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A Looming "Sand Trap" In Severed Mineral Estates

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INTRODUCTION

Over the last decade, U.S. oil production has nearly doubled in volume on the strength of what has come to be known as a "shale revolution."[1] Due to a confluence of market and technological forces, the

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[1] *See* Roger Howard, *Is the U.S. Fracking Boom a Bubble*, NEWSWEEK (July 14, 2014), http://www.newsweek.com/us-fracking-boom-bubble-258623 ("The shale revolution was born around 2008 when American oil production was at 5 million barrels a day . . . ."); *see also* Myra P. Saefong, *EIA Raises 2017 U.S. Oil Production Outlook and Cuts Oil-Price Forecast*, MARKETWATCH (May 9, 2017, 12:20 PM), http://www.marketwatch.com/story/eia-raises-2017-us-oil-production-outlook-and-cuts-oil-price-forecast-2017-05-09 ("The EIA forecast U.S. crude production at an average 9.31 million barrels per day in 2017 . . . .").

process of hydraulic fracturing—or "fracking," in common parlance—has served as the primary driver for this dramatic uptick in domestic petroleum activity.[2] Although fracking has proliferated through many parts of the country, Colorado—which sits on top of the Niobrara Shale—has become a particular hotbed for oil and natural gas exploration.[3] According to the Bureau of Land Management, ninety-five percent of new wells in the state utilize fracking to access natural gas.[4]

Questions of sensible regulation and environmental and energy policy attendant to this boom are both complicated and contentious. They are also well covered in scholarship. Without spilling more ink over these issues, this article addresses an unresolved matter of contract interpretation arising in the closely related commodity market for high-purity quartz sand ("frac sand").

Because shale formations have insufficient pore space for petroleum fluids to flow to a well, the process of fracking is defined by the need to create underground fissures to harvest natural gas.[5] To accomplish this, frac sand is "blasted (under pressure) into a shale gas well, along with large quantities of water and industrial fluids" to serve as a "proppant" for these subsurface cracks.[6] Based on some estimates, "95 billion pounds of fracking sand and ceramics were . . . pumped into the ground in the U.S. in 2014 alone, although demand continues to rise (and fall) in keeping with the variables of gas prices."[7]

According to IHS Markit, "[t]he price of [frac] sand is expected to rise 62 percent [in 2017] to average $47 a ton,"[8] creating a boon for individuals and entities holding the right to mine these specialized sand

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2 *See* Stephen Huba, *Fracking Accounts for Most New Oil and Gas Production in U.S., Agency Says*, PITTSBURGH TRIBUNE-REVIEW (Jan. 30, 2018, 11:18 AM), http://trib live.com/usworld/world/13242017-74/fracking-accounts-for-most-new-oil-and-gas-production-in-us-agency.

3 *Colorado and Fracking*, EARTHJUSTICE, https://earthjustice.org/features/colorado-and-fracking (last visited Oct. 24, 2017).

4 *See id.*

5 *See generally* Wendy Lyons Sunshine, *What is Fracking Sand?*, BALANCE, https://www.thebalance.com/what-is-fracking-sand-1182604 (last updated Sep. 12, 2017).

6 *Id.*

7 *Id.*; *see also* Angie Haflich, *Frac Sand In Demand With Uptick In Oil Rigs*, HIGH PLAINS PUBLIC RADIO (Feb. 20, 2017), http://hppr.org/post/frac-sand-demand-uptick-oil-rigs ("Financial planning company Raymond James estimates frac sand demand will hit record levels [in 2017] at roughly 55 million tons and exceed 80 million tons by [2018], 60 percent above 2014 levels . . . .").

8 *See* Arathy S. Nair & Nivedita Bhattacharjee, *Pullback in U.S. Fracking Sand Use Pressures Producers*, REUTERS (Aug. 15, 2017, 10:05 PM), https://www.reuters.com/article/us-usa-oil-sand/pullback-in-u-s-fracking-sand-use-pressures-producers-idUSKCN1AW07F.

deposits. In 2014, an energy analyst for The Price Group in Chicago, stated that "[t]he demand for this high quality sand is revitalizing [Midwestern] communities . . . it's putting a paycheck in the pocket of many people that didn't have one."[9] In the same news report, one farmer in Wisconsin—which has the most abundant frac sand deposits in the United States—estimated that he could sell his otherwise undeveloped land for $50,000 an acre.[10]

In most cases, the question of who controls sand extraction rights is relatively straightforward when the mineral and surface estates in a given plot of land are undivided. As a fundamental principle in the English common law of land ownership, "an owner of property controls it from the center of the earth to the heavens"—a translation of the maxim "*cujus est solum, ejus est usque ad coelum*" that appears in the writings of William Blackstone, among others.[11]

However, the concept of a severable interest in a property's "mineral bearing strata" is equally entrenched in common law history.[12] In the United States,

> it was well established [by 1900] that "[a]s to mineral lands, the surface may be owned by one, person and the mineral underneath by another, and that each owner shall have an indefeasible title. When the surface and the underlying mineral strata are separately owned, they constitute separate corporeal hereditaments, with all the incidents of separate ownership."[13]

Today, severed mineral and surface estate land interests are commonplace in the United States—particularly in regions with higher levels of extraction industry activity.[14]

At a basic level, a property owner can split these interests in a given parcel of land either by (1) a grant of the mineral estate in a deed or lease or (2) a reservation of the mineral estate in a conveyance of the surface.

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9 *See* Ruth Ravve, *Sand Rush in Midwest, Where Rare Material for Fracking is Mined*, FOX NEWS U.S. (June 26, 2014), http://www.foxnews.com/us/2014/06/26/sand-rush-in-midwest-where-rare-material-for-fracking-is-mined.html.

10 *See id.*

11 *See* Andrew C. Mergen, *Surface Tension: The Problem of Federal/Private Split Estate Lands*, 33 LAND & WATER L. REV. 419, 423 & n.20 (1998).

12 *See id.* at 424.

13 *Id.* at 425 (quoting Smith v. Jones, 60 P. 1104, 1106 (1900)).

14 *See, e.g.*, Shelby Kinney-Lang, *Colorado Senators Rally Round Fracking-Awareness Home-Buyer Protection Bill*, COLO. INDEPENDENT (Jan. 29, 2014), http://www.coloradoindependent.com/145749/colorado-senators-rally-round-fracking-awareness-home-buyer-protection-bill (explaining the 2014 passage of a bill in Colorado to alert homeowners to the prevalence and consequences of severed mineral estates in light of the State's fracking boom).

For example, an oil and gas operation may enter into a contract to sell the surface estate in land it holds in fee simple, while including a provision setting forth its reserved right to minerals. This is commonly known as a "mineral reservation clause," and the frequent ambiguities in their drafting set the stage for the primary concern raised in this Article.

In a perfect world, the specific mineral interests contemplated by a reservation or conveyance clause would be enumerated in express terms. For example, a land transaction instrument could provide for the reservation of "oil, gas, coal, gold, silver, copper, lead, and uranium." More often, however, and for understandable reasons, such clauses are drafted in generalized terms, referring to interests in "oil, gas, and *all other minerals*" or, at times, simply "*all minerals*."[15] When this is the case, a window opens for the contracting parties (or their successors and assigns) to disagree about, and ultimately litigate over, the question of what the unqualified term "mineral" was originally intended to encompass.

The case law stemming from this inquiry reveals an inconsistent patchwork of tests and considerations proffered by federal and state courts in various jurisdictions. However, in piecemeal fashion, a general consensus has been reached that substances like "ordinary gravel and common sand" are presumptively not intended to be included in a general reservation of "other minerals" or "all minerals" unless expressly stated.[16]

Although the mineral or non-mineral categorization of frac sand has been the subject of some limited industry discussion,[17] there is no case law precedent at the time of this writing dealing specifically with the issue.[18] By applying the prevailing forms of judicial analyses used to define the term "mineral," this Article questions whether the qualitative differences between frac sand and common building sand could lead courts to conclude that the former belongs with the mineral estate even if the latter does not. Colorado law, which is largely representative of many other jurisdictions, is used as an illustrative baseline for this inquiry, although the State does not have known commercially viable quantities of frac

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15 *See, e.g., infra* note 28 and accompanying text.

16 *See* Kinney v. Keith, 128 P.3d 297, 304 (Colo. App. 2005); *see also* Heinatz v. Allen, 217 S.W.2d 994, 996–998 (Tex. 1949).

17 *See infra* pp. 293–94 and note 41.

18 Without reaching the merits of the plaintiff's claim, the U.S. District Court for the Western District of Wisconsin dismissed a case for lack of ripeness in early 2017 in which a partial mineral rights holder sued the owners of the surface estate for removing frac sand, on the theory that it was a "mineral" within the scope of the company's reservation clause. *See* AgriBank, FCB v. Laufenberg, 2017 U.S. Dist. LEXIS 15750 (W.D. Wis. 2017).

sand.[19] Colorado oil and gas operations are, however, major purchasers of frac sand from states like Wisconsin, Minnesota, and Texas, and the law in such jurisdictions will also be addressed.[20]

Part I of this Article proceeds with a brief summary of how Colorado courts approach the categorization of "minerals," with some materials clearly falling under the term's nebulous boundaries and others (e.g., sand) retaining enough ambiguity to delve further into the contracting parties' intent. Part II outlines, in turn, the real-world contextual factors and background principles of construction for contract drafting that bear on the question of definitional intent. With an understanding of how these factors have overwhelmingly supported holdings that common sand is not covered by a general reservation or grant of "all minerals," Part II concludes by setting forth certain distinguishing features of frac sand that could potentially tip the scale the other direction. Finally, Part III considers certain analogous lines of case law in other jurisdictions dealing with substances that were not contemplated (or even known to exist) by parties at the time of an estate severance, with mineral-like value that only later becomes apparent. By reframing the inquiry in these terms, there is some compelling precedent to support a departure from the historical treatment of common sand when courts inevitably face disputes related to frac sand rights under general mineral reservation clauses.

I. DRAWING A LINE IN THE SAND: WHAT MATERIALS ARE INHERENTLY AMBIGUOUS UNDER MINERAL RESERVATION CLAUSES?

As a basic principle in contract law (often called the "four-corners rule"), courts will refuse to consider extraneous evidence about the meaning of a given term or provision unless there is sufficient ambiguity.[21] Thus, when contract language is facially susceptible of only one interpretation, parties are generally unable to raise post hoc claims that they held a different understanding than the plain meaning of the words

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19 ANNA B. WILSON & MARY ELLEN BENSON, WHERE IN THE U.S. IS THE NATURALLY-OCCURRING FRAC SAND? (2014), https://minerals.usgs.gov/science/nonmetallic-industrial-minerals/FSI2014-Presentation-Anna-Wilson-Rev-Reference-Citations-508.pdf.

20 *See generally* Don Bleiwas, *Estimates of Hydraulic Fracturing (Frac) Sand Production, Consumption, and Reserves in the United States*, ROCK PRODUCTS tbl.2 (May 26, 2015), http://www.rockproducts.com/frac-sand/14403-estimates-of-hydraulic-fracturing-frac-sand-production-consumption-and-reserves-in-the-united-states.html#.WfC7lhuouUk.

21 *See Four-Corners Rule*, BLACK'S LAW DICTIONARY 321 (4th Pocket ed. 2011).

they used. In the context of land sales contracts reserving or conveying "all minerals" or "other minerals," the Colorado Court of Appeals has recognized that the term "minerals" is "not capable of a definition of universal application; it is a general word susceptible of different meanings, and . . . [w]hat the word means, therefore, depends almost entirely on its immediate context."[22]

Notwithstanding the absence of a universal definition for the term "mineral," Colorado courts have found no inherent ambiguity as to whether certain substances are reserved in a general mineral reservation clause, regardless of whether or not they are specifically enumerated. For instance, the Colorado Supreme Court has stated that "Colorado adheres to the majority rule that deed reservation language reserving 'other minerals' reserves oil and gas."[23] The Colorado Court of Appeals has provided further that:

> The term 'minerals' has not been held to be inherently ambiguous with respect to oil, gas, gold, silver, copper, lead, and other similar subsurface materials, and therefore, those materials would be included in the mineral estate even if the grantor did not know that they existed at the time of the mineral reservation.[24]

Conversely, the general rule in Colorado is that "gravel and common sand are *not* included within the meaning of the word 'mineral' as that term is used in conveyances either granting or reserving mineral interests."[25] However, "that general rule can be overcome upon a finding that the parties to the contract nevertheless intended for the word 'mineral,' as used in the reservation, to include [them]."[26]

This colorable ambiguity at the margin of what qualifies as a mineral has enabled litigants in Colorado (and many other jurisdictions) to overcome the threshold "four corners rule" and present extraneous evidence about their contracting intent with respect to sand rights.[27] The dispositive question can then be stated as follows: *Did the parties to a*

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22 *See* Kinney v. Keith, 128 P.3d 297, 303 (Colo. App. 2005).

23 McCormick v. Union Pac. Res. Co., 14 P.3d 346, 349–50 (Colo. 2000) (noting also that there is no such settled law "with respect to sand and gravel").

24 *Kinney*, 128 P.3d at 307.

25 *See id.* at 304 (emphasis added).

26 *Id.* at 306 (quoting United States *ex rel.* S. Ute Indian Tribe v. Hess, 348 F.3d 1237, 1246–47 (10th Cir. 2003)).

27 *See* Patrick G. Mitchell & Wendy L. Anderson, *Aggregate Mining: Acquisition of "Minerals," Mineral Reservations, and Other Mysteries*, 47 ROCKY MT. MIN. L. INST. 12-1, § 12.02(1)(a) (2001) ("The intent of the parties to a mineral reservation controls the scope of that reservation.").

given land transaction, at the time of such transaction, intend for a general reservation or conveyance of "minerals" to include sand?

To assess this question of intent when it is in dispute, Colorado courts "have consistently held that it is particularly important to discern what the parties jointly understood by the language they used, [for which] it is necessary to consider all the circumstances surrounding the transaction."[28]

II. ASSESSING INTENT UNDER MINERAL RESERVATION CLAUSES

A. The Colorado Approach: Kinney v. Keith

Colorado's most robust modern analysis of mineral reservation clause intent is set forth in *Kinney v. Keith*, decided by the Colorado Court of Appeals in 2005.[29] At issue in *Kinney* were the respective interests of surface estate and mineral estate rights holders to ordinary sand and gravel where the applicable reservations used descriptive phrases including: "in and to the oil, gas and *other minerals* lying in, on and under said lands," "oil, gas and *other minerals*," and "all oil, gas, carbon dioxide, and *any other minerals* in, on, or under [the land]."[30]

Acknowledging the inherent ambiguity in the term "minerals" as applied to sand and gravel, the *Kinney* court proceeded to analyze an array of factors—drawn from Colorado cases and other persuasive precedent—to probe the parties' intent in the specific reservations at issue.

First, the court looked at the commonality of other recognized minerals (i.e., oil and gas) in the area, noting that where the "most usual subjects of mineral conveyances are oil and gas" in a given region, it is less likely that the parties were contemplating ordinary surface sand and gravel for the purposes of a mineral reservation clause.[31]

Second, the court looked at the practical matter of surface coverage, reasoning that "where a large part of the surface is occupied by sand and gravel . . . courts are likely to find that inclusion of these materials in the term 'minerals' would tend to swallow up the surface grant."[32]

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28 *See Kinney*, 128 P.3d at 303.

29 *See id.* at 300–16.

30 *Id.* at 303 (emphasis added).

31 *Id.* at 304 (quoting A.G. Barnett, Annotation, *Clay, Sand, or Gravel as "Minerals" Within Deed, Lease, or License*, 95 A.L.R.2d 843 §§ 11, 13 (1964) [hereinafter *Clay, Sand or Gravel as "Minerals"*]).

32 *Id.* (quoting *Clay, Sand or Gravel as "Minerals"*); *see also* Farrell v. Sayre, 270 P.2d 190, 192 (Colo. 1954) (holding, where the surface of the land consisted wholly of

Third, the court considered the ability to remove the materials at issue without damage to the surface. The *Kinney* court cited *Morrison v. Socolofsky*, another decision by the Colorado Court of Appeals, for its holding that "where gravel underlies [the] topsoil of [an] entire tract . . . and gravel removal would destroy the [beneficial use of the surface], [the] parties did not intend to include gravel within [a] mineral reservation," unless there is a clear "reservation of the right to destroy the surface."[33]

Fourth, the court considered the understood industry usage of the term "minerals" and certain connotations built therein. As explained by the court, "no intention to convey gravel will ordinarily be found in the absence of [express language]" in part because it is "a material of much *less value* than most other mineral substances, and also is *not peculiarly identifiable chemically* from other substances" in the soil.[34] The implication to be drawn from this, which is supported by other cases cited in *Kinney*, is that the term "mineral" contemplates a distinct inorganic substance with some exceptional commercial value.[35]

Beyond these fact-specific inquiries, the *Kinney* court also pointed to two general rules of construction for contract drafting to support a finding that ordinary sand and gravel are not intended to be reserved in a mineral estate absent specific language. Commenting on the relationship of the parties, the court stated that "[r]eservations are construed more strictly than grants, and any ambiguities in a reservation are construed against the grantor."[36] In other words, the grantor of a surface estate who reserves mineral interests typically shoulders any prejudice borne of ambiguity in contract drafting. Additionally, the court applied the maxim of *ejusdem generis*, explained as follows:

> Where an enumeration of specific things is followed by a more general word or phrase, such general word or phrase is held to

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sand and gravel, that if the owner of the surface estate did not own sand and gravel, he effectively owned nothing).

33 *Kinney*, 128 P.3d at 304 (citing and summarizing the holding in Morrison v. Socolofsky, 600 P.2d 121 (Colo. App. 1979)).

34 *Id.* (emphasis added) (quoting *Clay, Sand or Gravel as "Minerals"*).

35 *See, e.g.*, *Farrell*, 270 P.2d at (quoting British common law for the proposition that "the word 'minerals' when found in a reservation out of a grant of land means substances exceptional in use, in value and in character"); Bambauer v. Menjoulet, 214 Cal. App. 2d 871 (1963) (holding that commercial gravel lacked definite chemical composition and was not a "mineral" in a deed reservation); Atwood v. Rodman, 355 S.W.2d 206 (Tex. Civ. App. 1962) (holding that gravel, being unexceptional in character, was not within the ordinary meaning of the word "mineral").

36 *Kinney*, 128 P.3d at 303; *see also* Owens v. Tergeson, 363 P.3d 826, 830 (Colo. App. 2015) ("If, however, an ambiguity exists in an instrument's reservation of oil and gas rights, the construction must favor the grantee.").

> refer to things of the same kind, or things that fall within the classification of the specific terms. Because gravel and sand are not of the same kind as oil or gas, the general word 'mineral' following that enumeration of specific minerals would not, under the rule of *ejusdem generis*, be construed to include gravel or sand.[37]

Based on the foregoing considerations, and absent extraneous evidence to rebut the inferences drawn therefrom, the *Kinney* court ruled in line with all other Colorado precedent that the general mineral reservations at issue were not intended to cover ordinary sand and gravel.[38]

With some variation in how specific factors are articulated or given relative import, the analysis set forth in *Kinney* is largely consistent with how many other jurisdictions approach the question of defining a "mineral" in the context of reservation clauses.[39] Unsurprisingly, then, the presumptive exclusion of common sand from general reservation language applies more or less nationally. Although there is currently no case law—in Colorado or elsewhere—dealing specifically with the classification of frac sand,[40] a cursory application of the factors employed in *Kinney* and kindred precedent in other jurisdictions suggests that courts might have compelling reasons to differentiate between frac sand and common sand.

B. Application of Intent Considerations to Frac Sand

At a 2013 Frac Sand Mining Rights Seminar, mining and oil-and-gas lawyer Eric L. Martin delivered a presentation in which he made this very point.[41] Utilizing a Minnesota case of analogous precedential value to

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37 *Kinney*, 128 P.3d at 306–07 (quoting Bumpus v. United States, 325 F.2d 264, 267 (10th Cir. 1963)).

38 *Id.* at 310.

39 *But see* discussion *infra* Part III (Colorado is representative of jurisdictions that recognize "inherent ambiguity" in the term "minerals" and permit extraneous evidence on that basis. The other prevailing school of thought—represented by states including Texas, as will be later discussed—is that the term "minerals" is not inherently ambiguous and that the general intent in its use is to refer to substances of value, which are retained by the mineral estate. Such states have engaged in cataloging of various substances, as they arise in litigation, and holdings often conclude that the substances at issue either are or are not "minerals" as a matter of law. In many respects, the determination that frac sand is a mineral would be even more straightforward under this latter approach (which, importantly, is embraced by several states—including Texas—with relatively abundant frac sand deposits)).

40 *But see* AgriBank, FCB v. Laufenberg, 2017 U.S. Dist. LEXIS 15750 (W.D. Wis. 2017).

41 *See generally* ERIC L. MARTIN, FRAC SAND MINING RIGHTS SEMINAR, OWNERSHIP, ACQUISITION, AND LEASING ISSUES FOR FRAC SAND OWNERS AND DEVELOPERS, pt. I (2013),

Kinney, Martin identified the following factors bearing on whether a given substance qualifies as a mineral: "(i) the value, in terms of the profitability of mining and marketing the material, or exceptional characteristics that distinguish the material from the surrounding soil; (ii) the effect of extraction of the material on the surface; and (iii) surrounding circumstances of local custom or usage."[42] While grouped and stated somewhat differently in Minnesota—one of the largest frac sand-producing states in the United States—these factors are largely consistent with the *Kinney* analytical framework in Colorado.[43]

Without concluding that Minnesota courts would depart from their general treatment of common sand, Martin noted several qualitative differences in frac sand that could support such a result:

> Frac sand can be distinguished from other soils and sands by its value and by its unique characteristics that allow it to be used for hydraulic fracturing of hydrocarbon-bearing shale formation. Although prevalent in southeastern Minnesota, unlike ordinary sand deposits, frac sand deposits are not found throughout the United States or even throughout Minnesota.[44]

Not only are frac sand deposits relatively rare (consistent with the prevailing notion of a "mineral"), they are also more chemically distinct from the surrounding soil. For sand to have the "crush-resistant" quality and size specifications desired for oil and gas operations, rock units composed of quartz grains generally must have sustained "multiple cycles of weathering and erosion . . . [to] remove[] most mineral grains other than quartz (or silica)."[45] To provide some frame of reference, Wisconsin and Minnesota frac sand—sometimes referred to as "Northern White" or "Ottawa White"—can be composed of 99.5% pure silica.[46] Harkening back to the language in *Kinney*, frac sand is thus "peculiarly identifiable chemically" from other substances in the soil to an extent that typical aggregates (e.g., common sand and gravel) are not.[47]

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https://www.stoel.com/getattachment/People/M/Eric-L-Martin/Ownership,-Acquisition,-and-Leasing-Issues.pdf.

42 *Id.* at *2 (citing Vang v. Mount, 300 Minn. 393, 400 (1974)).

43 *See supra* text accompanying notes 31–35.

44 MARTIN, *supra* note 41, at *2.

45 *Frac Sand*, OPF ENTERPRISES, http://ontheplantfloor.com/proppants/frac-sand/ (last visited Oct. 25, 2017).

46 Ruth Ravve, *Sand Rush in Midwest, Where Rare Material for Fracking is Mined*, FOX NEWS U.S. (June 26, 2014), http://www.foxnews.com/us/2014/06/26/sand-rush-in-midwest-where-rare-material-for-fracking-is-mined.html.

47 *See* Kinney v. Keith, 128 P.3d 297, 304 (Colo. App. 2005) (quoting *Clay, Sand or Gravel as "Minerals"*).

Having previously touched on the extraordinary value of frac sand, another feature consistent with recognized "minerals," it is also important to note that this value is derived from specialized application in a given industry (i.e., oil and gas operations). Given this close connection with substances broadly regarded as "minerals" in general reservation clauses, there is a potentially stronger inference that parties would consider frac sand to be a mineral in the context of trade usage—i.e., the specific "commercial sense in which the word mineral is used."[48] In dicta, the Michigan Supreme Court has previously observed that "[s]and might or might not be in this category [of minerals]. A vein of *pure white quartz sand*, valuable for making glass *or other special use*, would be within the [mineral estate] reservation, while common mixed sand merely worth digging and removing as material for grading would not be."[49]

Although this is not binding precedent outside of Michigan, the court's reasoning does indicate that judicial determinations regarding party intent may be swayed by a material's heightened value in specialized industries. Indeed, while the *Kinney* framework infers an intent *not* to include common building sand in the definition of "minerals" when oil and gas are prevalent in an area, the exact opposite conclusion could be drawn for frac sand precisely because it *is* located proximately with the oil and gas operations where it would be most useful.

This same consideration might also afford future mineral rights holders a rebuttal to any inferences drawn from the *ejusdem generis* maxim discussed in *Kinney* (and reservation clause cases in many other jurisdictions).[50] In a standard mineral reservation clause covering "oil, gas and all other minerals," common sand used as an aggregate in cement is clearly not of the same character or classification as the enumerated substances preceding "all other minerals."[51] However, under a generous application of the *ejusdem generis* maxim, one could reasonably argue that frac sand shares a sufficiently close nexus with oil and gas operations such that it would not be unreasonable for a mineral rightsholder to think of frac sand as being categorically related for the purpose of defining "minerals." Certainly, such reasoning would at least be consistent with the economic interests of oil and gas operations reserving mineral interests.[52]

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48 *See* Fisher v. Kewenaw Land Ass'n, 124 N.W.2d 784, 787–88 (Mich. 1963) (quoting Hendler v. Lehigh V. R. Co., 209 Pa. 256, 260 (1904)).

49 *Id.* at 788 (emphasis added) (quoting *Hendler*, 209 Pa. at 260).

50 *See Kinney*, 128 P.3d at 306–07; *supra* text accompanying note 37.

51 *See Kinney*, 128 P.3d at 306–07; *supra* text accompanying note 37.

52 *See* Arathy S. Nair & Nivedita Bhattacharjee, *Pullback in U.S. Fracking Sand Use Pressures Producers*, REUTERS (Aug. 15, 2017, 10:05 PM), https://www.reuters.com/article/us-usa-oil-sand/pullback-in-u-s-fracking-sand-use-pressures-producers-

C. Implications of Recognizing Frac Sand as a Mineral

Whether the foregoing differences between frac sand and common sand would have purchase in court remains a matter for open debate. What is clear, however, is that a number of compelling avenues arise to support an argument that frac sand is intended as a mineral that do not apply for common sand. This consideration alone might be expected to influence how parties to mineral reservations proceed in the future to avoid litigation over title issues. For example, Martin suggested in his above mentioned 2013 presentation that "[a] frac sand developer could acquire frac sand rights from both the mineral and non-mineral estate owner" when such estate interests are already split (even though this may involve duplicative payment).[53] And, of course, the path of least resistance for future contracting parties when mineral and surface estates are previously unified would be to specifically enumerate frac sand in—or exclude it from, as the case may be—a reservation clause from the outset. Such contracting precautions would be particularly advisable in future land conveyances, given that the broad modern recognition of frac sand's extraordinary value and unique character could be imputed to both parties in assessing their intent—which, in turn, "controls the scope of [a] reservation."[54]

However, because intent is gauged at the time of a given reservation, a separate question arises for property rightsholders when a severance in the mineral estate occurred *before* frac sand came to be regarded as a "mineral," to the extent it now may be. Naturally, surface estate rights holders in frac sand-rich states may be inclined to breathe a sigh of relief if a mineral reservation in their property preceded the recognition of frac sand as a distinct substance with a specialized use and value warranting its extraction from the surrounding land. While this position may indeed be valid—and perhaps even carry the day in court—there are analogous lines of case law in several jurisdictions that may temper such enthusiasm. Part III of this Article reframes the question of frac sand's mineral status in line with such countervailing precedent.

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idUSKCN1AW07F (noting that "the use of sand . . . represents around 12 percent of the cost of drilling and fracturing" for oil producers).

53 MARTIN, *supra* note 41, at *3–4.

54 Mitchell & Anderson, *supra* note 27.

III. A GENERAL INTENT THEORY FOR AN EVOLVING DEFINITION OF MINERALS

In 1949, Professor Eugene Kuntz, a prominent treatise drafter and thought leader in the mid-century development of U.S. oil and gas law, had grown frustrated with the various tests being employed to determine the intent of parties in using general reservation clauses covering "other minerals."[55] In his view, the manner by which courts resolved such questions (including by use of the factors still employed in *Kinney*) was "completely without value for use in the future in determining the character of substances which remain unknown or are presently considered to have no intrinsic value."[56]

Professor Kuntz believed that land title security should be the ultimate goal to stimulate capital investment in mineral operations. To that end, Professor Kuntz proposed an approach by which courts would consider the "general" intent of contracting parties, based on the manner of enjoyment associated with respective mineral and surface estates, rather than their "specific" intent when the latter cannot be determined due to a reservation clause lacking qualifying language (e.g., "other minerals").[57] According to Professor Kuntz, "[t]he manner of enjoyment of the mineral estate is through extraction of valuable substances, and the enjoyment of the surface is through retention of such substances as are necessary for the use of the surface."[58] Put into practice, this general intent approach would "sever from the surface all substances presently valuable in themselves, apart from the soil, whether their presence is known or not, *and all substances which become valuable through development of the arts and sciences*."[59] Summarized differently in more recent scholarship, the Kuntz test "accommodates the passage of time and development of technology, because any new substance that is discovered or attains special value simply becomes part of the mineral estate."[60]

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55 *See* Brant M. Laue, *Interpretation of Other Minerals in a Grant or Reservation of a Mineral Interest*, 71 CORNELL L. REV. 618, 636 (1986).

56 *Id.* (quoting Eugene Kuntz, *The Law Relating to Oil and Gas in Wyoming*, 3 WYO. L.J. 107, 112 (1949) [hereinafter *Oil and Gas in Wyoming*]).

57 *Id.*

58 *Id.* at 636–37 (quoting *Oil and Gas in Wyoming*, at 112).

59 *Id.* at 637 (emphasis added) (quoting *Oil and Gas in Wyoming*, at 113).

60 *Id.*; *see also* Comment, *Surface or Mineral: A Single Test?*, 23 BAYLOR L. REV. 407, 416 (1971) ("[Kuntz] approach leaves the definition of minerals open and retains a flexibility to provide the answer for any substance which is or hereafter becomes valuable, whether by development of markets, science, or application of technology.").

Although Professor Kuntz's proposal has only been sparingly adopted by courts in the decades since its publication, the reason is not because it has been philosophically rejected, but rather that its greatest utility arises under a narrow and infrequent set of circumstances. Given Professor Kuntz's fundamental interest in title security, he had no interest in upending the apple cart where reliable precedent had long established that certain materials belonged to the surface or mineral estate as a matter of law.[61] The gap that Professor Kuntz's general intent theory fills is for substances that were undiscovered—or for which the value was unknown—at the time of a mineral conveyance and thus were not contemplated at all by the contracting parties in any specific sense.

Perhaps the most notable and illuminating application for Professor Kuntz's test arises in the treatment of uranium. For example, in *Moser v. United States Steel Corp.*, the Texas Supreme Court was confronted with the question of whether uranium ore was included within a 1949 reservation clause covering "oil, gas, and other minerals."[62] At the time of the land conveyance at issue in *Moser*, uranium deposits were not known to exist in the area, nor was the material of sufficient commercial value to justify any real attention being paid to it. Nonetheless, the Texas Supreme Court observed that uranium had subsequently become thought of as a mineral "within the ordinary and natural meaning of the word."[63]

Like many other jurisdictions that have repeatedly needed to construe the term "other minerals" in various contexts, the Texas Supreme Court had historically "determined that some unnamed substances [are] impliedly conveyed or reserved in mineral conveyances by cataloging each, on a substance-by-substance basis, as part of the surface or mineral estate as a matter of law."[64] However, due to the evolution in the understanding of uranium's value, the court was facing a matter of first impression in the sense that uranium had not been subject to this "substance-by-substance" cataloging that would frequently be outcome determinative for other materials previously addressed in precedent. Compounding the lack of guideposts in case law for uranium was the fact that the parties to the land conveyance would not have specifically contemplated uranium at all when the mineral and surface estates were severed.

To deal with the question of contractual intent under such circumstances, the Texas Supreme Court relied heavily on Professor Kuntz's general intent theory:

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61 *See* Laue, *supra* note 55, at 636.

62 676 S.W.2d 99, 100 (Tex. 1984).

63 *Id.* at 102.

64 *Id.* at 101.

> [T]he proper focus when construing an implied grant of minerals is the general, rather than the specific, intent of the parties . . . [T]he general intent of the parties executing a mineral deed or lease is presumed to be an intent to sever the mineral and surface estates, *convey all valuable substances to the mineral owner regardless of whether their presence or value was known at the time of the conveyance*, and to preserve the uses incident to each estate.[65]

Pursuant to this reasoning, the court held that uranium belonged to the mineral estate because its special value and recognition as a mineral—although arising after the execution of the land conveyance—brought it within the general intent of the parties.[66] Simultaneously, the court reaffirmed that it would "continue to adhere . . . to [its] previous decisions which held certain substances to belong to the surface estate as a matter of law."[67] As a result, the tenor of scholarship analyzing *Moser* is that, at least in Texas, the general intent test does not supplant well-established precedent on the mineral or non-mineral status of various substances. Rather, the general intent test fills a jurisprudential void for newly discovered (or newly valuable) materials that were not specifically contemplated by contracting parties nor by precedent at the time of a mineral estate severance.[68]

Several jurisdictions in the Tenth Circuit (other than Colorado) have employed similar tests and reached conclusions similar to *Moser* regarding uranium,[69] as well as helium, petrified wood, and coal-bed methane,[70] but the potential implications for frac sand are equally apparent. In the Western states that have adopted some form of general intent inquiry for mineral reservation clauses, it would be entirely consistent with precedent

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65 *Id.* at 102 (emphasis added) (citing *Oil and Gas in Wyoming*, at 112).

66 *Id.*

67 *Id.*

68 *See, e.g.*, David A. Scott, Comment, *Determining Mineral Ownership in Texas After* Moser v. United States Steel Corp. – *The Surface Destruction Nightmare Continues*, 17 ST. MARY'S L.J. 185, 201–03 (1985).

69 *See, e.g.*, New Mexico & Ariz. Land Co. v. Elkins, 137 F. Supp. 767, 768–69, 773 (D.N.M. 1956) (holding that uranium was included in a 1946 deed reserving "minerals" although it was not discovered in the area until 1950 and "had no commercial value in that locality" prior to that time).

70 *See, e.g.*, Newman v. Rag Wyo. Land Co., 53 P.3d 540, 544 (Wyo. 2002) (concluding that coal-bed methane was a mineral even though it was historically viewed as a valueless waste bi-product of coal operations); Spurlock v. Santa Fe Pacific R. Co., 694 P.2d 299, 311 (Ariz. App. 1984) (holding that "helium, nitrogen potash, industrial clay, and petrified wood" were retained under a mineral reservation clause regardless of "the fact that the original contracting parties may have been unaware of the existence or value of these minerals at the time of the conveyance").

to determine that frac sand qualifies as a mineral even if there is settled case law to the contrary for common sand. Indeed, Texas (where *Moser* was decided) has some of the largest frac sand deposits outside the Wisconsin and Minnesota region.[71] Due to relatively recent scientific and technological developments in the oil and gas industry, frac sand has obtained considerable and specialized value apart from the ordinary enjoyment of the surface estate where it exists.[72] Under the prevailing forms of the general intent test, including *Moser*, the question of whether or not such value was recognized at the time of a given reservation would be immaterial.[73] Furthermore, to the extent that established precedent would constrain courts even in general intent jurisdictions from reversing course on a substance's historical non-mineral designation, no such precedent exists for frac sand. Like uranium in *Moser*, frac sand has not been the subject of "substance-by-substance" cataloging in mineral reservation cases and, in fact, would present a matter of first impression in any U.S. jurisdiction. To the extent that frac sand would now be recognized within the "ordinary and natural meaning" of the word "minerals" as a substance valuable apart from the soil, one might even view it as probable that Texas and other general intent jurisdictions will hold that frac sand is reserved with the mineral estate as a matter of law.[74]

CONCLUSION

Although Colorado has not yet adopted the general intent test, the foregoing precedent may nonetheless offer a persuasive supplement to the framework set forth in *Kinney* when it is clear that the contracting parties to a mineral reservation had *no* specific intent regarding frac sand. As previously discussed, application of the *Kinney* factors to frac sand underscores significant qualitative differences from common sand. Among other distinguishing features, frac sand deposits are geographically rare and the sand itself must meet exacting silica purity and size specifications. Furthermore, the considerable market value of frac

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71 *See* Hana Askren, *Texas Frac Sand in Demand*, FORBES (Sep. 14, 2017, 1:41 PM), https://www.forbes.com/sites/mergermarket/2017/09/14/texas-frac-sand-in-demand/#1442b4bb469e ("Tens of new [frac sand] mines are starting up in Texas and surrounding states . . . .").

72 *See supra* text accompanying notes 7–10.

73 *See* Moser v. United States Steel Corp., 676 S.W.2d 99, 102 (Tex. 1984) ("[A] severance of minerals in an oil, gas and other minerals clause includes all substances within the ordinary and natural meaning of that word, whether their presence or value is known at the time of the severance.").

74 *See id.*

sand is inherently associated with oil and gas operations, a context in which trade usage deviates from common sand.

As a natural corollary to the recognition of frac sand as a distinct substance, Colorado courts may be compelled to discard the seemingly insurmountable hurdle in established case law for litigants arguing that a reservation of "all minerals" or "other minerals" was intended to include common sand. Relieved of this weighty presumption, and perhaps influenced by more analogous precedent for newly discovered or newly valuable substances in general intent jurisdictions, Colorado courts and other jurisdictions applying similar tests may foreseeably hold that frac sand conveys with the mineral estate—at least for recent or future severances thereof. Additionally, decisions to that effect in other states with more abundant frac sand deposits will also be important to monitor for the many oil and gas operations in Colorado that purchase frac sand on the national market.