan under section 8 of the Act.

But the Mahons face another hurdle: section 6 of the Act. The Mahons' 1878 surface deed contains an express waiver of any damages that might result from mining. Section 6 subjects the mineral access easement to any express surface damage waivers, so in the end, the Mahons are left without a remedy under the Act. Even assuming the express waiver provision did not exist in the

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stone Bituminous Coal Ass'n v. DeBenedictis, 480 U.S. 470, 474-75 (1987) (discussing "devastating" environmental and economic effects caused by subsidence and upholding Pennsylvania statute recognizing important public interest to be served by minimizing incidences of subsidence). In the years between the Pennsylvania Coal and Keystone decisions a national cultural shift toward enhanced environmental awareness has taken place, and the Keystone opinion reflects this shift. The Court listed the following "devastating effects" of subsidence:

[Subsidence] often causes substantial damage to foundations, walls, other structural members, and the integrity of houses and buildings. Subsidence frequently causes sinkholes or troughs in land which make the land difficult or impossible to develop. Its effect on farming has been well documented—many subsided areas cannot be plowed or properly prepared. Subsidence can also cause the loss of groundwater and surface ponds. In short, it presents the type of environmental concern that has been the focus of so much federal, state, and local regulation in recent decades.

Id.

302. MODEL ACT §§ 1(c), 8(d).
303. See supra notes 242-47 and accompanying text (explaining functioning of Model Act § 4).
304. MODEL ACT § 4.
305. Id.
306. Id.
307. See id. § 6 (precluding application of Act's accommodation doctrine to express waivers in severance instruments).
309. See supra notes 255-63 and accompanying text (explaining functioning of Model Act § 6).
Mahons' deed, the Model Act would still leave them without a prospective remedy if section 8(b) is read, as written, to apply to proposed surface uses only.\textsuperscript{310} That is, the Mahons would only be able to obtain recompense for their home under section 10's after-the-fact damage provision, because section 8(b)'s before-the-fact remedy does not literally extend to existing surface uses.\textsuperscript{311}

2. Virginia

Virginia also does not have a common law accommodation doctrine. Assuming the Model Act had been adopted in Virginia prior to the dispute in \textit{Large v. Clinchfield Coal Co.},\textsuperscript{312} what likely result? In that case, the Larges wanted to enjoin Clinchfield Coal Company's use of longwall mining underneath their eighty-one acres of mountainous timberland.\textsuperscript{313} Again, under the Act, the Larges would be unable to obtain an injunction.\textsuperscript{314} If Clinchfield filed a section 4 no-

\textsuperscript{310} See supra notes 274-77 and accompanying text (highlighting faulty drafting of Act with respect to use of terms “proposed,” “existing,” and “future,” as applied to mining and surface developments, uses, or improvements).

\textsuperscript{311} See \textit{Model Act} § 8(b) (using adjective “proposed” to modify surface “use or improvement” in each of three instances used in section).

\textsuperscript{312} \textit{Large v. Clinchfield Coal Co.}, 387 S.E.2d 783, 784 (Va. 1990).

\textsuperscript{313} Large v. Clinchfield Coal Co., 387 S.E.2d 783, 784 (Va. 1990). The court held that longwall mining could not be enjoined, despite the Larges' jurisprudential "absolute" right to subjacent support, see supra notes 80-84 and accompanying text, because no appreciable damage would be caused to the surface by Clinchfield's longwall mining. See \textit{Large}, 387 S.E.2d at 785 ("We have never decided whether a surface owner's right to subjacent support is violated by mere surface subsidence."). The "mere" subsidence contemplated here consisted of 5 swales cutting across the Larges' land, each 3 feet deep, 600 to 700 feet wide, and 3000 to 5000 feet long. \textit{Id.} at 787. Longwall mining had the potential to disrupt the flow of a stream, a spring, and groundwater drainage patterns on the Larges' property, \textit{id.}, and as a result would probably kill some of the timber on the land. Nevertheless, the court stated:

At law, a claim for a violation of subjacent support is implicitly premised upon a showing of appreciable damage to the surface estate or diminution in its use. Moreover, until a surface landowner establishes damage to his [or her] property, he [or she] has no cause of action. In equity, no prohibitory injunction against an anticipated wrong will issue unless "there is reasonable cause to believe that the wrong is one that would cause irreparable injury and the wrong is actually threatened or apprehended with reasonable probability."

\textit{Id.} at 785-86 (citations omitted). The court held that the Larges had not proved reasonably probable irreparable injury, so their request for an injunction was denied. \textit{Id.} at 786.

The dissent found it "incredible" that mining operations that would "effectively duplicate the consequences of a major earthquake" would not warrant injunctive relief. \textit{Id.} at 787 (Russell, J., dissenting). Clinchfield had expressed no intent to restore the Larges' land after mining was completed, so according to the dissent, subsidence would be an "irreparable injury." \textit{Id.} Furthermore, the majority's finding that anticipated subsidence would not harm the surface "to any appreciable degree" was based solely on Clinchfield's expert testimony to that effect and therefore should have been treated with suspicion. \textit{Id.}

\textit{Coal Magazine} called this decision a close case. R. Lee Aston, \textit{Court Decisions, Coal}, Dec. 1990, at 78. Aston stated that the longwall mining method "squeaked by" and could have been permanently enjoined if sufficient evidence of existent or future surface damage had been shown by the plaintiffs. \textit{Id.} at 80.

\textsuperscript{314} See \textit{Model Act} §§ 1(c), 8(d) (forbidding injunction and allowing only damages as remedy for mineral owner destruction of surface estate).
ification of proposed mining, the Larges would have to challenge the plan in a section 8 proceeding or automatically lose their opportunity to forestall damage and obtain a remedy. The Larges would need to forward a strong argument that alternatives to longwalling exist because if they lose the proceeding, section 8(e) ensures that they will pay attorney's fees and costs. Again, assuming the Larges lack knowledge of mining methods, natural resource markets, and future energy demand trends, they may be unwilling to risk losing the proceeding if "technologically sound and economically practicable" alternatives are not likely to be found to exist. Thus they may be deterred from challenging Clinchfield and will automatically lose their potential right to damages.

Assuming that Clinchfield does not utilize section 4 and instead agrees to some measure of accommodation, or that the Larges win in a section 8 proceeding, the Act imposes a duty on Clinchfield to accommodate the Larges' surface use. In this case, that "use" consists of simply allowing the timberland to be wilderness. If Clinchfield's mining activities harm the wilderness via subsidence or interruption of water supplies, the Larges can bring a civil suit under section 10 to recover money damages. Under section 10's limited rental and consequential damage provision, however, it is unlikely that a court would impose an amount of damages that would deter Clinchfield from harming the surface. The monetary value of using wilderness for aesthetic or recreational purposes is speculative, and thus the Model Act will probably, at best, provide the Larges a small sum of money, effectively licensing a continuing

315. Id. § 4(i). If, of course, Clinchfield deviated in a materially significant way from its accommodation plan and caused material surface injury, then the Larges would have a remedy. Id. § 4(ii).

316. See Model Act § 8(e) (awarding attorney's fees and incidental expenses to prevailing party).

317. See Smith, supra note 7, § 16.03, at 16-13 (explaining that even "shallow wells and relatively crude technology" of oil industry are beyond reach of most landowners).

318. Model Act § 8(b)-(c); cf. supra note 263 and accompanying text (explaining paradox of "choice" in socially or financially constrained situations).

319. See Model Act § 4 (ensuring that once mineral developer notifies surface owner of proposed mining, surface owner will forfeit protections of Act unless he or she initiates § 8 proceeding or unless mineral owner materially deviates from plan and causes material damage to surface uses or improvements).

320. See Model Act § 3(b) (stating that mining easement is subject to accommodation according to provisions of §§ 4, 5, 6, and 8 or by agreement).

321. See Large v. Clinchfield Coal Co., 387 S.E.2d 783, 784 (Va. 1990) (calling Larges' land "unimproved and uninhabited timberland in a mountainous area," which could indicate that Larges enjoyed hiking and camping there, or perhaps that they intended to use land for logging).

322. See Model Act § 10(a) (allowing surface owner to maintain civil action if mineral developer fails to accommodate protected surface use or improvement).
B. Effect on States with Common Law Accommodation Doctrines

1. Texas

Suppose the Model Act had been enacted in Texas before the watershed case of Getty Oil Co. v. Jones. What result under the Act? If Getty Oil simply installed its tall pumps, Jones could bring a civil action for damages under section 10. If Getty Oil filed a section 4 notice first, Jones would have to challenge the notice in a section 8 proceeding to preserve his rights. Beginning with the language of section 8(b)(i), it is clear that a court or arbitrator would find that "mineral development in the foreseeable future is probable based upon reasonably foreseeable economic conditions and technology." Both Adobe and Amerada Oil Companies are already successfully drilling on other parts of Jones' land. Next, it is not true that "technologically sound and economically practicable mineral development cannot be conducted without material injury to the surface use": again, both Adobe and Amerada are drilling nearby using alternative methods, so section 8(b)(i) does not apply. Section 8(b)(ii) does not apply either, because Jones has an existing, not a proposed, surface use, unless "proposed" means both "proposed and existing," in which case it still does not apply because the irrigation system does not materially interfere with the drilling.

323. Cf. Boomer v. Atlantic Cement, 257 N.E.2d 870, 872-75 (N.Y. 1970) (changing traditional common law rule that once private nuisance is shown, injunction is granted, to new balancing of equities test; where cement factory was effectively given license to continue wrong by being allowed to permanently pay off neighbors who were bothered by continual dirt, noise, and vibrations generated by factory, rather than shut down factory).

324. See Getty Oil Co. v. Jones, 470 S.W.2d 618, 623 (Tex. 1971) (holding that mineral owner Getty Oil must accommodate surface owner Jones' surface use, under court's newly articulated accommodation doctrine, by employing reasonably available alternative mining methods to extract oil).

325. See supra notes 282-90 and accompanying text (explaining functioning of Model Act § 10).

326. See supra note 267 and accompanying text (explaining that consequence of surface owner nonaction under § 4 once mineral owner notification of proposed mineral development is received is abdication of right to challenge development in § 8 proceeding and thus loss of right to challenge development prospectively under Model Act).

327. Model Act § 8(b)(i).

328. See supra text accompanying note 103 (noting that Amerada's hydraulic pumping units and Adobe's sunken-cellar style pumps were both being used on Jones' land to accommodate his irrigation system).

329. See Model Act § 8(b)(i). Here, mineral development is "probable," in fact, it is underway, and it is not true that "technologically sound and economically practicable" mineral development cannot be conducted without material injury to surface estate, because both Amerada's and Adobe's mining methods do not cause such injury. Getty Oil Co. v. Jones, 470 S.W.2d 618, 620 (Tex. 1971).

330. See supra notes 274-77 and accompanying text (noting ambiguity in Act's use of terms "proposed," "existing," and "future" surface uses or improvements).
alternatives.\textsuperscript{331}

Section 8(c)(i) is the inverse of 8(b)(i) clause 1, and because a probability exists that mining will occur, the section does not apply.\textsuperscript{332} That leaves 8(c)(ii), which does not apply either unless "proposed" surface use can be read to mean "existing and proposed" surface use.\textsuperscript{333} If this assumption cannot be made, Jones will have no way to prospectively protect his existing surface use from a section 4 proceeding, so this reading of the statute will be assumed. Thus under 8(c)(ii), the inverse accommodation doctrine, accommodation responsibility and liability for damage to Jones' cotton fields and irrigation system attaches to Getty Oil because Jones' existing irrigation system does not interfere with two alternative drilling methods to Getty's proposed method.\textsuperscript{334} Jones would win the section 8 proceeding and obtain attorney's fees and costs from Getty and would also have an action for damages under section 10 if Getty fails to accommodate his surface use.\textsuperscript{335} The damages involved in the real case and under the Act are quite similar.\textsuperscript{336}

Thus the Model Act, if given the amended "proposed and existing" section 8 reading, reaches much the same result as the model common law accommodation doctrine. Barring that interpretation, however, a mineral owner could escape predamage accommodation for existing surface uses merely by filing a section 4 notice: the Act's current wording requires this result.\textsuperscript{337} Considering that a previous version of the Act did not contain this trap for the unwary, one is left to wonder at the drafters' motivation for including it.\textsuperscript{338}

\textsuperscript{331} See Jones, 470 S.W.2d at 622 (finding two "reasonable alternatives" to Getty's surface use that did not interfere with Jones' irrigation machine).

\textsuperscript{332} Model Act § 8(c)(i).

\textsuperscript{333} See supra notes 274-77 and accompanying text.

\textsuperscript{334} See Model Act § 8(c)(ii) (allowing mineral developer to exercise access easement only with accommodation if proposed surface use would not interfere materially with mineral development).

\textsuperscript{335} See id. § 8(e) (awarding attorney's fees to prevailing party); id. § 10(a) (allowing surface owner to maintain civil action if mineral developer fails to accommodate protected surface uses).

\textsuperscript{336} Compare Getty Oil Co. v. Jones, 470 S.W.2d 618, 623 (Tex. 1971) (remanding case for determination as to liability and damages under accommodation doctrine and holding that Getty's liability will not exceed amount beyond decrease in value of use of land from time interfering pumps were installed to time of removal) with Model Act § 10(a)(1) (providing damages for greater of (1) loss of income for any interrupted period of use of surface under accommodation doctrine, and (2) loss of value of use of surface or improvement during time of interrupted use).

\textsuperscript{337} See supra note 274 and accompanying text (explaining consequences of language choices in Model Act § 8).

\textsuperscript{338} See Model Surface Use and Mineral Development Accommodation Act § 8(b)-(c), 14 U.L.A. 46 (Tent. Draft, Supp. 1991) (on file with The American University Law Review) (referring to simply "surface use or improvement," which, unmodified, means existing and future surface uses and improvements, according to Model Act § 2(9)).
What would happen if the facts in the Jones case were inverted and the irrigation system became a proposed use, the drilling an existing use? Under this scenario, Jones would first have to qualify his proposed use by filing a section 5 notice. If development was ongoing, as it would be if Getty were drilling, Jones would not be able to protect his surface use from mining damage at all, perhaps for a very long time (thirty years or more). If mineral development did not for some reason fit into the broad requirements of "ongoing mineral development," then Getty would have to object in writing to Jones within sixty days to avoid liability. Jones could only then gain protection by initiating a section 8 proceeding in which it was found either that mineral development was not probable in the foreseeable future or that Jones' irrigation system would not materially interfere with Getty's mining method. In the first instance Getty Oil does not care what Jones does because it is not planning to drill, and in the second, despite the inverted wording of the Act that suggests the surface owner is accommodating the mineral owner, Getty would have to use the alternative methods. Thus in most instances, mineral owners are again protected from the reasonable desires of surface owners to use their land, this time by an expansive definition of ongoing mineral development that essentially says to surface owners who want to develop their land: "not in your lifetime."

2. Arkansas

Arkansas' willingness to apply the common law accommodation doctrine to prospective surface uses in Diamond Shamrock Corp. v. Phillips can be used to underscore the Model Act's feeble protection of proposed surface uses. If the Diamond Shamrock dispute arose under the Model Act, the Phillipses, under section 5, could notify Diamond Shamrock of the proposed placement of their retirement home. The case does not make clear when Diamond Shamrock's
plan to drill the offending gas well was adopted, but it does mention that the well was part of the Union City Field, which was treated as a unit for gas exploration purposes. If this well is considered part of "ongoing mineral development," the Phillipses will not be able to qualify their home under the accommodation doctrine and Diamond Shamrock will not incur any liability under the Act for damage to the home. Even if the Phillipses are able to qualify their home, the Act will only provide them rental and consequential damages. Both of these results are inferior to the result of the case, which provided actual damages (diminution in value) to the Phillipses for their homesite.

V. Recommendations

To make the Model Act something other than an exercise in self-referential nonsense, the drafters have to give it some teeth, and those teeth have to occasionally bite mineral owners. The Act contains an explicit mandate to maximize the economic, cultural, and environmental welfare of the people, not just of mining interests. Granted, easy and cheap access to minerals keeps mining expenses down and allows developers to offer coal, oil, gas, and other minerals to the public at low monetary prices. But at what cost? Inexpensive coal and oil prices predicated at least in part on the dominant mineral estate doctrine have contributed to the entrenchment of an American energy policy focused almost exclusively on fossil fuel resources. This policy contributes in turn to the

346. Diamond Shamrock, 511 S.W.2d at 161.
347. See supra notes 249-50 and accompanying text (examining implications of provisions defining "ongoing mineral development" and concluding that mineral developer could ensure such development is always underway by including plans in own mining logs, because such is sufficient under Model Act § 2(5)(ii) to qualify as "ongoing mineral development").
348. See supra notes 282-90 and accompanying text (explaining damages provision of Model Act in § 1).
349. See Diamond Shamrock, 511 S.W.2d at 161, 164 (awarding diminution in value damages as difference in value of Phillipses' homesite before and after drilling commenced, which in this case was $4000).
350. One commentator has likened the Act to the Internal Revenue Code, saying that the Act contains "several complex provisions that resemble the Internal Revenue Code in the degree to which they tend to confuse the reader by repeated cross references to other sections." Polston, supra note 216, § 21.0313, at 21-10.
351. See Dycus, supra note 15, at 881 (analyzing "clear trend toward abandonment of the dominance doctrine" that has emerged in recent years).
352. MODEL ACT § 1(a). See generally Ted Gup, The Curse of Coal, TIME, Nov. 4, 1991, at 54 (writing about legacy of coal mining in Appalachia and its impact on individual miners' lives, and quoting GEORGE ORWELL, THE ROAD TO WIGAN PIERS, as stating that "it is only because miners sweat their guts out that superior persons can remain superior"). Perhaps the same could be said for the losses of surface owners with respect to mining-induced surface damage.
353. See Tomain, supra note 68, at 374-75 (explaining that fundamental assumption supporting domestic energy policy is existence of link between level of energy production and gross national product, and that economies of scale existent in "large-scale, high-technology,
daily degradation of our natural environment through air, water, and aesthetic pollution caused by mineral excavation and use.\textsuperscript{354} And again in turn, our national culture suffers as people's quality of life is negatively affected by the adverse side effects of mining activities.\textsuperscript{355} The Act has pledged to support these concerns, but to do so, it cannot promulgate the mineral estate dominance doctrine. A number of changes should be made in the Act so that the goal of maximizing the welfare of the people can be attained through rational use of both surface and mineral estates.

First, the Act should be overhauled to clarify definitions and to correct inconsistent or misleading statements. This modification primarily involves a reworking of the definition of "accommodation" and an explicit articulation of existing versus future surface uses or improvements in appropriate sections. That is, the accommodation doctrine is very precisely defined in \textit{ Getty Oil Co. v. Jones } and in \textit{ Hunt Oil Co. v. Kerbaugh}, and these cases can be used in conjunction with \textit{Diamond Shamrock Corp. v. Phillips } to delineate, unambiguously and consistently, the various parameters of accommodation.\textsuperscript{356} After this doctrinal groundwork is laid, then perhaps \textit{ Getty Oil Co. v. Royal } can be used to explain how "accommodation" could work so that surface owners accommodate mineral owners, although plainly the surface owner is not going to pay the mineral owner for failure to accommodate the mining easement, so this parallel example is still somewhat fallacious.\textsuperscript{357} Additionally, the increased burden on the surface owner of showing "technologically sound and economically practicable" alternative mining methods
should be reduced to “reasonable” alternatives, so that factors other than economic concerns are weighed in the analysis.\textsuperscript{358}

The problem surrounding the phrase “surface use or improvement” can simply be resolved by explicitly providing the modifiers “existing,” “future,” or “proposed,” or combinations thereof, wherever relevant. This method will obviate the Act’s misleading representation of the expansive version of the phrase as the rule, when in fact it is the exception.\textsuperscript{359} More importantly, surface owners will be able to protect against, or mineral owners to indemnify themselves from, damage to existing surface uses or improvements.\textsuperscript{360} Finally, the Act should either impose the burden of instituting a section 8 proceeding on the mineral owner in section 5 disputes, or it should admit that only surface owners are obliged to bring section 8 actions to preserve their rights.\textsuperscript{361} All of these measures will help to provide clearer understanding of an otherwise mystifying Act.

Second, the Act should impose accommodation duties whether or not the severance instrument contains express waivers of surface damage. Waivers of this sort are often unconscionable, and the Act is defeating its stated purpose of providing efficient dispute resolution procedures if it compels surface owners to first litigate the validity of severance contracts before providing accommodation.\textsuperscript{362} That is, mineral owners should be held “strictly liable” for the accommodation of surface uses in all cases, unless no reasonable alternative mining methods are shown to exist. This proposal is a hybrid solution that, while not going as far as surface damage statutes in imposing strict liability for all surface damages,\textsuperscript{363} at least recognizes that mineral development should be pursued in tandem with surface uses whenever possible. That goal, after all, is the very cornerstone of traditional severance jurisprudence: estates are severed so that optimal use can be made of multiple, not just of mineral, land strata.\textsuperscript{364} Waivers of surface damage can result in a severance

\textsuperscript{358} See supra notes 235-38 and accompanying text (examining burden of proof differences between two standards).

\textsuperscript{359} See supra notes 218-20 and accompanying text (pointing out implications of specifying existing versus future surface uses or improvements).

\textsuperscript{360} Cf. supra notes 274-77 and accompanying text (explaining that current use of term “proposed” in Model Act § 8(b)(ii) and § 8(b) clause 3 affects ability of surface and mineral owners to determine disposition of existing surface uses).

\textsuperscript{361} See supra notes 265-66 and accompanying text (pointing out fact that only surface owners need to resort to § 8 proceedings to protect their rights under Act).

\textsuperscript{362} See Model Act § 1(a)(iii) (asserting that one of policies motivating state enactment of Act is to “provide expeditious procedures” for resolution of severance disputes).

\textsuperscript{363} See supra notes 176-80 and accompanying text (explaining rationale for strict liability standard used in surface damage acts).

\textsuperscript{364} See supra notes 35-42 and accompanying text (discussing notion that estate severance
becoming a sale of the fee, and the Act should recognize this bizarre effect as the canard that it is.

Third, the Act should incorporate the rule used by several states that, in the context of implied easements, only those mining methods contemplated by the parties at the time of severance may be employed by the mineral developer. The Act evades this issue by leaving the pivotal definition of “reasonable mining methods” to be determined according to enacting state jurisprudence. This equivocal position raises serious questions of fairness between the states because, for example, Kentucky miners are allowed to strip mine and Pennsylvania miners are not under similar deeds. In addition, the Act’s avoidance of the reasonableness issue allows arguably unconscionable deed provisions to be enforced. That is, some states base their approval of the utilization of extremely surface destructive mining methods on the language of dated and ambiguous conveyance instruments, and as mentioned previously, the bargaining positions of many of the parties to such severances are far from equitable. By sanctioning determinations that broad implied easements are “reasonable” under these circumstances, the Act is countenancing unconscionable behavior. This unjust result can be avoided by restricting “reasonableness” to mean “reasonable at the time of severance.” If a mining developer finds herself absolutely constrained by this interpretation of a deed, she can renegotiate the mining access easement with the surface owner.

allows economies of specialization so that highest and best use of both surface and mineral estates can be made).

365. See Martin v. Kentucky Oak Mining Co., 429 S.W.2d 395, 399 (Ky. 1968) (holding that because mineral owner paid sufficient amount for mineral estate to include value of surface estate, he essentially paid for right to destroy surface, and that contractual basis for levying surface damage liability does not exist because of waiver of surface damage in deed), overruled by Akers v. Baldwin, 736 S.W.2d 294, 303-05 (Ky. 1987).

366. See supra notes 162-69 and accompanying text (examining statutory and common law rules (and constitutional amendment) in Kentucky and Tennessee that limit mineral development options in this way).

367. MODEL ACT § 3(a) & cmts.

368. Compare Akers v. Baldwin, 736 S.W.2d 294, 305-07 (Ky. 1987) (allowing surface mining to go forward under broad form deed as “reasonable use” of mining easement, although also requiring mineral owner to compensate surface owner for mining-induced damage to surface) with Stewart v. Chernicky, 266 A.2d 259, 263 (Pa. 1970) (refusing to imply expansive scope of mining easement required by surface mining unless some “positive indications” of intent to allow such easement can be found in severance instrument).

369. See supra notes 53, 140, 178 and accompanying text; cf. Jensen v. Southwestern States Management Co., 629 P.2d 752, 755-57 (Kan. Ct. App. 1981) (holding that specific performance of 55-year-old mineral deeds carrying rights to purchase surface at $70 or $75 per acre would be inequitable and thus requiring payment of current market value); Quarto Mining Co. v. Litman, 326 N.E.2d 676, 686 (Ohio 1975) (finding provisions in two 1906 severance deeds giving mineral owner right to acquire surface area by paying $100 or $200 per acre to be invalid because sum was so inadequate in current market).

370. Note that easement definitions generally emphasize the servitude imposed on the
this way both parties will know what is involved in the employment of a modern mining method, and both parties can intelligently and reasonably decide whether the benefits of the method are worth the costs.

Finally, the Act should establish compensatory and punitive damages for mineral developer nonaccommodation and willful nonaccommodation, respectively, of surface owner surface uses or improvements. Compensatory and punitive damage remedies would forcefully curtail wasteful mining practices and compel mineral developers to internalize the surface damage costs of mineral development rather than allowing those costs to be imposed on surface owners, as has been done in the past. This result is allocationally efficient because if a mineral estate is not valuable enough to make payment of surface damages economically expedient, then mineral development should not interfere with the superior use of the land by the surface owner. To be equitably efficient, nonaccommodation damages must be significant enough to deter mineral owners from using the Act as a private power of eminent domain, so that damage measures are considered more than an ordinary cost of doing business and thus are able to deter destructive mining prac-

surface rather than the benefit gained by the mineral owner. See Case v. Elk Horn Coal Corp., 276 S.W. 573, 574 (Ky. 1925) (reprinting typical broad form deed that contains easement language granting to mineral owner “exclusive rights of way for any and all . . . haul roads and other ways . . . to use and operate on the surface . . . to build, erect, alter, repair . . . any and all houses, shops, buildings, . . . and machinery and mining and any and all equipment”). This focus permits the easement holder to employ modern technologies over the easement, e.g., “dump trucks instead of horse-drawn carriages, power lines instead of steam engines, etc.,” without having to renegotiate the easement each time with the surface owner. Burke et al., supra note 48, ch. 4, at 42. This result is obviously advantageous for the mineral owner, but it can raise questions as to the validity of easement use under very old conveyances. See Lowe v. Guyan Eagle Coals, Inc., 273 S.E.2d 91, 93 (W. Va. 1980) (remanding case for evidentiary hearing to determine whether hauling technology “is so different from anything contemplated in 1902 that it overburdens the surface owner’s estate”).

371. Cf. Murphy v. Amoco Prod. Co., 729 F.2d 552, 555 (8th Cir. 1984). The court stated: The requirement that mineral developers compensate surface owners for damage they cause may well serve as an incentive for developers not to drill . . . where drilling is not likely to yield enough oil or gas to justify the loss to the economy from disruption of surface productivity. The compensation requirement might also create an incentive for developers to not cause unnecessary surface damage, and to remedy any damage—avoidable or unavoidable—they may cause.

Id.; see also Davis Oil Co. v. Cloud, 766 P.2d 1347, 1351 (Okla. 1986) (upholding Oklahoma surface damage act’s requirement of compensatory damage payments as proper exercise of state’s police power because such payments “protect against waste of natural resources and protect the rights of owners of those resources against infringement by others”).

372. See Huffman, supra note 15, at 209 (stating that value is measured by willingness to pay, and that “resources are efficiently allocated when the total value of production of commodities and services in the society . . . is maximized”). But cf. supra note 42 (questioning validity of allocational efficiency theory because theory is based on premise of willingness to pay as valid indicator of value).
Compensatory and punitive damages will put some bite into the Act by ensuring that this result occurs and will thereby foster rational and equitable utilization of both estates.

CONCLUSION

In an increasingly populated, increasingly energy-hungry world, demands for mineral resources collide with claims for surface space and a clean environment. In years past, mineral development received priority over surface development because surface lands were thought to be plentiful and because mineral resources were needed for industrial advancement. As time has passed, priorities have changed, and both common law and statutory doctrines have attempted to move the traditional emphasis on mineral development toward a more equitable policy that supports sensible utilization of mineral and surface estates.\textsuperscript{374}

The Model Surface Use and Mineral Development Accommodation Act reflects this modern intent to accommodate multiple uses of land, but as written, the Act does very little to usher in a new era of equity. Unless the provisions of the Act are strengthened, other types of legislation will render the Act moot. Surface owners and the public are demanding and obtaining powerful measures such as surface damage, lapse, and consent statutes that infringe on mineral owners' property rights to an extent never before experienced, and these measures are withstanding constitutional scrutiny. Modifications such as those proposed above must be made in the Act to supply it with power to bring about real, substantive change. If this is done, the Act will become a significant force in precipitating the equal dignity of severed estates.

\textsuperscript{373} \textit{See supra} notes 286-88 and accompanying text (examining implications of Act's relatively low measure of damages for nonaccommodation).

\textsuperscript{374} \textit{See} Lopez, \textit{supra} note 23, at 1029 (arguing that desires to protect environment combined with exponential population growth have "caused increasingly severe pressures on a diminishing surface estate, thereby providing the surface owner an improved negotiating position").