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Alternatives in Accretion: Why There Is Not Yet an Appropriate Solution to the Application of Accretion Law to Mineral Estates

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Alternatives in Accretion: Why There Is Not Yet an Appropriate Solution to the Application of Accretion Law to Mineral Estates

I. INTRODUCTION

Accretion, a term generally referring to the deposit or removal of sediment from riparian land by the movement of water,[1] has both diminished and augmented surface estate boundaries in many instances.[2] In ownership-in-place (or possessory[3]) jurisdictions,[4] courts have held that severed[5] as well as unsevered mineral estates[6]

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1. *See infra* Part II.A for a more thorough definition of accretion.

2. *See, e.g.*, *Hurricane Leaves Historic Lighthouse on Stronger Ground*, WASH. POST, Aug. 30, 1998, at A2 (noting how Hurricane Bonnie caused an accretion of sand in front of North Carolina's famous Cape Hatteras lighthouse, which had been inching closer to the high-tide water level because of erosion).

3. When referring to jurisdictions, the terms "ownership-in-place" and "possessory" are synonymous. This Comment will use the two terms interchangeably.

4. There are three types of jurisdictions: those that view mineral interests as real property, owned in place; those that view them as incorporeal hereditaments or profits à prendre; and those that recognize them as real rights or servitudes. These three categories are derived from Jared C. Bennett, Comment, *Ownership of Transmigratory Minerals, Utah, and Zebras: Proof that Oil and Gas Ownership Law Needs Reform*, 21 J. LAND RESOURCES & ENVTL. L. 349, 350–66 (2001). See *infra* note 148 for a definition of incorporeal hereditaments and profits à prendre. The latter two categories—mineral estates as incorporeal hereditaments and real rights—are both nonpossessory theories of mineral rights. Bennett, *supra*, at 361–65. For more explanation of mineral ownership, see Ronald W. Polston, *Mineral Ownership Theory: Doctrine in Disarray*, 70 N.D. L. REV. 541 (1994).

5. *See* Nilsen v. Tenneco Oil Co., 614 P.2d 36 (Okla. 1980); Jackson v. Burlington N. Inc., 667 P.2d 406 (Mont. 1983); Ely v. Briley, 959 S.W.2d 723 (Tex. App. 1998); *see also* J.P. Furlong Enters. v. Sun Exploration & Prod. Co., 423 N.W.2d 130 (N.D. 1988) (applying a North Dakota statute to hold that accretion applies to a severed mineral estate).

An estate is considered "severed" when the owner of the surface estate no longer owns the mineral estate. Robert L. Kimball, Comment, *Accretion and Severed Mineral Estates*, 53 U. CHI. L. REV. 232, 235–36 (1986) (noting that a mineral estate is severed from the surface estate "when the surface and subsurface portions of a piece of property are not held by a single owner"). A landowner may sever her surface and mineral estates "by simple conveyance, by reservation of the mineral estate in the grantor, or by conveyance of the subsurface estate and retention of the surface estate." G. Thomas Smith & Hume F. Coleman, *Oil, Gas, and Minerals*, *in* FLORIDA REAL PROPERTY COMPLEX TRANSACTIONS § 7.4 (Fla. Bar CLE Publ'ns ed., 2000).

6. *See* Ellis v. Union Oil Co. of Cal., 630 P.2d 306 (Okla. 1981); Seigle v. Thomas, 627 P.2d 417 (Okla. 1981).

are subject to accretion. That position, however, is susceptible to criticism on several grounds.[7] In turn, those criticisms are themselves subject to criticism and the alternatives are equally untenable. Because commentators have not touched the issue recently, extensively,[8] or possibly even correctly,[9] the time may have come to revisit this topic, particularly in light of the fact that accretion cases have cropped up as recently as 2000.[10]

This Comment argues that neither courts nor commentators have presented a workable answer to the problem of the application of accretion law to mineral estates, that other alternatives are equally problematic, and that the confusion and contradiction inherent in the relationship between accretion law and mineral estates is in need of resolution. However, each alternative solution to the problem of accretion and mineral estates is nearly as problematic as the others. Part II of this Comment defines accretion, gives background to the law of mineral ownership in ownership-in-place and nonpossessory jurisdictions, and provides an introduction to the legal problems stemming from the effect of accretion on mineral estates. Part III presents alternative answers to how accretion law should apply to mineral estates. First, it presents the courts' approach—that both

7. *See, e.g.*, Phillip Wm. Lear, *Accretion, Reliction, Erosion, and Avulsion: A Survey of Riparian and Littoral Title Problems*, 11 J. ENERGY NAT. RESOURCES & ENVTL. L. 265 (1991); Kemp Wilson, *Ownership of Mineral Interests Underlying Inland Bodies of Water and the Effects of Accretion and Erosion*, 30 ROCKY MTN. MIN. L. INST. 14-1 (1984); Kimball, *supra* note 5; S. Elaine Murphree, Note, *Oil and Gas: The Inapplicability of Accretion to Severed Mineral Estates*, 34 OKLA. L. REV. 826 (1981).

8. The little scholarship that exists on this issue includes a smattering of student pieces from the 1980s—*see, e.g.*, Kimball, *supra* note 5, at 232; Murphree, *supra* note 7, at 826—and a few professional pieces, the most recent from 1991—*see* Lear, *supra* note 7, at 265; Wilson, *supra* note 7, at 14-1. As noted *infra* Part III.A.2, these pieces uniformly argue that severed mineral estates should be immune from accretion, indicating the one-sidedness of the debate thus far. This Comment does not in any way seek to criticize or belittle those pieces' contribution to the field; rather, it seeks to build upon principles those pieces set forth and reinvigorate discussion on a topic that is still relevant. Specifically, the principal contribution this Comment seeks to make is to not only analyze the viability of the most widely debated applications of accretion law to mineral estates (which those pieces have discussed) but to argue that both those applications, as well as others, are flawed (which those pieces have not discussed). It also aims to provide guidelines that hopefully will prove helpful to courts in resolving accretion disputes. See *infra* note 41 and accompanying text for a discussion of the relevance of this topic. This Comment will refer to these pieces to support generally accepted principles of accretion law and to summarize arguments in favor of immunizing severed mineral estates from accretion.

9. *See infra* Part III.B (explaining why the commentators' approach is flawed).

10. *See* Siegert v. Seneca Res. Corp., 28 S.W.3d 680 (Tex. App. 2000).

severed and unsevered mineral estates should be subject to accretion. Through reliance on common law, three jurisdictions have held that severed mineral estates are susceptible to accretion, and a fourth has reached the identical result by interpreting a state statute. Part III then notes criticisms of those decisions that arose soon after they were issued. It then presents a second alternative derived from those criticisms: that unsevered mineral estates should be subject to accretion, but that severed mineral estates should be immune. While the second option partially addresses the faults of the courts' approach, it could nevertheless complicate the ascertainment of mineral estate boundaries.[11] Part III then presents a third option: immunize all mineral estates, severed and unsevered, from accretion. That result, while supported by the same rationale that supports the second alternative, would produce de facto severances of surface and mineral estates in contravention of the surface and mineral estate owners' intent. Part III then presents a fourth approach: abolishing accretion law entirely.[12] This approach, however, ignores the important functions accretion law performs in the allocation of mineral resources. Part IV suggests two considerations that future commentators should keep in mind when considering or discussing the accretion question: (1) that accretion should have no effect on unsevered mineral estates, and (2) that accretion should have no bearing at all on minerals in nonpossessory jurisdictions. It also suggests that if courts are pressed to choose one of the four options presented in this Comment, the first approach—applying accretion law to both severed and unsevered mineral estates—is the best option. Part V offers a conclusion.

11. This Comment will not address each argument made by the courts and by scholarship responding to the courts' approaches. Such an analysis would not only be cumbersome but unnecessary because this Comment intends only to note that each approach to the application of accretion law to mineral estates is flawed, not that one approach is better or more correct than the others. This Comment will, however, suggest that if a court is pressed to choose from one of the four approaches presented herein, it should elect to apply accretion law to both severed and unsevered mineral estates. *See infra* Part IV.C.

12. Strictly speaking, the effect of accretion law on surface estates is beyond the scope of this Comment, which focuses solely on the effect of accretion law on mineral estates. Moreover, because this Comment presents arguments suggesting that accretion should be inapplicable to both severed and unsevered mineral estates, it would seem logical that the problem lies more with accretion law itself than with its application to surface or mineral estates. As noted *infra* Part III.D, however, accretion law—at least as applied to surface estates—performs valuable functions and should not be abolished.

II. BACKGROUND AND DEFINITIONS: THE GEOGRAPHIC AND LEGAL EFFECTS OF ACCRETION IN SURFACE ESTATES

A. Preliminary Definitions and Accretion as Applied to Surface Estates

"Accretion" refers to the process by which the movement of water gradually adds soil to an adjoining shoreline such that the deposited soil becomes land and expands the boundaries of the surface estate.[13] In contrast, "erosion" refers to a loss of soil caused by water movement that diminishes the banks of a body of water.[14] For the sake of simplicity, this Comment will use the term "accretion" to refer to the combined processes of water adding to and taking away from the shoreline of a body of water.[15] The doctrine of accretion holds that accreted land becomes the property of the owner of the surface estate to which the accreted land

13. Lear, *supra* note 7, at 265. Court decisions and secondary sources also refer to accretion as an "imperceptible" addition to riparian land. *See* Norrell v. Aransas County Navigation Dist. No. 1, 1 S.W.3d 296, 298 n.2 (Tex. App. 1999) ("Texas recognizes the doctrine of accretion, under which the owner of riparian land gains title to land that accretes to his or her property by natural and imperceptible deposit."); Natland Corp. v. Baker's Port, Inc., 865 S.W.2d 52, 57 (Tex. App. 1993) ("[A]ccretion denotes the natural process of increasing real property by the gradual and imperceptible disposal of solid material to the shoreline."); Richard C. Ausness, *Wild Dunes and Serbonian Bogs: The Impact of the* Lucas *Decision on Shoreline Protection Programs*, 70 DEN. U. L. REV. 437, 439 n.24 (noting that "the doctrines of accretion, reliection and erosion only apply when the shoreline changes are 'gradual and imperceptible.'"). Indeed, "[g]radual erosion or submergence is accretion in reverse, and the imperceptible principle is applicable in distinguishing erosion from avulsion." Anderson Columbia Co. v. Bd. of Trs. of Internal Improvement Trust Fund, 748 So. 2d 1061, 1069 (Fla. Dist. Ct. App. 1999) (Benton, J., concurring).

14. *Id.*; *see also* 65 C.J.S. *Navigable Waters* § 101 (2002) ("Erosion is the gradual eating away of a riparian or littoral owner's soil by the operation of currents or tides. While the erosion process may be visible, it occurs naturally, slowly, and regularly, rather than suddenly . . . . Erosion is accretion in reverse."). Mark Twain provides an example of erosion that, although fictional, is entirely plausible:

> On the river-front some of the houses was sticking out over the bank, and they was bowed and bent, and about ready to tumble in . . . . The bank was caved away under one corner of some others, and that corner was hanging over . . . . [I]t was dangersome, because sometimes a strip of land as wide as a house caves in at a time. Sometimes a belt of land a quarter of a mile deep will start in and cave along and cave along till it all caves into the river in one summer. Such a town as that has to be always moving back, and back, and back, because the river's always gnawing at it.

MARK TWAIN, THE ADVENTURES OF HUCKLEBERRY FINN 133–34 (Barnes & Noble, Inc. 1996) (1885).

15. Kimball, *supra* note 5, at 233–34 (defining accretion and erosion, and noting that "[t]he term accretion . . . may be used to refer to the combined effect of both doctrines").

attaches,[16] and that rights of way and easements to and from the water continue over accreted land.[17]

Accretion may affect the boundaries of surface estates in a number of ways. For example, a river may serve as a boundary between two surface estates. That river may be either navigable or nonnavigable.[18] If nonnavigable, its center line is the boundary between the two estates,[19] but if navigable, the state likely owns title to the underlying riverbed under the equal footing doctrine.[20] If the

16. Some commentators have noted that accretion, without more, vests title to the accreted land in the owner of the surface estate to which the accreted land attaches. *See* Daniel F. Sullivan, *Change in Shoreline by Accretion or Avulsion*, *in* 21 AM. JUR. PROOF OF FACTS 2D § 147 (2002) [hereinafter PROOF OF FACTS] (noting that the doctrine of accretion "guarantees the riparian character of land by *automatically* granting the riparian owner title to lands that form between his holdings and the river" (emphasis added)); 55 TEXAS JURISPRUDENCE 3D *Oil and Gas* § 328 (2003) (noting that "[t]he widely accepted rule is that riparian owners acquire title to lands created by accretion or reliction"). Others, however, have noted that a surface estate owner to whose estate accreted land has attached may take title to the land by adverse possession. *See, e.g.*, MILTON R. FRIEDMAN, FRIEDMAN ON CONTRACTS AND CONVEYANCES OF REAL PROPERTY § 7.6(f) (6th ed. Supp. 2002) ("Ownership of accretions may be acquired by acquisition of title to the upland by adverse possession, regardless of the time of formation of the accretions."). Courts seem to have generally held that a surface owner need not adversely possess accreted land to take title to it. *See, e.g.*, Brainard v. State, 12 S.W.3d 6, 18 (Tex. 1999) (noting that "[a] riparian owner . . . acquires title to all [accretive] additions or extensions to the land and loses title to portions of the land that are worn, washed away, or encroached upon by the water," without mentioning any need for a surface owner to adversely possess accreted land).

17. *See* 65 C.J.S. *Navigable Waters* § 94 (2002).

18. A river is navigable in law when it is navigable in fact, and

> whether a river is navigable in fact is to be determined by inquiring whether it is used, or is susceptible of being used, in its natural and ordinary condition as a highway for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water.

Oklahoma v. Texas, 258 U.S. 574, 586 (1922). This test presumably applies to all bodies of water, including lakes, and has been adopted at the state level with additional clarifications. *See also* Bd. of Trs. of Internal Improvement Trust Fund v. Fla. Pub. Util. Co., 599 So. 2d 1356, 1357–58 (Fla. Dist. Ct. App. 1992). For instance, in determining whether a body of water is navigable, Florida courts consider whether the body of water is permanent in character and whether it is capable of navigation rather than whether it is actually used for that purpose. *Id.* at 1358. Florida courts also recognize that a determination of navigability depends on the particular facts of each case, considering such factors as the physical nature of the body of water and the extent of usage. *Id.*

19. *See* Kimball, *supra* note 5, at 234 (noting that "[w]hen a river is not navigable, the boundary between the estates on either side is typically set at the river's center line").

20. *Id.* The notion that a state owns the land underlying navigable waters stems from the equal footing doctrine. The term itself originated in the Ordinance of 1784, which provided that states admitted after the original thirteen should be admitted on an "equal footing" with the original states. *See* James R. Rasband, *The Disregarded Common Parentage of the Equal Footing and Public Trust Doctrines*, 32 LAND & WATER L. REV. 1, 32 (1997). Later,

river changes course even minutely (for instance, if the process of accretion removes sediment from one side of a river and deposits it on the other, exaggerating a bend in the river's path), the adjoining surface estates' boundaries will be correspondingly altered. If the river is nonnavigable, its center line will move with the river's changed course and alter the boundary between the two surface estates—adding to one surface estate while taking away from the other. But if the river is navigable, the boundary between the surface estates on either side of the river will be changed along with the boundaries of the state's surface estate in the riverbed.[21] A similar result occurs in the case of a lake: as the shoreline contracts or expands, the riparian boundaries of the surface estate will correspondingly contract or expand.

Two more terms are worth mentioning. "Reliction" refers to the permanent retreat of water away from the shore, exposing the lake bed and expanding the shoreline, and "avulsion" refers to movement of water that causes a sudden change to the shore, either adding or removing soil.[22] While reliction plays little role in this Comment's analysis, avulsion plays a relatively major one. A surface estate owner who has lost a portion of her surface estate may argue in court that the loss was actually due to avulsion rather than accretion, since title to a surface estate cannot be lost by avulsion.[23] In some cases, federal

in 1845, the Supreme Court decided *Pollard v. Hagan*, 44 U.S. 212 (1845), which affirmed the notion that new states enter the Union on an "equal footing," politically speaking, with the original thirteen states. Rasband, *supra*, at 36. Rasband further notes that the Court also held that "for a state to enter the Union on an eqnal footing, it must have ownership of both its uplands and its land under navigable water, although the former could be temporarily held by the United States as necessary to fulfill the deeds of cession." *Id.* However, because the specific issue in *Pollard* concerned only land under navigable water, its statement that states are entitled to uplands as well is dicta. *Id.* at 37. Subsequent Supreme Court cases have recognized that distinction, holding that, as an incident of sovereignty, states are entitled only to the land underlying navigable waters at the time of statehood. *See* Montana v. United States, 450 U.S. 544, 551 (1981) (noting that "the ownership of land under navigable waters is an incident of sovereignty" without mentioning a state's entitlement to uplands).

21. The rule is that the state's ownership of an underlying riverbed moves with the river. *See* Lear, *supra* note 7, at 278 ("Regarding beds underlying navigable water bodies, the rule seems to be that the state's title shifts with the river.").

22. *Id.* at 279–82.

23. FRIEDMAN, *supra* note 16, § 7.6(f) (noting that "[i]f the loss is sudden, i.e., by avulsion, title is not lost"); *see also* 65 C.J.S. *Navigable Waters* § 94 (2002) ("Absent clear evidence to the contrary, or countervailing evidence, when land lines are altered by the movement of a stream, it is presumed that the movement occurs by gradual erosion and accretion, rather than by avulsion. However, the presumption is overcome when the evidence sufficiently shows an avulsive change.").

and state law may conflict over what constitutes accretion or avulsion.[24] Generally, a loss or gain to a surface estate may be accretive rather than avulsive if four factors are met: first, the land in question is low in elevation; second, vegetation on the accreted land is relatively young; third, tests indicate more alluvium soil than in adjacent land; and fourth, the land in question is downstream from older property.[25]

B. The Law of Mineral Ownership in Possessory and Nonpossessory Jurisdictions

The common law rule of mineral ownership is that the owner of a surface estate owns her property up to the sky and down through the ground, limited only by the area encompassed by the surface estate boundaries. This is known as ownership ***ad coelum***[26] and is synonymous with the rule of mineral ownership in possessory jurisdictions. The boundaries of the surface estate define the boundaries of the mineral estate. In ownership ***ad coelum*** jurisdictions, the oil and gas below the surface are "as much a part of the realty as the surface itself."[27] In other words, the real estate

24. Lear, *supra* note 7, at 277 (noting that "[t]he identical action of water may be characterized as accretive under federal law and avulsive under state law").

25. *See* Laurie Smith Camp, Comment, *Land Accretion and Avulsion: The Battle of Blackbird Bend*, 56 NEB. L. REV. 814, 821 (1977), *cited in* Lear, *supra* note 7, at 278 n.84.

26. This rule is often expressed in Latin: *cujus est solum, ejus est usque ad coelum et ad inferos* ("to whomever the soil belongs, he owns also to the sky and to the depths"). Bennett, *supra* note 4, at 351 (citation omitted). A number of states adhere to this rule: Alabama, Arkansas, Colorado, Kansas, Michigan, Mississippi, Montana, Ohio, Pennsylvania, Tennessee, Texas, and Utah. *Id.* For examples of cases in which this doctrine is illustrated, see *Davis v. Johnston*, 479 S.W.2d 525, 527 (Ark. 1972) (adopting "the doctrine of ownership in place"); *Mobil Oil Corp. v. State Corp. Comm'n*, 608 P.2d 1325, 1338 (Kan. 1980) ("Kansas landowners own a present estate in the oil and gas in the ground."); *Northern Michigan Exploration Co. v. Pub. Serv. Comm'n*, 396 N.W.2d 487, 488 (Mich. Ct. App. 1986) ("Michigan is an ownership-in-place state."); *Chevron, U.S.A., Inc. v. State*, 578 So. 2d 644, 655 (Miss. 1991) (Roberson, J., dissenting) (noting that "absent contract Mississippi is an 'ownership in place' state"); *Somont Oil Co. v. A & G Drilling, Inc.*, 2002 MT 141, ¶ 26, 49 P.3d 598, 604 (Mont. 2002) (noting that "Montana is an ownership-in-place state with regard to oil, gas and other minerals"); *J.M. Huber Corp. v. Square Enters., Inc.*, 645 S.W.2d 410, 412 (Tenn. Ct. App. 1982) ("The owner of the fee absolute has the same rights and privileges with regard to the minerals as are enjoyed relative to the surface."); *Elliff v. Texon Drilling Co.*, 210 S.W.2d 558, 561 (Tex. 1948); *Neel v. HECI Exploration Co.*, 942 S.W.2d 212, 216 (Tex. App. 1997) (noting that before entering into a lease, appellants "owned the oil in place underground").

27. Bennett, *supra* note 4, at 353 (referring to the Texas Supreme Court's decision in *Texas Co. v. Daugherty*, 176 S.W. 717 (Tex. 1915)).

owned by the owner of an unsevered mineral estate in a possessory jurisdiction includes both the surface and the mineral estate.[28] Similarly, in a possessory jurisdiction, a severed mineral estate is a "separate corporeal estate" in underlying minerals.[29]

Mineral ownership in both possessory and nonpossessory jurisdictions, however, is subject to the rule of capture.[30] This rule holds that any mineral ownership that might accrue to a surface estate owner by virtue of the common law *ad coelum* ownership rule is defeasible. Title to oil and gas passes to whoever extracts it from the ground, even if someone else owned it while it was in the ground.[31] Therefore, the owner of a surface estate overlying an oil or gas reservoir may extract as much oil or gas as she desires, regardless of whether she drains a reservoir underlying an adjoining surface estate. It makes no difference that the owner of that adjoining surface estate owns all the oil underlying her property; that ownership is subject to defeasance by whoever reduces the oil to possession. The rule of capture is, in turn, limited by the doctrine of correlative rights, which seeks to minimize the waste that the law of capture is capable of causing.[32] In the accretion context, these rules mean that an owner of an unsevered mineral estate may extract whatever oil or gas underlies the surface estate, even if the surface estate boundaries somehow shift to cover what was once another's mineral estate.

Nonpossessory theories of mineral ownership hold that a surface estate owner does not own any underlying minerals until they are produced or captured.[33] The right to produce minerals is limited to

28. Averyt v. Grande, Inc., 717 S.W.2d 891, 897 (Tex. 1986) (Kilgarlin, J., dissenting on reh'g) (noting that a deed's description of real estate in an ownership-in-place jurisdiction "include[s] both the surface estate and the mineral estate").

29. Wilderness Cove, Ltd. v. Cold Spring Granite Co., 62 S.W.3d 844, 849 (Tex. App. 2001) (noting that under the ownership-in-place rule, "a severance creates a separate corporeal estate in the minerals").

30. *See* Pac. Gas & Elec. Co. v. Zuckerman, 234 Cal. Rptr. 630, 645 (Cal. Ct. App. 1987) (noting that the rule of capture is the "basic American law of oil and gas" and that other jurisdictions have achieved the result of the possessory rule of mineral ownership in different ways).

31. *Elliff*, 210 S.W.2d at 561 (noting that "the unqualified rule is that under the law of capture the minerals belong exclusively to the one that produces them").

32. Bennett, *supra* note 4, at 381–85 (noting that correlative rights restrain the law of capture and limit waste).

33. *See* 6 ENCYCLOPEDIA OF MISSISSIPPI LAW § 53:2 n.2 (2003) [hereinafter ENCYCLOPEDIA] ("Under the nonownership theory, no person owns oil and gas until it is

those who own the surface estate.[34] Nonpossessory theories come in all shapes and sizes. These include the qualified ownership theory, followed in California, Indiana, Louisiana, and Oklahoma, and the ownership of strata theory, which is likely followed in Illinois and possibly Kentucky.[35] The rationale behind nonpossessory conceptions lies in the fact that oil and gas resources are constantly in motion.[36] Nonpossessory jurisdictions adapt the rule of capture and the doctrine of correlative rights to the reality that surface estate owners do not own underlying minerals in the same sense that surface estate owners in ownership-in-place jurisdictions do.[37]

C. Defining the Problem: How Accretion Disputes Arise in Oil and Gas Law

Because mineral estate boundaries in ownership-in-place jurisdictions are defined by the boundaries of the surface estate, it follows that an accretive change in surface estate boundaries would

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produced . . . ."), *available at* WL 6 MSPRAC-ENC 53:2. The term "capture" denotes the exercise of control over an extracted mineral. It is also a term of art. *See supra* Part II.B.

34. *See id.* (noting that "the right to produce is limited to those persons who own land upon which a well may be drilled").

35. *See id.* § 53:2 & nn.2–4. Bennett, *supra* note 4, at 359, lists California, Illinois, Indiana, Louisiana, New Mexico, New York, Oklahoma, and Wyoming as nonownership jurisdictions, but does not break the category of nonownership jurisdictions down into qualified ownership and ownership of strata jurisdictions; this list is more complete than that presented in ENCYCLOPEDIA. For cases stating the positions of these jurisdictions, see Bennett, *supra* note 4, at 359 nn.78–85. At a minimum, this Comment would add Alabama to the list of jurisdictions adhering to the nonpossessory theory of mineral ownership. *See* NCNB Tex. Nat'l Bank v. West, 631 So. 2d 212, 223 (Ala. 1993) ("Alabama determines ownership of oil and gas under the nonownership theory, which recognizes the migratory nature of oil and gas and requires actual possession to establish ownership.").

The qualified ownership theory "provides that landowners whose tracts overlay a producing formation have correlative rights in the mineral formation. A mineral grantee is considered to own a *profit a prendre*." ENCYCLOPEDIA, *supra* note 33, § 53:2 n.3. The ownership of strata theory holds that "a landowner does not own oil and gas in place in his or her land, but he/she does own the strata or formations containing the oil and gas within the limits of the vertical planes representing the boundaries of his or her tract." *Id.* § 52:3 n.4. For all intents and purposes, the qualified ownership and ownership of strata theories may be classified generally as nonpossessory theories, as both hold that a surface owner does not own underlying minerals.

36. *See* ENCYCLOPEDIA, *supra* note 33, § 53:2 n.2.

37. *See* Pac. Gas & Elec. Co. v. Zuckerman, 234 Cal. Rptr. 630, 645 (Cal. Ct. App. 1987) (noting that the rule of capture and the doctrine of correlative rights apply in all jurisdictions, regardless of the theory of mineral ownership espoused); Bennett, *supra* note 4, at 381–85.

similarly affect the boundaries of the corresponding mineral estate. Nevertheless, the application of that principle, at least in ownership-in-place jurisdictions, is more complicated.[38]

Boundary changes may produce ownership disputes in situations where the surface and mineral estates are severed.[39] For instance, where a portion of a surface estate is lost to erosion, the owner of the underlying mineral estate will want to retain ownership of the portion of her mineral estate underlying the estate's lost surface. In such a case, her dispute will be with the owner of the surface estate to which the accreted land attached. Her interest may thus be aligned with that of the owner of the diminished surface estate, and they may argue that the surface estate was lost by avulsion rather than by accretion. Similarly, title disputes may arise where a lake dries, exposing part of the lake bed and increasing the shoreline, as well as where the lake dries up completely.[40] The situations in which boundary disputes between surface and mineral estate owners may arise are limited only by one's imagination; there are as many ways for such disputes to arise as there are ways to arrange subsurface mineral ownership.[41]

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38. It is unclear how the doctrine of accretion applies to mineral estates in nonpossessory jurisdictions. *See infra* Part IV.B (arguing that accretion should not apply at all to mineral estates in nonpossessory jurisdictions).

39. FRIEDMAN, *supra* note 16, § 7.6(f) ("When accretion or erosion occur after severance of the mineral estate from the surface, a dispute may arise between the surface and the mineral owners as to ownership of mineral rights associated with the added or lost land.").

40. *See* Lear, *supra* note 7, at 266 (noting that "one immutable drawback . . . to the use of water bodies as boundaries" is that "[r]ivers and streams change their courses and channels" and that "[l]akes recede or go dry").

41. For an interesting example of accretion problems arising in an international arena, see *State v. Balli*, which dealt with a title and possession dispute over Texas's Padre Island between the State of Texas and claimants under the 1811 will of Padre Nicolas Balli. 190 S.W.2d 71, 73 (Tex. 1944). Specifically, Texas claimed ownership over accretions to Padre Island and argued that, under the law of the Mexican state of Tamaulipas (which governed in 1811), "accretions by the sea became the property of the sovereign." *Id.* at 98. The claimants under Padre Balli's will asserted that

> the law of accretion, erosion and alluvion in effect in the State of Tamaulipas at the time of the grant was practically the same as the rule of the common law and that all fast land above mean high tide which ha[d] formed on the shores of Padre Island since the grant belonged to the owners of the soil.

Id. at 98–99. In a forty-three-page opinion, which includes three separate dissents, the Texas Supreme Court held for the claimants under the Balli will. *Id.* at 101. The *Balli* decision did not concern the effect of accretion on mineral estates, but—as noted *supra* Part II.B—ownership of Padre Island's surface estate dictated ownership of the underlying minerals in a possessory jurisdiction such as Texas. *See supra* note 26 (listing Texas as a possessory

III. THE ALTERNATIVES IN ACCRETION AND THEIR INADEQUACIES

This section details four potential alternatives for applying accretion law to mineral estates. First, it presents the alternative the courts have chosen: subjecting both severed and unsevered mineral estates, as well as surface estates, to accretion. Second, it presents an alternative derived from criticisms of the courts' approach, namely, subjecting only surface estates and unsevered mineral estates to accretion. Third, it suggests immunizing both severed and unsevered mineral estates from accretion. Fourth, it suggests abolishing accretion law entirely. However, each of these alternatives is subject to criticism.[42] Subjecting both severed and unsevered mineral estates to accretion ignores the fact that severed surface and mineral estates are two separate estates. It would not, as the courts have suggested, allow a landowner to convey a greater estate than she possesses, but it would neglect the origins of accretion law, and may force good-faith mineral developers to incur damages for inadvertent subsurface trespasses. But subjecting only unsevered mineral estates to accretion would make mineral estate boundary determinations costly and difficult. Immunizing both severed and unsevered mineral estates from accretion, while potentially justified by the same rationales that support the second alternative, would make mineral estate boundary determinations even more difficult and costly. Finally, abolishing accretion entirely would not only contravene well-established policies, but could produce de facto severances of surface and mineral estates.

A. The First Alternative: Subjecting Severed and Unsevered Mineral Estates to Accretion

Three jurisdictions—Oklahoma, Montana, and Texas—have held that both severed and unsevered mineral estates are subject to

jurisdiction). *Balli* serves as an example of the potential complexity of accretion cases, whether or not they bear directly on mineral ownership. For more discussion of *Balli*, see Andrew Walker, *Mexican Law and the Texas Courts*, 55 BAYLOR L. REV. 225, 259–61 (2003).

42. This Comment will not attempt to prove that any one alternative is "right" or "wrong." Rather, it will argue that no alternative is without flaw in either its premises or its real-world result in an attempt to demonstrate that the application of accretion law to mineral estates in any circumstance breeds confusion and contradiction. *See supra* note 11. Nevertheless, this Comment argues that, if pressed, courts should apply accretion law to both surface and mineral estates. *See infra* Part IV.C.

accretion.[43] North Dakota has reached a similar result by interpreting one of its statutes.[44] This section begins by presenting the arguments made by the first three jurisdictions to support their conclusion. It then presents North Dakota's rationale. Finally, it presents commentators' criticism of the courts' approach.

1. Arguments for applying accretion law to both severed and unsevered mineral estates

a. Conveyance of a greater mineral estate than that possessed. Refusing to apply accretion to severed mineral estates would allow "fee owners to convey a greater mineral estate than they . . . possessed," a result that would fly in the face of accepted property law.[45] Specifically, refusing to apply accretion to severed mineral estates would produce a situation where an unsevered mineral estate would be subject to loss, while a severed mineral estate would not be.[46] Because unsevered mineral interests are subject to loss through accretion, holding accretion inapplicable to severed mineral estates would allow an owner of an unsevered estate—which is diminishable by accretion—to convey an undiminishable mineral interest, which would be contrary to the accepted property law rule that a grantor cannot convey a greater estate than she possesses.[47]

b. "Gross inequities" between similarly situated severed and unsevered mineral estates. Also, immunizing severed mineral estates from accretion may create situations where, if a river separates a severed mineral interest from an unsevered mineral interest, the severed mineral interest could only increase in size while the unsevered mineral interest runs the risk of diminishment.[48] At least one court has noted that such a result could produce "gross inequities" in the

43. Nilsen v. Tenneco Oil Co., 614 P.2d 36 (Okla. 1980); Jackson v. Burlington N. Inc., 667 P.2d 406 (Mont. 1983); Siegert v. Seneca Res. Corp., 28 S.W.3d 680 (Tex. App. 2000); Ely v. Briley, 959 S.W.2d 723 (Tex. App. 1998).

44. J.P. Furlong Enters., Inc. v. Sun Exploration & Prod. Co., 423 N.W.2d 130 (N.D. 1988).

45. *Nilsen*, 614 P.2d at 41. The Oklahoma Supreme Court also dealt with adverse possession issues specific to the facts of the case before it. Those issues are not germane to this discussion, which seeks to approach the problem of accretion's effects on mineral estates in the most general terms possible so as to avoid becoming mired in the facts of particular cases.

46. *Id.* at 42.

47. *Id.* at 41–42.

48. *Id.* at 42.

respective rights of the owners of severed and unsevered mineral interests.[49]

c. Mineral estate owners are not defenseless. Because mineral estate owners have a right of ingress and egress across the overlying surface estate, those owners can take action to protect their mineral interests from loss by erosion.[50] Mineral owners are not defenseless against the loss of their mineral interests. If mineral owners have as an incident to their ownership "the rights and privileges . . . necessary for profitable production" of their minerals, they have a right to alter the surface estate to prevent erosion unless the agreement between the surface and mineral owners provides otherwise.[51]

d. States could lose portions of mineral estates. A rule fixing mineral estates' boundaries at the time of severance would cause a state's ownership of minerals to not correspond with the waterway's boundaries. State ownership of underlying minerals would be subject to the decision of a riparian owner to sever her estate.[52] If severed mineral estate boundaries were fixed at severance, the state could lose portions of the mineral estate to which it was entitled by statute.[53]

e. Private parties could impede the use of the waterway for commercial purposes. Private parties, left to develop minerals underlying navigable waterways, could impede the use of the waterway for commercial or recreational purposes.[54]

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49. *Id.*

50. *Id.* at 42–43.

51. *Id.* at 43 (emphasis omitted); *see also* Bennett, *supra* note 4, at 381–85 (discussing correlative rights and waste).

52. Jackson v. Burlington N. Co., 667 P.2d 406, 408 (Mont. 1983). See *supra* note 20 for an explanation of the equal footing doctrine as the reason why a state owns the land underlying navigable waters. The Montana Supreme Court expressly adopted the *Nilsen* rationale in holding that severed mineral estates are subject to accretion. *Jackson*, 667 P.2d at 408.

53. *Jackson*, 667 P.2d at 408. The Montana Supreme Court in *Jackson* was referring to a Montana statute that explicitly recognizes state ownership of land beneath navigable waterways. *See* MONT. CODE ANN. § 70-1-202 (2000).

54. *Jackson*, 667 P.2d at 408.

f. Mineral estate boundaries may become difficult to ascertain. If accretion were held inapplicable to mineral estates an owner may be left with incongruous surface and mineral estates.[55] For instance, an owner could see her surface estate increase due to accretion, but her corresponding mineral estate would not increase, resulting in a mineral estate whose boundaries no longer correspond with the surface estate.[56] This is unacceptable because it would make mineral estate boundaries difficult to ascertain.[57]

g. Severed mineral interests are property interests that possess all the characteristics of an estate in land. A severed mineral interest is a property interest that "possesses all the incidents and attributes of an estate in land."[58] Because a mineral estate is a property interest just like a surface estate, and surface estates are subject to accretion, mineral estates should likewise be subject to accretion.[59]

h. Groundless distinction in the bundle of property rights. At least one court has noted, without elaborating, that refusing to recognize accretion's application to severed mineral estates "would create a groundless distinction in the bundle of property rights accorded the two groups of property owners."[60] That court refused to "countenance the inequity of such a system."[61]

i. The North Dakota approach. Though presented in a different context, the North Dakota Supreme Court, in *J.P. Furlong*

55. *Id.* at 409; *see also* Ely v. Briley, 959 S.W.2d 723, 726 (Tex. App. 1998); Siegert v. Seneca Res. Corp., 28 S.W.3d 680, 684 (Tex. App. 2000). For a discussion of *Ely*, see Richard F. Brown, *Oil, Gas, and Mineral Law*, 52 SMU L. REV. 1323, 1325–26 (1999) [hereinafter Brown, *Mineral Law I*]. For a discussion of *Siegert*, see Richard F. Brown, *Oil, Gas, and Mineral Law*, 54 SMU L. REV. 1521, 1526–27 (2001) [hereinafter Brown, *Mineral Law II*].

56. *Jackson*, 667 P.2d at 409.

57. *Id.*

58. *Ely*, 959 S.W.2d at 726 (quoting Harris v. Currie, 176 S.W.2d 302, 305 (Tex. 1943) (quotations omitted)); *see also Siegert*, 28 S.W.3d at 684.

59. *Ely*, 959 S.W.2d at 726.

60. *Id.*

61. *Id.* Interestingly, the Texas Court of Appeals in *Ely* also noted that "the right to increase by accretion is part of the bundle of riparian property rights . . . ." *Id.* at 727. "[A]n unqualified reservation of the mineral estate reserves the entire bundle of property rights accorded a mineral estate," and "an unqualified reservation of [the] riparian mineral estate reserves the right to future accretion." *Id.*; *see also* Brown, *Mineral Law II*, *supra* note 55, at 1526.

Enterprises, Inc. v. Sun Exploration and Production Co.,[62] held that accretion may affect a severed mineral estate.[63] The issue in this case was whether a particular provision of the North Dakota Code providing for indemnity for land lost by the movement of a stream bed[64] applies to manmade deviations in the course of the river.[65] The court noted that North Dakota's statutes recognized the common law rule of accretion stemming from "natural" causes.[66] The statute therefore required "natural" causes for accretion to apply—a deviation from the common-law rule.[67] Similarly, another provision in the North Dakota Code modifies the common-law rule of avulsion by allowing the owner of the lost land to reclaim her land within a year after the new owner takes possession;[68] this statute treats natural and manmade avulsion alike.[69] An analysis of the history of that statute indicated that, unlike the common law, the North Dakota rule was that the state's title to the riverbed moved with the river only if the river moved by avulsion.[70] Therefore, those parties claiming oil and gas interests on what has been the state's interest prevailed.[71] They gained title to the surface estate by virtue of accretion, and had sustained a corresponding gain in mineral interest because they then owned all the minerals underlying their surface estate.

62. 423 N.W.2d 130 (N.D. 1988).

63. *Id.* at 140. In *J.P. Furlong*, the mineral estate was severed by virtue of the fact that the condemnation decree by which the United States acquired the land in question stipulated that the condemnee retained "all oil and gas rights." *Id.* at 131.

64. N.D. CENT. CODE § 47-06-07 (1999) provides that "[i]f a stream, navigable or not navigable, forms a new course abandoning its ancient bed, the owners of the land newly occupied take by way of indemnity the ancient bed abandoned, each in proportion to the land of which the owner has been deprived."

65. *J.P. Furlong*, 423 N.W.2d at 131–32.

66. *Id.* at 133. N.D. CENT. CODE § 47-06-05 provides that "[w]here from natural causes land forms by imperceptible degrees upon the bank of a river or stream, navigable or not navigable . . . such land belongs to the owner of the bank, subject to any existing right of way over the bank."

67. *J.P. Furlong*, 423 N.W.2d at 134.

68. *Id.* N.D. CENT. CODE § 47-06-06 provides that, in the case of avulsion, "the owner of the part carried away may reclaim it within a year after the owner of the land to which it has been united takes possession thereof."

69. *J.P. Furlong*, 423 N.W.2d at 134.

70. *Id.* at 137; *see also supra* Part II.A (noting that the common law rule was that title to land did not transfer if the change in boundary was due to avulsion).

71. *J.P. Furlong*, 423 N.W.2d at 140.

2. Criticisms of the first alternative: why the courts' approach is untenable

Having painted a landscape of cases holding that mineral estates both severed and unsevered are susceptible to accretion, this section will illustrate why the courts' answer to the accretion problem, though not necessarily right or wrong,[72] is at least flawed in both its premises and its results.[73] To do so, it will draw both on the dissenting opinions from the cases holding that severed mineral estates are subject to accretion and on secondary sources[74] that have opposed the courts' approach. There are at least four flaws with the courts' approach. First, severed surface and mineral estates are actually two separate estates and the boundaries of the surface estate should not affect the boundaries of the mineral estate. Second, it is not the case, as the majority in *Nilsen v. Tenneco Oil Co.* argued,[75] that a property owner is per se barred from conveying a greater estate than she possesses. Third, accretion law was originally intended to apply only to surface estates. Fourth, applying accretion law to severed mineral estates may force good-faith developers of oil and gas resources to pay damages for subsurface trespass.

a. Severed surface and mineral estates are two separate estates. Because severed surface and mineral estates are in fact two separate and distinct estates, whether the surface estate is subject to accretion should have no effect on the boundaries of the mineral estate.[76] The

72. *See supra* note 42. See also *infra* Part IV.C for an explanation of why this alternative may nevertheless be the superior of the four presented in this Comment.

73. Regardless of the substantial amount of criticism that has been leveled at the courts' approach, it seems to be here to stay. Indeed,

> [a]s a practical matter, there is little likelihood that a result contrary to the *Nilsen* and *Jackson* holdings will be forthcoming from other jurisdictions. Moreover, the Department of the Interior appears to have adopted the position that the severed mineral interests of the United States are subject to accretion, for "where the United States has patented lands subject to an oil and gas reservation, lands accreting to the patented lands are also subject to the reservation."

Wilson, *supra* note 7, § 14.02[4][b], at 14-35 (citation omitted).

74. While those secondary sources support the arguments in this section, there may be some problems with their analysis. See *supra* note 8 and *infra* Part III.B for an explanation of why, even though secondary sources have touched on this issue, the body of scholarship is inadequate and possibly incorrect.

75. Nilsen v. Tenneco Oil Co., 614 P.2d 36, 41–42 (Okla. 1980).

76. *See* Murphree, *supra* note 7, at 827–30. Other states have also adhered to this principle. *See, e.g.*, Wilderness Cove, Ltd. v. Cold Springs Granite Co., 62 S.W.3d 844, 849

severance of the mineral estate from the surface estate creates two distinct estates: a severed mineral interest that is subject to recording statutes and cannot be lost by nonuser,[77] and the surviving surface estate. Therefore, just as a change in boundary of one surface estate does not necessarily alter the boundaries of an adjoining surface estate, a change in boundary of a severed surface estate should not alter the boundaries of a corresponding severed mineral interest.[78]

Also, surface and mineral estates are distinct geologically and spatially.[79] Specifically, mineral estates are not subject to diminishment or enlargement because of water movement.[80] Because only the surface estate is so subject, only it—and not the mineral estate—can be diminished or enlarged by water movement. In other words, contiguity to water is required for the doctrine of accretion to apply, and mineral estates are not contiguous to water, but rather underneath the bed or next to it.[81] It is therefore a fiction to allow

(Tex. App. 2001) (noting that under the ownership-in-place doctrine, a mineral estate's severance from the surface estate creates a "separate corporeal estate in the minerals").

77. Murphree, *supra* note 7, at 827 (citing 1 E. KUNTZ, OIL AND GAS § 3.1 (W.H. Anderson ed., 1962)); *see also Nilsen*, 614 P.2d at 44 (Doolin, J., dissenting).

78. Murphree, *supra* note 7, at 827–28. The dissenting opinion in *Jackson v. Burlington Northern Inc.*, 667 P.2d 406, 410–11 (Mont. 1983) (Davis, J., dissenting), adopted the *Nilsen* dissent's argument that severed mineral estates are separate "fingers" or estates in land. In so arguing, it referred to a case from the Queen's Bench Court of Alberta, Canada. The Canadian court held that, in a case where a private party and the Crown (the state) claimed ownership of a dry lake bed, the drying of the lake caused the lake bed to accrete to the private party, who presumably owned the land surrounding the lake. The court in that case noted that if the Crown had desired to retain the mineral interest it had lost, it could have severed the two estates. In other words, the Crown lost its mineral interest because the surface and mineral estates were unsevered, but if the Crown had severed the surface from the mineral estate and retained the latter, it could have retained its mineral rights. According to the Canadian case, therefore, the doctrine of accretion should not apply to severed mineral estates. *Id.* at 411 (citing Eliason v. Alberta (Registrar, North Alberta Land Registration District), 115 D.L.R.3d 360 (Alta. Q.B. 1980)). Presumably, Canada recognized a form of the principle that the state owns the land underlying navigable waters, the American version of which was explained earlier. See *supra* note 20 for an explanation of the United States version of the equal footing doctrine.

79. *See* Lear, *supra* note 7, at 283 ("Suffice it to say that severed mineral estates do not suffer or benefit, as a factual matter, from the effects of water movement. Mineral estates do not erode. They do not benefit from alluvial build-up as a practical matter. . . . And, they do not suffer or benefit from avulsive actions."); *see also Nilsen*, 614 P.2d at 43 (Doolin, J., dissenting).

80. *See* Lear, *supra* note 7, at 283.

81. *Nilsen*, 614 P.2d at 44 (Doolin, J., dissenting) (noting that accretion "protects the right of the riparian or littoral owner to the accumulation of precious metals or stones on the bank of the stream as well as his right to the alluvial soil itself," but that it should not protect

severed mineral estate boundaries to expand and contract with accretive changes to the surface estate, as the forces of accretion do not properly act on the mineral estate.

b. No greater estate is conveyed. It is also not the case that immunizing severed mineral estates from accretion would violate a cardinal principle of property law by allowing a landowner to convey a greater estate than she possesses.[82] That argument is indefensible for two reasons. First, commentators contend that the principle that a landowner cannot convey a greater estate than possessed has not been consistently applied in all fields of property law.[83] For example, in Oklahoma, a life tenant given power to convey property can validly convey a fee simple estate. This is evidently based on the policy that the intent of the grantor of the life tenant should overcome a formalistic policy of not allowing grantors to convey more than they possess.[84] Moreover, a bona fide purchaser may take her land free of mortgage if that mortgage is unrecorded.[85]

Good public policy offers the second rationale for arguing that the rule that a grantor cannot convey a greater estate than possessed is inapplicable in some cases.[86] Public policies sufficient to merit avoidance of that rule include eliminating extra costs or conflicts stemming from the rule of accretion and fostering productivity among mineral estate owners.[87] Commentators argue that the rule that a grantor cannot convey more than she possesses is a formalism,

"separate mineral estates such as oil and gas that are locked deep in the bowels of the earth, for they are separate fingers, parcels or estates in the land").

82. *Id.* at 41–42.

83. *See* Murphree, *supra* note 7, at 829.

84. *Id.* (citing Watkins v. French, 299 P. 900 (Okla. 1931)). Though this argument may be valid, it is not particularly persuasive as it flies in the face of established property law. *See* Bruce M. Kramer, *The Sisyphean Task of Interpreting Mineral Deeds and Leases: An Encyclopedia of Canons of Construction*, 24 TEX. TECH L. REV. 1, 123 n.568 (1993) ("There is a rule of law that one cannot convey a 'greater estate' than one possesses. That is a rule of law and not a canon of construction." (citing Extraction Res., Inc. v. Freeman, 555 S.W.2d 156, 159 (Tex. Civ. App. 1977)).

85. *Id.* (citing Pierce v. Duckett, 10 P.2d 697 (Okla. 1932)).

86. *Id.* ("It seems that the greater estate restriction will be espoused only when its application would not thwart public policy."); *see also* Kimball, *supra* note 5, at 240 (noting that "the axiom has not been applied when opposing policy concerns are sufficiently implicated").

87. Kimball, *supra* note 5, at 242–45.

ignorant of the realities of mineral ownership.[88] There are at least some instances where the rule should be held inapplicable.

c. Originally, the doctrine of accretion was intended to apply to surface estates. Accretion law developed to assist surface estate owners; not mineral estate owners.[89] The accretion rule originated on the premise that a landowner who had lost portions of land to erosion would not be able to identify her lost property. Lost land should therefore belong to the person to whom it attaches.[90] That rationale is inapplicable to severed mineral estates because, as already noted, nothing has been taken away from or added to the mineral estate.[91] Also, accretion law has been justified on the ground that parties to a conveyance probably intended the body of water to border the land. In other words, surface owners, when conveying and purchasing land, intended the land to be bound by water.[92] Moreover, the importance of access to water has been an influential justification for the doctrine of accretion, as it prevents landowners from being separated from the water access for which they might have purchased the land.[93] Both of these rationales are inapplicable to severed mineral estates. An owner of a severed mineral estate probably cares little about whether water bounds the surface estate and likely has little need for access to water.[94]

d. Developers' potential liability for inadvertent subsurface trespass. Another problem that may result from allowing the doctrine of accretion to apply to mineral estates—severed or unsevered—is the increased likelihood of inadvertent subsurface trespass onto the land to which accreted land has attached.[95] A subsurface trespass consists of inserting a well into another landowner's mineral estate without

88. *Id.*; Murphree, *supra* note 7, at 829.

89. Murphree, *supra* note 7, at 832–33; *see also Nilsen*, 614 P.2d at 43 (1980) (Doolin, J., dissenting) (noting that accretion law was designed to protect a surface owner's interest in precious minerals that appear on the surface by virtue of accretion).

90. Murphree, *supra* note 7, at 832–33.

91. *Id.* at 833.

92. *Id.*

93. *Id.*

94. *Id.*

95. The secondary sources that outlined the first three hazards to the first approach do not mention this fourth potential hazard.

the consent of that landowner,[96] usually through the use of a directional well.[97] For example: a developer drills a directional well on her land to capture oil from a difficult-to-reach reservoir, but the directional well comes close to moving under a riverbed. If the river is nonnavigable and moves toward the well, the river's center line[98] may move over the directional well; in that case, the directional well would be under another's surface estate and invade that person's mineral estate in a subsurface trespass.[99] Such a situation would not immediately constitute a trespass, since the developer clearly did not intend to trespass, intend to enter another's mineral estate, or even inadvertently enter someone else's mineral estate. Indeed, the second landowner's mineral estate came to the developer, not vice versa, and that fact likely absolves him of trespass liability, at least initially.[100] Nevertheless, the fact remains that the developer's directional well has invaded another's mineral estate, and once that fact is discovered and made known to the developer, the developer may be required to

96. Cont'l Res., Inc. v. Farrar Oil Co., 559 N.W.2d 841, 844 (N.D. 1997) (defining subsurface trespass as "[t]he bottoming of a well on the land of another without his consent" (quoting HOWARD R. WILLIAMS & CHARLES J. MEYERS, MANUAL OF OIL AND GAS TERMS 1211 (8th ed. 1991))); *see also* 1 PATRICK H. MARTIN & BRUCE M. KRAMER, WILLIAMS AND MEYERS OIL AND GAS LAW § 227 (2002) ("The drilling of a well bottomed on the land of another is a trespass, although the surface location of the well is on the driller's own land. [Intent] is immaterial to the commission of the trespass, which occurs when there is unauthorized entry upon the land of another.").

97. Directional drilling is the insertion of a drill into the ground at an angle that deviates from the vertical. Its purpose is to allow developers to extract oil and gas from areas not located directly under the well; it allows developers to reach reservoirs of oil and gas that they might not otherwise be able to reach, for whatever reason. Larry R. Jensen, Comment, *Ensuring the Purity of the Great Lakes: A Case for Federal Intervention in the Directional Drilling Process*, 1998 DET. C.L. REV. 293, 296–97 (1998).

98. *See* Kimball, *supra* note 5, at 234 (noting that "[w]hen a river is not navigable, the boundary between the estates on either side is typically set at the river's center line").

99. If the river is navigable, however, the developer's directional well may simply pass under the newly-located river without incurring liability for subsurface trespass, as the common law rule is that the state's title to a riverbed does not move with a migrating river. *See supra* Part III.A.1.i (noting that North Dakota's statute abrogated the common law rule that the state's title to a riverbed did not move with the river); *see also supra* note 20 (explaining the origins of the equal footing doctrine and the rule that a state, upon entering the Union, retains title to land underlying navigable waters).

100. RESTATEMENT (SECOND) OF TORTS § 158 cmt. f (1965) ("Tort liability is never imposed upon one who has neither done an act nor failed to perform a duty. Therefore, one whose presence on the land is not caused by any act of his own or by a failure on his part to perform a duty is not a trespasser.").

remove her directional well from the other's mineral estate.[101] If the developer knowingly refuses to remove the directional well, a trespass may result, as that tort's intent requirement would likely be satisfied.[102]

In these cases, the developer would incur unfair costs in two ways. First, the developer would incur the cost of removing her operations so as to avoid further trespass. Second, the developer would have to pay damages to the encroaching landowner. The developer would likely be considered a good-faith trespasser,[103] so she would be obligated to pay the equivalent of the value of oil extracted from the other's mineral estate less the cost of producing

101. "One is subject to liability to another for trespass, irrespective of whether he thereby causes harm to any legally protected interest of the other, if he intentionally . . . fails to remove from the land a thing which he is under a duty to remove." *Id.* § 158. Section § 160 notes that

> A trespass may be committed by the continued presence on the land of a structure, chattel, or other thing which the actor or his predecessor in legal interest has placed on the land (a) with the consent of the person then in possession of the land, if the actor fails to remove it after the consent has been effectively terminated, or (b) pursuant to a privilege conferred on the actor irrespective of the possessor's consent, if the actor fails to remove it after the privilege has been terminated, by the accomplishment of its purpose or otherwise.

Id. § 160. As of the RESTATEMENT (SECOND) OF TORTS, published in 1965, the factual situation highlighted in this section was a gray area. In a caveat to section 160, the American Law Institute (ALI) specifically noted that it "expresses no opinion as to whether there is a duty to remove from another's land a structure, chattel, or other thing in the possession of the actor which was carried or forced on the land without the actor's fault." *Id.* § 160 caveat. The developer will nevertheless likely choose to remove the directional well to avoid a lawsuit, even if the lawsuit cannot be maintained. Even so, the ALI has left courts free to determine for themselves whether to impose a duty to remove the trespassing object in such a situation.

102. In a tentative draft of the RESTATEMENT (THIRD) OF TORTS, the ALI stated that "[a] person acts with the intent to produce a consequence if: (a) The person has the purpose of producing that consequence; or (b) The person knows to a substantial certainty that the consequence will ensue from the person's conduct." RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL HARM § 1 (2001) (Tentative Draft No. 1). Intent would lie in such a case because the developer would either have intentionally left the directional well in the other's mineral estate in contravention of the other owner's wishes for its removal, or would have acted at least with a substantial certainty that a trespass and resulting extraction and conversion of the other's oil would occur. On another note, this definition of intent may impose liability for intentional trespass if the developer drills a directional well or places a vertical well very near a body of water known to be eroding or accreting; in such a situation, it may be found that the developer acted with a substantial certainty that a trespass and resulting conversion of oil would occur.

103. *See* 1 MARTIN & KRAMER, *supra* note 96, § 227 (noting that a trespass is in bad faith "if the driller intentionally bottomed the well on another's land").

that oil.[104] The developer would thereby be deprived of a profit she would have made were it not for the application of the rule of accretion to mineral estates. She must essentially purchase the extracted oil from its rightful owner, attempt to sell it on the market, and hopefully break even. Even if she is able to sell the oil at a higher price than she paid for it, she could nevertheless have received a higher profit had she not been required to purchase the oil from the owner-by-accretion. Both these potential costs accrue in spite of the fact that the developer had no intention whatsoever of trespassing and was pursuing her mineral interests in good faith.

B. The Second Alternative: Subjecting Only Surface Estates and Unsevered Mineral Estates to Accretion

Criticisms of the courts' approach give rise to a second alternative for dealing with the application of accretion law to severed mineral estates, namely, subjecting only surface estates and unsevered mineral estates to accretion. The preceding section discussed the justifications for that alternative: it takes into account the separate nature of surface and mineral estates; it correctly recognizes that a landowner may occasionally grant greater estates than she possesses; it recognizes the origins and purpose of accretion law; and it allows good-faith developers to avoid paying damages for

104. *See* Champlin Ref. Co. v. Aladdin Petroleum Corp., 238 P.2d 827, 830 (Okla. 1951). The rule is that

> [w]here a person in good faith enters into peaceable possession of land upon which he owns an oil and gas lease and produces oil and gas therefrom, and thereafter said lease is declared void or invalid, the measure of damages to the landlord in an action for an accounting for the oil and gas produced from said premises by the lessee is the value of the oil at the surface or in pipe line or tanks wherever the same may be, less the reasonable cost of producing the same.

Id. A situation in which accretion produces an inadvertent subsurface trespass probably falls within this rule, as encroachment of water and the subsequent change in mineral estate boundaries would almost certainly render a lease void or invalid at least for that part of the estate which the directional well penetrated. *See also* 1 MARTIN & KRAMER, *supra* note 96, § 227 (noting that a bad faith trespasser will be held "liable for the value of the oil at the surface, *i.e.*, without a credit for drilling and operating costs"). Note that oil and gas law imposes a measure of damages on even good-faith trespassers. Normally, a plaintiff can obtain nominal damages even if the trespass did no actual harm to the person's estate. *See* VICTOR E. SCHWARTZ ET AL., PROSSER, WADE, AND SCHWARTZ'S TORTS: CASES AND MATERIALS 64 (9th ed. 2000) (noting that "[i]n a trespass action, plaintiff will be awarded nominal damages if there are no actual (compensatory) damages"). However, in the oil and gas context, trespass most often results in the extraction of oil that properly belongs to someone else, requiring additional compensation beyond nominal compensation.

inadvertent subsurface trespasses.[105] Be that as it may, though, some of the courts' concerns about immunizing severed mineral estates are equally valid.

In cases where the boundaries of an overlying surface estate fluctuate with respect to those of an underlying severed mineral estate with frozen boundaries, the courts' fear that the boundaries of the surface estate would not coincide with those of the underlying mineral estate[106] would come true. In those cases, ascertaining mineral estate boundaries may become trickier. Of course, in many cases under the current rule, the boundaries of an unsevered mineral estate correspond to those of the overlying surface estate. Those boundaries may be determined in a number of ways, such as surveying[107] or using a combination of physical landmarks (rivers, mountains, and other geographical markers) that can act as boundaries.[108] Should accretion be held inapplicable to mineral

105. *See supra* Part III.A.1.

106. *See supra* Part III.A.1.f.

107. It is not really in question that surveying may establish the boundaries of a mineral estate. *See, e.g.*, Kimball, *supra* note 5, at 233 (noting, after stating its position that accretion should not apply to severed mineral estates, that "the subsurface boundary should be determined by survey when the mineral estate is severed"); *see also id.* at 250 (noting that "the fixed boundary of a severed mineral estate is . . . easily established by survey"). Surveyors may ascertain mineral estate boundaries by surveying surface estate landmarks. *See* Richfield Oil Corp. v. Crawford, 249 P.2d 600, 607 (Cal. 1952) (describing how a surveyor used surveying to define the boundaries of a surface estate in order to determine whether an oil company had committed a subsurface trespass of that estate). Rather than debate the viability of surveying as a means of ascertaining mineral estate boundaries, this section attacks the assumption that all mineral estate owners vigilantly monitor the boundaries of their mineral estates for the effects of accretion.

108. *See, e.g.*, Perkins v. Conary, 295 A.2d 644, 645 (Me. 1972) (describing the boundaries of a surface estate in terms of natural landmarks, such as a pond). Indeed, "[t]he prevailing rule respecting the establishment of boundaries is that calls for distances are controlled by and must yield to natural objects or landmarks or permanent artificial monuments. Purchasers look to actual monuments, which they are, or should be, careful to preserve." *Id.* at 646.

In *Diederich v. Ware*, the Kentucky Supreme Court dealt with the question of "[w]here there has been a severance of title to minerals from the title to the surface of land . . . whether the working of a part of the mineral estate is sufficient to give title by adverse possession to the mineral underlying the whole of it." 288 S.W.2d 643, 646 (Ky. 1956). That case cites a number of decisions that hold that "such a working is not sufficient" and notes that those decisions were

> based on the conclusion that once one gets below the surface there are no clear boundaries for defining the limits of the mineral estate—that color of title bonndaries under ground are difficult to locate and that the fencing off of the

estates, a body of water could no longer be used as a physical boundary, but the surveyed boundaries of the former surface estate would nevertheless accurately delineate the boundaries of the underlying mineral estate. Also, fixed geographic landmarks could still delineate mineral estate boundaries.

It may sound preposterous at first to suggest that every mineral estate owner survey the current boundaries of her mineral estate in connection with the surface estate, but this may not be as much a chore as it might seem. Only surface estates that may be affected by accretion need do this. This would exclude landlocked surface estates and surface estates where bodies of water do serve as boundaries, but the body of water is not big enough or forceful enough to cause accretion. Only surface estates bordering large rivers, large lakes, or oceans need to survey their mineral estate boundaries. Furthermore, such a requirement would not be excessively onerous, given that most surface estate owners already survey their surface estate boundaries. Because all mineral estate boundaries currently correspond to surface estate boundaries, those owners could simultaneously survey their mineral estate at little or no extra cost or burden.

In some cases, though, mineral estate owners may not realize that the surface estate is eroding or that another's land is accreting to it, particularly given that accretion, by definition, is a slow process.[109] If mineral estate owners do not notice surface accretion or avulsion for a long time, substantial disparity between surface and mineral estate boundaries can result, with the possibility existing that pre-accretion or erosion surface estate boundary records are no longer available. Unless they are vigilant, mineral estate owners may therefore find their mineral estate boundaries difficult to ascertain.

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subterranean area claimed can best be determined by confining it to the specific area actually mined.

Id. The Kentucky Supreme Court criticized that rationale on the ground that it "ignores the fact that mineral estates are generally described by metes and bounds marked off on the surface." *Id.* At least in the adverse possession context, courts have recognized the possibility of determining the boundaries of a mineral estate with reference to surface landmarks.

109. *See supra* note 13 (noting that accretion is the imperceptible augmentation of riparian land). *See also infra* note 156 (arguing that in spite of the fact that accretion is by definition slow and imperceptible, vigilant landowners may nevertheless monitor surface estate boundaries).

C. The Third Alternative: Immunizing All Mineral Estates from Accretion

A third alternative for the application of accretion law to mineral estates is to immunize all mineral estates from the effects of accretion. This section will first present justifications for such a rule. Specifically, the same considerations that justify the second alternative justify the third alternative. This section discusses how the same justifications for the courts' approach—subjecting only surface estates and unsevered mineral estates to accretion—partially justify this third approach. But it also asserts that such a rule would both produce de facto severances of surface and mineral estates in contravention of surface and mineral estate owners' intent and would multiply the boundary ascertainment problems the second alternative would produce.

1. Justifications for immunizing all severed and unsevered mineral estates from accretion

The following sections illustrate that the same rationales that justify immunizing severed mineral estates from accretion also justify immunizing unsevered mineral estates.

a. Protecting developers from unnecessary subsurface trespass costs. A rule forbidding the application of accretion to any mineral estate, severed or unsevered, would protect developers from hidden and unnecessary costs resulting from subsurface trespass.[110] The concept is simple: if mineral estate boundaries are incapable of expanding, developers may drill directional wells without fear of another mineral estate's encroachment upon the directional well.[111] If mineral estates are prohibited from expanding their boundaries by virtue of accretion, a developer would either have to intentionally or inadvertently commit a subsurface trespass by introducing her directional well into another's mineral estate.[112] Either way, the odds of such a trespass are reduced.

110. *See supra* Part III.A.2.d for a discussion of subsurface trespass as it may arise in the context of oil and gas drilling.

111. For an explanation of how mineral estates may encroach upon directional wells, see *supra* Part III.A.2.d.

112. For an explanation of subsurface trespass, see *supra* Part III.A.2.d. For a discussion of intent, see *supra* note 102.

Of course, if a surface estate encroaches upon a well because of accretion, the developer may still be required to remove the well to avoid surface trespass damages.[113] Nevertheless, because the underlying mineral estate boundaries would not have expanded with those of the surface estate, the developer is protected from being required to pay for any extracted oil. Indeed, the potential for trespass damages in addition to the required cost of removing the well may be only nominal.[114] Traditional intentional trespass damages, including bad faith trespasser damages,[115] would still attach to any action intended to constitute an intentional trespass and extraction of another's oil or gas regardless of a rule fixing all mineral estate boundaries.

b. Surface and mineral estates are two separate estates. If the forces of water that produce accretion do not act on severed mineral estates, they likewise do not act on unsevered mineral estates.[116] In

113. *See supra* Part III.A.2.d (discussing the necessity, in some cases, of removing a directional well to avoid subsurface trespass damages).

114. Because "[e]very unauthorized entry is a trespass even if no damage is done or no force is used," nominal damages may be awarded for a trespass that resulted in no harm to the property. Vecchiotti v. Tegethoff, 745 S.W.2d 741, 745 (Mo. Ct. App. 1987) (citing Weldon v. Town Properties, Inc. 633 S.W.2d 196, 200 (Mo. Ct. App. 1982)); *see also* DOUGLAS LAYCOCK, MODERN AMERICAN REMEDIES: CASES AND MATERIALS 561 (3d ed. 2002) (noting that a landowner suing for trespass may seek nominal damages in vindication of his property rights); 38 AM. JUR. 2D *Gas & Oil* § 337 (1999) ("Nominal damages may be awarded in an action arising out of an unauthorized geophysical exploration where the plaintiff fails to show that the wrongful exploration proximately caused any loss in the market value of his or her gas and oil interests.").

115. A bad faith trespass requires proof of "fraud, malice or oppression," or that "the trespasser's actions . . . be shown to be actuated by or accompanied with some evil intent, or must be the result of gross negligence—such disregard of another's rights—as is deemed equivalent of such intent." Edwards v. Lachman, 534 P.2d 670, 673 (Okla. 1974). Also, if a defendant is not guilty of bad faith when she drills the well but later discovers that she is a trespasser, she is not thereby converted into a bad faith trespasser; in other words, a defendant that subsequently discovers that she is a trespasser is not a bad faith trespasser if she did not drill the well in bad faith. *Id.* at 673–74 ("[T]he fact that defendants subsequently found that their Fuqua well trespassed upon plaintiffs' land did not retroactively make defendants 'bad faith' trespassers when they drilled and completed the Fuqua well.").

116. It is true that because the surface and mineral estates are unsevered and therefore one estate, what affects one affects the other. But it is also true that the force of water movement acts only on the surface estate, not the underlying minerals. Accordingly, any changes in the boundaries of an unsevered mineral estate are a result of boundary changes in the overlying surface estate. This Comment argues that unsevered mineral estates should be subject to accretion. *See infra* Part IV.A. Of course, these points have no bearing in nonpossessory ownership jurisdictions. *See infra* Part IV.B.

other words, regardless of whether the estate is severed or unsevered, the movement of water that results in actual diminishment of land or in the actual carrying away or depositing of sediment acts only on the surface estate. The movement of water can have no effect on the movement of fugacious underground minerals. Those minerals cannot properly be "accreted" within the meaning of the term[117] and should not be subject to accretion whether they are severed or unsevered from the surface estate.

c. Conveying a greater estate than possessed. The Oklahoma Supreme Court stated in *Nilsen* that refusing to apply the doctrine of accretion to severed mineral estates "would allow fee owners to convey a greater mineral estate than they themselves possessed."[118] A grantor could convey greater rights than she possessed in the land, since she possesses a diminishable estate, but would nevertheless convey an undiminishable estate.[119] In so noting, the *Nilsen* court correctly recognized an inconsistency in the argument that accretion should apply to unsevered mineral estates but not to severed mineral estates, and elected to resolve that inconsistency by holding severed mineral estates subject to accretion, just like unsevered mineral estates. That resolution, however, flies in the face of arguments that severed surface and mineral estates are indeed separate estates, each having no bearing at all on the other.[120] Therefore, the fact that accretion applies to severed surface esrates does not necessarily mean that it should likewise apply to severed mineral estates.

The rule could just as easily be that accretion is inapplicable to both severed and unsevered mineral estates. Under such a rule, a grantor could not grant a greater estate than she possesses, since no mineral estate would be subject to loss by accretion. Such a rule would resolve the inherent disparity in dignity between severed and unsevered mineral estates under the rule as it currently stands. That rule would also satisfy commentators' complaints that accretion should not apply to severed mineral estates and is consistent with

117. See *supra* Part II.A for a definition of "accretion" as used in this Comment.

118. Nilsen v. Tenneco Oil Co., 614 P.2d 36, 41 (Okla. 1980).

119. *Id.* at 41–42.

120. *See* Murphree, *supra* note 7, at 827–28; Lear, *supra* note 7, at 282–84. Lear's argument for the separateness of surface and mineral estates focuses on their geological rather than their legal differences.

commentators' arguments that conveying more than one owns does not violate established property law in every case.

d. Purpose of accretion law. If the doctrine of accretion was originally intended to apply only to surface estates,[121] it should not matter whether the underlying mineral estate is severed from the surface estate or not. As already noted, the doctrine of accretion developed to determine ownership of accreted land where the original owner could not be expected to identify lost sediment. It may have also been intended to preserve the intent of the parties in conveying property near water (that those parties intended to convey and receive land bordering water), as well as to protect practical access to water in the use and enjoyment of the property.[122] None of those purposes has any bearing on ownership of the underlying mineral estate or on whether that mineral estate is severed or unsevered.

2. Why a rule immunizing both severed and unsevered mineral estates is ill advised

a. De facto severances of surface and mineral estates should be avoided. When fee estate owners desire to sever a surface estate from the underlying mineral estate, they generally convey one or the other through the use of a deed or other contractual arrangement.[123] Under the common law, the right of a fee estate owner to convey a mineral estate, or sever the surface from the mineral estate, is a

121. Murphree, *supra* note 7, at 832–33. For a brief description of some of the original purposes of the doctrine of accretion, see *supra* Part III.A.2.c.

122. *Id.*

123. *See* Rio Bravo Oil Co. v. Staley Oil Co., 158 S.W.2d 293, 295 (Tex. 1942) (noting that "[o]nly an effective deed will operate to sever [surface and mineral] estates"). It is well established that

> The owner of mineral land may . . . convey the land as an entirety, or he may sever the minerals or his rights therein from the remainder of the estate in the property and sell each separately from the other. The owner can accomplish this either by granting his or her general estate, with an exception or by reserving the mineral rights, or by granting the minerals or the surface alone; It [sic] may also be accomplished by lease of the mineral interest.

53A AM. JUR. 2D *Mines and Minerals* § 176 (1996); *see also id.* § 177 ("When, *by appropriate conveyance*, the mineral estate in lands is severed from the surface, separate and distinct estates are thereby created which are held by separate and distinct titles . . . ." (emphasis added)).

property right inherent in fee ownership of land;[124] the medium of contract honors that right and preserves the fee estate owner's intent to sever her estate.[125] An "accidental" conveyance, or one effectuated without the intent of the fee estate owner, would effectively remove from the fee estate owner's bundle of property rights the right to alienate her surface or mineral estate. At a minimum, it would force one surface estate owner to accommodate another surface estate owner in the exploitation of her mineral rights.

Immunizing both severed and unsevered mineral estates from accretion, however, would be such an accidental conveyance. If the boundaries of both severed and unsevered mineral estates were fixed, the owner of an unsevered mineral estate whose surface estate has eroded runs the risk of another's surface estate replacing the surface owner's lost surface estate. The result would be that another surface estate owner would own the land directly above the original owner's mineral estate—an outcome identical to what a severance by conveyance would have accomplished, but without the original surface owner's intent, or for that matter, the second surface owner's either.

The primary difference between such a de facto severance and a true severance, of course, is that the original surface owner has not actually deeded her surface estate to the second surface owner. She still owns it and has the right to enter onto the other's surface estate

124. *See* Debra Dobray, *Oil Shale, Tar Sands, and the Definition of a Mineral: An Old Problem in a New Context*, 22 TULSA L.J. 1, 6 (1986) ("Generally, under the common law, mines and mining rights *belong* to the owner of the fee estate, who may sever the fee and convey or reserve either the surface or the mineral estate." (emphasis added)); *see also* Goin v. Eater, 438 N.E.2d 234, 236 (Ill. App. Ct. 1982) ("In Illinois, a landowner is entitled to the surface and all that is below it . . . . [A]n owner of land . . . has the right to sever his land into estates, and he may dispose of the mineral estates and retain the surface, or he may dispose of the surface and retain the mineral estate." (quoting Jones v. Johnson, 307 N.E. 2d 222, 224 (Ill. App. Ct. 1974))).

125. Courts often engage in an analysis of the intent of the parties to a mineral conveyance in determining whether a severance of surface and mineral estates has occurred. *See, e.g.*, Besing v. Ohio Valley Coal Co., 293 N.E.2d 510, 514 (Ind. Ct. App. 1973) (holding that a complete severance of surface and mineral estates did not occur because "[t]here was no evidence of a general intent to sever the surface estate from the entire mineral estate"); Sherrill v. Erwin, 220 S.W.2d 878, 880 (Tenn. Ct. App. 1948) ("It has long been recognized in [Tennessee] that the owner of coal and mineral land may, *if he desires*, convey the land in its entirety, or he may *by a conveyance in writing* sever the coal or minerals or his rights therein from the remainder of his estate . . . ." (emphasis added)); Moser v. U.S. Steel Corp., 676 S.W.2d 99, 102 (Tex. 1984) (noting that "the general intent of parties executing a mineral deed or lease is presumed to be an intent to sever the mineral and surface estates").

to exploit her mineral interest.[126] Practically speaking, though, the original surface owner will still have to deal with the second surface owner and all the complications that could arise from such a forced relationship,[127] as she will have to either drill a directional well from her remaining surface estate underneath the other's surface estate or enter onto the other's surface estate to drill. The original surface owner did not choose to deal with any other owners, and would not have had to do so if her mineral estate boundaries had continued to correspond with her surface estate boundaries. She may lose part of her mineral estate, but she would not be forced to deal with anyone else.

126. *See, e.g.*, Chambers-Liberty Counties Navigation Dist. v. Banta, 453 S.W.2d 134, 136 (Tex. 1970) ("In situations where the surface and mineral estates have been severed, the mineral estate owner has a common law right to use the surface estate."); Teriann Trostle, Note, *Title to Unnamed Minerals is Determined by the Law in Effect at the Time the Estate is Severed:* Friedman v. Texaco, Inc., 691 S.W.2d 586 (Tex. 1985), 28 S. TEX. L. REV. 749, 752 & n.27 (1987) (noting that "[e]arly in the development of [severance of mineral estates], the owner of the mineral estate asserted a dominant position by exercising his right of ingress and egress" and that "[t]he right of ingress and egress permits the owner of the mineral estate to enter upon the surface estate in order to explore and extract minerals granted in the mineral estate"). For a discussion of the limits of a mineral estate owner's ability to use the surface estate to extract minerals, see Douglas Hale Gross, *What Constitutes Reasonably Necessary Use of the Surface of the Leasehold by a Mineral Owner, Lessee, or Driller Under an Oil or Gas Lease or Drilling Contract*, 53 A.L.R.3d 16 (1973).

127. Relations between surface and mineral estate owners are likely smoother when the parties have agreed to the relationship, namely because of the ambiguity of the rule of reasonable use of the surface estate:

> Although the mineral estate is dominant, and although its owner may use as much of the leased premises as is reasonably necessary to develop his estate, the rights of the mineral owner must be exercised with due regard to the rights of the surface owner. When a difference of opinion arises between the owners of the mineral and surface estates, the question of reasonable use of the surface is generally considered a question of fact for the jury, while the proper effect to be given the grant of the oil and gas lease and the proper definition of "reasonably necessary" are determined by the court.

Guy L. Nevill, *Multiple Uses and Conflicting Rights*, 13 ST. MARY'S L.J. 783, 787 (1982) (citations omitted). In other words, though the definition of "reasonably necessary" is a question of law and therefore likely discoverable by the parties ahead of time (assuming courts in the jurisdiction have already decided the issue), surface and mineral estate owners that are unable to resolve disputes out of court must submit the question of whether a particular use is "reasonably necessary" to the uncertainty of jury deliberation. Of course, many cases arise where the surface and mineral estate owners did not enter into the relationship together (such as where one purchased a severed interest from another), but abrupt and unplanned changes in ownership are certainly not conducive to the goodwill and compromise necessary to keep the dispute out the hands of an unpredictable jury.

b. Difficulty in ascertaining mineral estate boundaries. As with freezing only the boundaries of severed mineral estates,[128] freezing all mineral estates may create difficulties in ascertaining mineral estate boundaries. The only difference is that such difficulties would arise more often, as more mineral estate boundaries would be frozen.

D. The Fourth Alternative: Abolishing the Doctrine of Accretion

A final alternative is to abolish accretion law entirely. However, several possible justifications exist for the doctrine. One possible justification stems by analogy from Roman accession theory: just as the owner of a fruit-bearing tree owns any fruit the tree bears, the owner of riparian land owns accreted land, as if the land "bore" new land.[129] A second possible justification is the practical concern that if landowners have defined boundaries with reference to bodies of water, the bodies of water should continue to define the boundaries even if they move.[130] A third possible justification is the maxim ***de minimus non curat lex*** ("the law does not care for trifling matters"), which rests on the notion that accretion, by definition, is the virtually imperceptible addition of land to a riparian estate, meaning that any accreted land is likely so minimal that invocation of law is not justified.[131] A fourth possible justification, the "productivity theory," holds that the law should favor productive land use as a policy consideration and that riparian estate owners are in a better position to use accreted land productively.[132] The fifth possible justification, the "compensation theory," holds that riparian landowners should gain accreted land because they also stand to lose land through erosion.[133] Finally, accretion law may be justifiable on the ground that it preserves the riparian quality of upland.[134]

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128. See *supra* Part III.B for a discussion of how the second potential approach to applying accretion law to mineral estates would make boundary ascertainment more difficult.

129. Brainard v. State, 12 S.W.3d 6, 18 (Tex. 1999). These justifications "range from agrarian economics to water access, to just plain fairness. But each and every reason put forth is based largely upon surface estate usage and values." Wilson, *supra* note 7, § 14.02[4][a], at 14-33.

130. *Brainard*, 12 S.W.3d at 18.

131. *Id.*

132. *Id.*

133. *Id.*

134. *Id.*; *see also* Kimball, *supra* note 5, at 241 (noting that "[t]he most important purpose of the doctrine of accretion is to ensure that riparian landowners will enjoy continued access to water even if the river shifts away from their land"). To support that assertion,

Perhaps the most persuasive defense of accretion law is the argument that determining riparian ownership would prove virtually impossible without it. Without accretion (and impliedly without erosion), a riparian landowner would have to keep track of any surface estate lost by the movement of water and somehow claim ownership of it, no matter how miniscule the land lost. While such a system would presumably prevent the diminishment of landowners' riparian estates, it would do so by simply scattering those estates along the banks of the body of water causing the erosion. Most pertinent to this Comment, however, is the argument that such a system would ignore the fact that oil and gas deposits underlying bodies of water are not influenced by the movement of water. While a nonaccretion rule would allow a surface estate owner to retain ownership of riparian land scattered along the shores of a body of water, the mineral estate remains in place—at least to the extent that fugacious minerals like oil and gas can so remain. If the surface and mineral estates were not already severed, the nonaccretion rule would sever them. This is a de facto severance in contravention of the landowners' intent. Even if water movement somehow affected oil and gas interests, oil and gas constantly flow anyway, and it would be impossible for one who holds interests in oil or gas to monitor the flow of the resource and capture only the actual oil or gas owned at the time the deed was executed.

Fortunately, no state seems to have abolished accretion entirely, and it does not seem likely that that any ever will.[135]

Kimball relies on the decision of the Supreme Court of Minnesota in *Lamprey v. State*, 53 N.W. 1139, 1142 (1893), which stated that the most important purpose of the accretion rule was "to preserve the fundamental riparian right—on which all others depend, and which often constitutes the principal value of the land—of access to water." As a counterargument, Kimball refers to *Comments on Recent Cases, Real Property—Navigable River—Accretion to Riparian Land*, 45 IOWA L. REV. 945, 949 (1960) [hereinafter *Comments on Recent Cases*], which argues that "[w]here a considerable amount of alluvial land is involved . . . perhaps the doctrine of accretion would not, under any factual situation, be the most equitable means of preserving a former riparian owner's right of access to water."

135. Quite apart from state law accretion rules, accretion law has found its way into federal common law. *See, e.g.*, Hughes v. Washington, 389 U.S. 290 (1967). Subsequent cases modify the federal common law rule. In *Oregon ex rel. State Land Bd. v. Corvallis Sand & Gravel Co.*, 429 U.S. 363, 377 n.6 (1977), the U.S. Supreme Court "limited the application of federal law to cases like *Hughes* where ocean front property was involved on the ground that international relations were implicated." Ralph W. Johnson et al., *The Public Trust Doctrine and Coastal Zone Management in Washington State*, 67 WASH. L. REV. 521, 562 (1992). It did not overrule the federal rule of accretion. A. DAN TARLOCK, LAW OF WATER RIGHTS AND RESOURCES § 3:45 (2003). Similarly, in *California ex rel. State Lands Comm'n v. United*

IV. GUIDELINES AND RECOMMENDATIONS

This Comment has sought to illustrate the difficulty in applying accretion law to mineral estates. One can make valid arguments that accretion law should apply, but there are no clear answers as to how this should be done. Each alternative carries with it various flaws either in its premises or its results. This section seeks to provide some guidance in the area of applying accretion law to mineral estates.[136] These suggestions will hopefully serve as reference points for future scholarship and court cases dealing with this issue. First, it argues that accretion law should apply to unsevered mineral estates. Second, it argues that accretion law should not apply to mineral estates in nonpossessory ownership jurisdictions. Finally, it argues that if courts or legislatures are pressed to choose one of the four approaches to applying accretion law to mineral estates, they should choose the courts' approach.

States, 457 U.S. 273, 279–82 (1982), the Court "reaffirmed the application of federal law to accretions along the ocean when it held that federal law dictates that accretions to federal lands belong to the federal government." Johnson et al., *supra*, at 562 n.240. The fact that federal common law may govern to the exclusion of state common law in some cases, *see, e.g.*, TARLOCK, *supra*, § 3:45, suggests that accretion law would not completely die even if the states did their best to kill it. This, of course, raises interesting and important questions, beyond the scope of this Comment, as to when the federal common law of accretion applies.

136. While not specifically an answer to the question of how accretion law should apply to mineral estates, some states have held that the accretion rule applies only to natural rather than manmade accretions. *See, e.g.*, State v. Bonelli Cattle Co., 489 P.2d 699, 703 (Ariz. 1971) ("Where a river shifts to a new location as a result of unnatural forces, the state does not lose title to the bed of the stream in the old location."), *rev'd on other grounds*, 414 U.S. 313 (1973); Ray v. State, 153 S.W.2d 660, 663 (Tex. Civ. App. 1941); *see also* PROOF OF FACTS, *supra* note 16, § 147 & nn.11–13 (discussing the Arizona and Texas rules and mentioning that Florida had once adhered to a similar rule, but that its adherence is now doubtful; also discussing the origins of the rule and the interpretations adopted by those states that do not adhere to it). A state that applies accretion law to all mineral estates and also adheres to the "artificial cause" rule has essentially placed a limitation on the application of accretion law to mineral estates. In those circumstances, accretion law will only apply to mineral estates if it applies to the surface, and it only applies to the surface if the accretion is the product of natural causes. Thus far, it appears that Texas is the only jurisdiction that both recognizes the "artificial cause" rule and has explicitly held accretion law applicable to all mineral estates. *See Ray*, 153 S.W. at 663; *supra* Part III.A. The same result would obtain, only less frequently, in jurisdictions that apply accretion law only to unsevered mineral estates, since the severed mineral estate boundaries would not fluctuate with those of the surface estate. The result would be inapplicable in jurisdictions freezing the boundaries of both severed and unsevered mineral estates.

A. Accretion Should Apply to Unsevered Mineral Estates

Courts and commentators have almost uniformly held that unsevered mineral estates are susceptible to the doctrine of accretion.[137] In *Ellis v. Union Oil Co. of California*,[138] the Oklahoma Supreme Court clarified the *Nilsen* holding, noting that *Nilsen* stood for the proposition "that mineral estates, ***whether severed or not***, are like surface estates, both are subject to loss or gain by the process of accretion."[139] Though *Nilsen* did not explicitly address the applicability of accretion to unsevered mineral estates,[140] the court's decision in *Ellis* effectively expanded the *Nilsen* holding such that it now covers unsevered mineral estates.[141]

On the same day that it decided *Ellis*, the Oklahoma Supreme Court explicitly addressed the issue of the applicability of accretion to unsevered mineral estates in *Seigle v. Thomas*.[142] That decision dealt with a quiet title action between the owners of riparian surface and mineral interests and the claimants of those same interests by adverse possession.[143] The court referred to its holding in *Nilsen*, but noted that the owners had not relied on that case's rule. The court noted that the estates were severed after the events giving rise to the claim took place and that its holding would, therefore, treat the estates as unsevered.[144] Under that factual scenario, the court held that the claimants had acquired title to the surface and mineral estate

137. *See, e.g.*, Kimball, *supra* note 5, at 235 (arguing that applying the doctrine of accretion to unsevered mineral estates makes "intuitive sense" because it preserves the identifiability of mineral estate boundaries).

138. 630 P.2d 306 (Okla. 1981).

139. *Id.* at 309 (emphasis added).

140. *See* Nilsen v. Tenneco Oil Co., 614 P.2d 36, 40 (Okla. 1980) (noting that the issue before the court was "whether the movement of a river by erosion or accretion carries with it title to the underlying minerals, when the minerals have been severed from the surface estate").

141. Under the rationale of this Comment, this decision is incorrect. In nonpossessory ownership jurisdictions such as Oklahoma, accretion should be per se inapplicable to all mineral interests. *See infra* Part IV.B.

142. 627 P.2d 417 (Okla. 1981). The Oklahoma Supreme Court handed down both decisions on January 20, 1981.

143. *Id.*

144. *Id.* at 417 n.1. Specifically, the court noted that "the conveyance of the surface by [the owners] took place apparently either subsequent to the adverse entry by [the claimants] on to [riparian land] or after the passing of the limitation period." *Id.*

that had accreted to their land,[145] indicating that accretion may augment an unsevered mineral estate.

These decisions conform to the arguments discussed herein[146] for holding that accretion law should apply to unsevered mineral estates. Insofar as this Comment can say that any of the alternatives is definitively superior or inferior, it would seem that the third alternative—holding accretion inapplicable to both severed and unsevered mineral estates—is an inferior option.

B. Accretion Law is Inapplicable to Mineral Estates in Nonpossessory Jurisdictions

The doctrine of accretion should not apply at all to any mineral estate in nonpossessory jurisdictions like Oklahoma.[147] In

145. Specifically, the Oklahoma Supreme Court affirmed the trial court's ruling "that title to the surface and minerals of [the riparian land and the accreted land] should be quieted in the [claimants]." *Id.* at 418. The trial court had also ruled "that title to accreted land follows the title of riparian land to which it is attached regardless of whether the latter title is acquired by deed or adverse possession." *Id.* (quotations omitted).

146. *See supra* Part III.C (arguing that not applying accretion to unsevered mineral estates would produce de facto severances and complicate mineral estate boundary ascertainment).

147. It is actually far from clear what theory of mineral ownership Oklahoma embraces. Some authorities suggest that Oklahoma is a nonpossessory ownership jurisdiction. *See* Bennett, *supra* note 4, at 359 (noting that Oklahoma is a nonpossessory or nonownership jurisdiction); Terry D. Ragsdale, *Hydraulic Fracturing: The Stealthy Subsurface Trespass*, 28 TULSA L.J. 311, 314 (1993) (noting that Oklahoma is a nonownership jurisdiction). *But see* Sydney W. Falk, Jr., Note, *Natural Gas Regulation and Vested Property Interests: Ratable Taking, Proration Standards, and Fieldwide Civil Liability*, 62 TEX. L. REV. 691, 697 n.31 (1983) (noting that Oklahoma uses a "qualified ownership" doctrine that has virtually "the same effect as the rule that oil and gas are not owned until they are reduced to possession"). For an explanation of the differences between nonpossessory and qualified ownership theories of mineral ownership, see *supra* note 35. *Rich v. Doneghey*, 177 P. 86 (Okla. 1918), attempts an explanation of Oklahoma's view of mineral ownership, noting that

> with respect to . . . oil and gas[, fee simple owners of land have] . . . a qualified ownership thereof, but which may be more accurately stated as exclusive right . . . , to erect structures on the surface of their land . . . . The right so granted or reserved, and held separate and apart from the possession of the land itself, is an incorporeal hereditament; or more specifically, . . . a profit à prendre, analogous to a profit to hunt and fish on the land of another.

Id. at 89. Oklahoma has also been called an "exclusive-right-to-take" jurisdiction. *See* Lisa S. McCalmont, Note, *Vanishing Rights of the Mineral Lessor: The* Pack v. Santa Fe Minerals *Ruling*, 30 TULSA L.J. 695, 720–21 (1995). In such a jurisdiction, a lessor's mineral ownership "constitut[es] only the right to take and capture minerals," and "[t]he true estate in minerals, in Oklahoma, lies in the one who has captured and reduced the minerals to his possession." *Id.* at 721. On the other hand, the Oklahoma Supreme Court in *Wright v. Carter Oil Co.*, 223 P. 835 (1923), wrote:

nonpossessory jurisdictions, a surface estate owner has an exclusive right to extract oil and gas, and that right is transferable as a profit à prendre, or incorporeal hereditament, to another.[148] Nonpossessory jurisdictions have rejected the majority view "that the assignee of an oil and gas interest possesses a defeasible fee in definite corporeal real property" because that concept does not "sufficiently recognize the practical difference between oil and gas and solid minerals: the latter remain in place beneath the surface of the land, but the former, fugacious and vagrant may be drawn from beneath the surface of

> [O]il and gas belong to the owner of the land and are a part of it so long as they are on it or in it, or subject to his control; but when they escape and go into other land, or come under another's control, the title of the former owner is gone. In other words, property in the oil and gas does not become absolute until they are reduced to actual possession by being brought to the surface and then controlled.

Id. at 836. This seems to suggest that Oklahoma grants ownership of underlying oil and gas to the surface owner, subject to defeasance as in most possessory jurisdictions. Indeed, "there may be found an occasional Oklahoma case indicating ownership in place." Jack L. Kinzie, *Oil and Gas Bankruptcy and the Law of Oklahoma*, 361 PLI/COMM 321, 326 (1985) (citing *Cuff v. Koslosky*, 25 P.2d 290 (Okla. 1933), and *Davis v. Lewis*, 100 P.2d 994 (Okla. 1940)). This Comment will presume, however, that Oklahoma is a nonpossessory ownership jurisdiction because most authorities point to such a designation.

Interestingly, Oklahoma is clearly a nonpossessory, or "exclusive-right-to-take," jurisdiction only with regard to oil. Bennett, *supra* note 4, at 359 n.84. With regard to natural gas, Oklahoma has a statute that proclaims it an ownership-in-place state. *See* OKLA. STAT. ANN. tit. 52, § 231 (West 2000) ("All natural gas under the surface of any land in this state is hereby declared to be and is the property of the owners, or gas lessees, of the surface under which gas is located in its original state.").

For a list of other jurisdictions adhering to the nonpossessory model of mineral ownership, see *supra* note 35 and accompanying text.

148. Pac. Gas & Elec. Co. v. Zuckerman, 234 Cal. Rptr. 630, 645 (Cal. Ct. App. 1987). A profit à prendre is an incorporeal hereditament. Gerhard v. Stephens, 442 P.2d 692, 704–05 (Cal. 1968). For example, "[t]he owner of land has the exclusive right on his land to drill for and produce oil. This right inhering in the owner by virtue of his title to the land is a valuable right which he may transfer[.] *The right when granted is a profit à prendre, a right to remove a part of the substance of the land.*" *Id.* at 705 (quoting Dabney-Johnston Oil Corp. v. Walden, 52 P.2d 237, 243 (Cal. 1935)). A profit à prendre is an interest in real property. *Id.* The following explanation may be of some help in clarifying this difficult concept:

> A profit a prendrè [sic], generally, is more like an easement than fee simple title to property. Like an easement, it is an interest in real property, but it in no way entitles the possessor of the nonpossessory interest to full ownership of the land upon which the interest rests. Instead, the possessor of the profit has a right of way onto the land under which oil and gas may be present that enables the possessor to exclusively search for and produce oil and gas thereon. Using this approach California and other profit a prendrè [sic] states are able to, in effect, sever the mineral and surface estate without saying that the possessor of the profit a prendrè [sic] is the owner of the oil and gas in the ground.

Bennett, *supra* note 4, at 363.

other lands."[149] In other words, a surface estate owner in a nonpossessory jurisdiction cannot properly be said to "own" the oil beneath her property because oil migrates; she does not own the "same" oil from day to day. All that can be said to be owned is a right to extract oil from beneath another's property. Accretion should be per se inapplicable to mineral interests in nonpossessory jurisdictions because the law of those jurisdictions does not, as demonstrated here, recognize real estate ownership of subsurface oil or gas as real property. In nonpossessory jurisdictions, a surface owner may have the right to drill for underlying oil or gas,[150] but she has no interest in the oil or gas other than the right to drill for it. Therefore, underlying "mineral estates" (if it can even be said that such exist) know no boundaries, and changes to the boundaries of the surface estate by accretion can have no effect on the boundaries of underlying oil or gas estates. In other words, it cannot be said that a surface estate owner whose surface estate has been augmented or diminished by accretion has "gained" or "lost" any new mineral rights or control over any new minerals.

C. The Courts' Approach as the Lesser of Four Evils

The purpose of this Comment is to show that each of the four possible approaches to applying accretion law to mineral estates is flawed in one way or another. Nevertheless, if courts or legislatures must choose one of the four options, they would do well to choose the courts' option as delineated in *Nilsen* and those cases following it, electing to subject mineral estates to accretion.

That recommendation does not lose sight of the fact that the courts' approach is flawed. Subjecting both severed and unsevered mineral estates to accretion ignores mineral estate geology as well as the history and purpose of accretion law, and may force good-faith developers of oil and gas resources to pay damages for subsurface trespasses.[151] At a minimum, though, mineral estate owners could always determine the boundaries of their underlying mineral estates, because mineral and surface estate boundaries would always

149. *Gerhard*, 442 P.2d at 704.

150. *See Pac. Gas & Elec. Co.*, 234 Cal. Rptr. at 644–45 (describing this right in terms of a profit à prendre or incorporeal hereditament).

151. *See supra* Part III.A.2.

coincide.[152] None of the other three alternatives affords this ease of administration, as each, in some way or another, recognizes that surface and mineral estate boundaries may not always coincide.[153] The courts' approach also maintains the relationship that surface and mineral estate landowners agreed to upon severing the estates; neither party will be forced to deal with another interest owner unknown to her upon severance.[154] It is true that the courts' alternative may expose good-faith developers to subsurface trespass liability,[155] but vigilant mineral estate owners could anticipate the encroachment of a mineral estate onto subsurface directional wells merely by monitoring the encroaching surface estate, since surface and mineral estate boundaries will always coincide.[156] In short, ease of administration and protection of property relationships recommend the courts' approach in spite of its obvious flaws.

V. CONCLUSION

The application of accretion law to mineral estates results in significant confusion. Each possible theory of application, including no application at all, carries various flaws, either in its premises or

152. Wilson makes this point:

> Also, while *Nilsen* and *Jackson* do not result in a rational meshing of the concepts of severed mineral interests, water boundaries, and bed ownership, it well may be that from an industry viewpoint it is easier for the landman in river or lake situations to orient himself with what he sees on the ground as opposed to what could be a difficult task of running title as to severed estates created many years (and river shifts) ago.

Wilson, *supra* note 7, § 14.02[4][b], at 14-35 to 14-36.

153. The second alternative would fix severed mineral estate boundaries at severance, allowing the surface estate to expand with accretion and stagger surface and mineral estate boundaries. *See supra* Part III.B. Likewise, the third alternative would fix all mineral estate boundaries, staggering surface and mineral estate boundaries whenever accreted land augments surface estate boundaries. *See supra* Part III.C.1.a (noting that de facto severances may result). Finally, abolishing accretion law entirely would complicate mineral ownership ascertainment and further stagger surface and mineral estate boundaries. *See supra* Part III.D.

154. *See supra* Part III.C.2.a.

155. *See supra* Part III.A.2.d.

156. Nevertheless, difficulty arises because accretion, by definition, is imperceptible. *See Comments on Recent Cases*, *supra* note 134, at 947 ("Accretion is best defined as the process of gradual and imperceptible addition to land of alluvial deposits caused by the washing of a contiguous watercourse."); *supra* note 13. That does not mean, however, that a mineral estate owner cannot monitor surface estate boundary changes over a period of time. Though accretions may be imperceptible day by day, they may not be imperceptible over the course of a year.

results, that undermine the theory's credibility and usefulness. Applying accretion law to both severed and unsevered mineral estates ignores the fact that severed surface and mineral estates are two separate estates and that a landowner may, in some cases, convey a greater estate than she possesses. It also neglects the origins of accretion law and may force good-faith mineral developers to incur damages for inadvertent subsurface trespasses. Subjecting only unsevered mineral estates to accretion, though, would make mineral estate boundary determinations costly and difficult, and immunizing both severed and unsevered mineral estates from accretion would make mineral estate boundary determinations even more difficult and costly. Finally, abolishing accretion law entirely would contravene well-established public policies and produce de facto severances of surface and mineral estates. Out of this confusion, however, arise two relatively certain principles: accretion law should apply to unsevered mineral estates, but not to any mineral estate in a nonpossessory jurisdiction. Also, if pressed to choose one of the four options presented in this Comment, courts would be wise to adhere to the approach presented in *Nilsen* and its progeny, as that approach facilitates boundary ascertainment and protects property relationships. Hopefully, further scholarship and court decisions can apply these principles to resolve the confusion inherent in the application of accretion law to mineral estates.

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