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A FRACTURED STANDARD: HOW THE FOURTH CIRCUIT GRANTED EXPANSIVE IMPLIED PROPERTY RIGHTS TO MINERAL OWNERS

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Abstract: Extraction of natural gas through hydraulic fracturing poses a significant risk of harm to human health and the environment. West Virginia, like many states that lie above vast oil and gas resources, grants expansive implied property rights to owners of subsurface mineral estates. In *Whiteman v. Chesapeake, L.L.C.*, the United States Court of Appeals for the Fourth Circuit held that a hydraulic fracturing company's construction and use of drilling waste pits on the surface of another's property did not constitute a trespass under West Virginia common law because it was *reasonably necessary* for the recovery of natural gas and did not impose a substantial burden on the surface property. This Comment argues that the court's decision misapplied a common law standard to a unique set of facts and, as a result, has significantly diluted the protections afforded to individual landowners. The court should have determined that a permanent disposal of waste on the surface of another's property exceeds the implied rights of mineral estate owners because such a use is not *necessary*. In addition, even if the court had found that such a disposal was necessary, it should have concluded that permanent disposal of waste was not *reasonable*.

INTRODUCTION

As Americans struggle to heat their homes and fill their gas tanks, many states are relying more heavily on natural gas, one of the few commodities that is truly “made-in-America.”¹ Hydraulic fracturing (“fracking”) is an increasingly utilized technique for natural gas production in the

* Staff Writer, BOSTON COLLEGE ENVIRONMENTAL AFFAIRS LAW REVIEW, 2015–2016.

¹ See Monika Ehrman, *The Next Great Compromise: A Comprehensive Response to Opposition Against Shale Gas Development Using Hydraulic Fracturing in the United States*, 46 TEX. TECH. L. REV. 423, 425 (2014) (noting expanding reliance on natural gas in residential homes); *Natural Gas and Its Uses*, AM. PETROLEUM INST., <http://www.api.org/oil-and-natural-gas-overview/exploration-and-production/natural-gas/natural-gas-uses> [<http://perma.cc/RG9D-QXFC>] (indicating that Americans are using natural gas to heat households and power cars); *Natural Gas Consumption by End Use*, U.S. ENERGY INFO. ADMIN. (Sept. 30, 2015), http://www.eia.gov/dnav/ng/ng_cons_sum_dc_u_nus_a.htm [<http://perma.cc/25HY-9VWA>] (illustrating a comparative analysis of state consumption of natural gas).

United States.² Developments in fracking technology have vastly expanded onshore natural gas production by making it economically feasible to tap reserves that were previously inaccessible.³ The booming fracking industry will likely position the United States as the leading world producer of natural gas by the end of 2015.⁴

Onshore natural gas production promotes national energy security and stimulates the national economy, while simultaneously providing a cleaner alternative to coal.⁵ As a result, many environmental groups assert that natural gas is a key step in bridging the gap between traditional high greenhouse-gas-emitting fossil fuels and low emission technologies, like renewable resources.⁶ Despite its economic benefits, fracking poses a significant threat to the environment and human health due to its potential impact on the quality and quantity of our nation's vital water resources.⁷

Fracking is the process by which pressurized fluids are pumped through natural gas wells⁸ deep into subsurface rock formations⁹ to fracture the formation and release trapped natural gas.¹⁰ A vertical well is drilled through the surface, extending thousands of feet until it reaches a natural gas storing rock formation, such as shale.¹¹ Once the proper depth is reached, the vertical well pivots horizontally, extending through the length

² See ENVTL. PROT. AGENCY, ASSESSMENT OF THE POTENTIAL IMPACTS OF HYDRAULIC FRACTURING FOR OIL AND GAS ON DRINKING WATER RESOURCES, at ES-1 (2015), http://www.epa.gov/sites/production/files/2015-07/documents/hf_es_erd_jun2015.pdf [<http://perma.cc/WM8S-AQ75>] (finding recent technological developments in hydraulic fracking have fostered an increase in production and economic benefits); Terry W. Roberson, *Environmental Concerns of Hydraulically Fracturing a Natural Gas Well*, 32 UTAH ENVTL. L. REV. 67, 67 (2012) (noting that fracking is “the leading trend in onshore natural gas exploration and production”).

³ See ENVTL. PROT. AGENCY, *supra* note 2.

⁴ Ehrman, *supra* note 1, at 423, 425.

⁵ See *id.* at 427. Natural gas-fired power plants produce roughly half the carbon dioxide emissions of coal-fired plants. *Id.*

⁶ See *id.*; Roberson, *supra* note 2, at 68.

⁷ ENVTL. PROT. AGENCY, *supra* note 2.

⁸ See Ehrman, *supra* note 1, at 431–32. Wells are large cylindrical holes drilled through the surface, deep into the earth, to reach a natural gas-storing rock formation. *Id.* The wells act as conduits, allowing natural gas to flow out of the rock formations, into the well, and up to the surface for collection. See *id.*

⁹ See Roberson, *supra* note 2, at 69–70. Shale rock formations are major sources and reservoirs of natural gas in the United States. *Id.* at 69. Shale, a fine-grained sedimentary rock formed by the compaction of silt and clay-sized mineral particles, breaks easily into thin pieces along many thin layers and produces gas composed of methane. *Id.*

¹⁰ *Id.* at 70; see Ehrman, *supra* note 1, at 433 (describing generally the production process).

¹¹ See Ehrman, *supra* note 1, at 431; Roberson, *supra* note 2, at 70. Shale formations, which date back to the Mississippian age, a sub-period in the geologic timescale, are 6500 to 8500 feet deep with a thickness ranging from a hundred to 600 feet. Roberson, *supra* note 2, at 70. The Marcellus Shale, which covers 95,000 square miles across southern New York, Pennsylvania, western Maryland, eastern Ohio, and West Virginia, is a middle Devonian age formation that is 4000 to 8500 feet deep and ranges in thickness from fifty to 200 feet. *Id.*

of the formation.¹² After the well is fully drilled and prepared,¹³ fluids are injected into the well at high pressures to fracture the surrounding shale formation.¹⁴ The fracking fluids are then pumped back out of the well, allowing natural gas to flow into the well from the newly created fractures, and then up to the surface for collection.¹⁵

A major risk factor identified by the Environmental Protection Agency (EPA), and a primary concern of many landowners with property located near fracking wells, is that the fracking production and waste disposal processes can severely contaminate the United States' limited water resources.¹⁶ Well construction and operation produces large quantities of solid and liquid waste, including spent fracking fluids ("flowback"), drill cuttings, and mud.¹⁷ Fracking fluids are generally composed of water (90%), proppant (9.5%), and chemical additives (0.5%).¹⁸ Each well requires millions of gallons of water that, once mixed with these chemical additives, are rendered undrinkable and hazardous to the environment.¹⁹ In a recent study, EPA identified 1076 chemical additives used in the fracking process and determined that human consumption of many of these chemicals could manifest negative health effects, including carcinogenesis, immune system effects, changes in blood chemistry, neurotoxicity, liver and kidney toxicity, and reproductive and developmental toxicity.²⁰ In the United States, thousands of wells are drilled and fractured each year, with an estimated

¹² Ehrman, *supra* note 1, at 431.

¹³ *See id.* at 431, 433. After the well is drilled, it is lined with a steel casing and cemented to isolate and protect groundwater. *Id.* at 431. Next, a perforating gun is inserted into the well and uses explosive charges to create holes in the casing, the surrounding cement, and the shale formation. *Id.* at 432.

¹⁴ ENVTL. PROT. AGENCY, *supra* note 2.

¹⁵ Ehrman, *supra* note 1, at 433.

¹⁶ ENVTL. PROT. AGENCY, *supra* note 2, at ES-6, ES-19 to -21; *see also* Whiteman v. Chesapeake Appalachia, L.L.C. (*Whiteman II*), 729 F.3d 381, 383 (4th Cir. 2013) (noting that the plaintiffs are concerned about the environmental effects of the waste pits). The EPA also identified four other concerns: withdrawing water during times of low water availability; spilling contaminated fracking fluids; fracking directly into below-ground drinking water resources; and fluids migrating below ground. ENVTL. PROT. AGENCY, *supra* note 2, at ES-6.

¹⁷ *See* Ehrman, *supra* note 1, at 433-34; Austin C. Whitmore, Note, *Oilfield Recycling in Texas: Why Command and Control Regulations Are Stifling the End Goal*, 44 TEX. ENVTL. L.J. 287, 289-90 (2014). Once the formation is fractured and the fracking fluids are extracted from the well, flowback is collected at the surface. *See* Ehrman, *supra* note 1, at 433. Generally, far less than fifty percent of the fracking fluids are extracted from the well. *Id.* at 434. The drilling process also produces large amounts of solid and liquid waste, including drill cutting and mud. *See* Whitmore, *supra*, at 290.

¹⁸ Roberson, *supra* note 2, at 75. Proppant is a material, usually sand, that is added to the fracking fluid to prop open the fractures and allow the natural gas to flow out. *Id.*

¹⁹ *See* ENVTL. PROT. AGENCY, *supra* note 2, at ES-6, ES-12 to -13.

²⁰ *See id.* at ES-12 to -13.

100,000 to 120,000 new wells fractured between 2011 and 2014 alone.²¹ Between 2011 and 2012, 88 billion gallons of water were directly contaminated through fracking activities.²²

Lisa and Martin Whiteman (the “Whitemans”) were members of a large group of at least 9.4 million U.S. citizens who live near fracking wells.²³ The Whitemans were West Virginia landowners who raised sheep and grew hay on the surface of approximately 101 acres of land.²⁴ Their property rested atop the Marcellus Shale, one of the largest shale formations in the United States.²⁵ As is common in states with vast quantities of mineral resources, the mineral estate beneath the Whitemans’ 101 acres was split from the surface estate.²⁶ As a result, the Whitemans owned the surface while Chesapeake Appalachia, L.L.C. (“Chesapeake”) held the rights to the subsurface mineral estate pursuant to a lease agreement between Chesapeake and a third party.²⁷ Chesapeake, the second-largest producer of natural gas in the United States, operated three natural gas wells on the surface of the Whitemans’ property.²⁸

The Whitemans were primarily concerned with Chesapeake’s disposal of waste produced from the construction and use of these wells on their surface property.²⁹ Stored in open pits on the surface property, the waste included drill cuttings, mud, and chemical additives.³⁰ The use of open pits for waste disposal was a common disposal method employed by Chesapeake in West Virginia at the time the wells were drilled.³¹ Alternative disposal methods, such as “closed-loop” systems, however, were used by Chesapeake in other areas of the country.³² Although Chesapeake did not

²¹ See *id.* at ES-5 (calculating the total amount of new wells over the entire period by combining the average annual increases).

²² See *id.* at ES-6 to -7. While this represents only one percent of the nation’s total annual water use, the impact is much greater at the local level. See *id.*

²³ See *Whiteman II*, 729 F.3d 381, 383 (4th Cir. 2013) (noting that the Whitemans live on 101 acres of land where Chesapeake Appalachia, L.L.C. operates three natural gas wells); ENVTL. PROT. AGENCY, *supra* note 2, at ES-5 to -6 (stating that at least 9.4 million residents live within one square mile of a fracking well).

²⁴ See *Whiteman II*, 729 F.3d at 382–83.

²⁵ See *id.* at 383; Roberson, *supra* note 2, at 70.

²⁶ See *Whiteman II*, 729 F.3d at 382–83; see also *Teel v. Chesapeake Appalachia, L.L.C.*, 906 F. Supp. 2d 519, 522 (N.D. W. Va. 2012) (noting that the deed severed the mineral estate from surface estate by deed); *Marvin v. Brewster Iron Mining Co.*, 55 N.Y. 538, 539–40 (1874) (implying that the mineral estate was severed from surface estate by warranty deed).

²⁷ *Whiteman II*, 729 F.3d at 383.

²⁸ *Id.* at 381, 383; *About*, CHESAPEAKE ENERGY, <http://www.chk.com/about> [<http://perma.cc/CDN9-CQVS>].

²⁹ See *Whiteman II*, 729 F.3d at 384.

³⁰ *Id.* at 383–84.

³¹ *Id.* at 384.

³² *Id.*

begin implementing the alternative, closed-loop system in West Virginia until 2009, Chesapeake had used it in Oklahoma since 2004 and Texas since 2005.³³ In the closed-loop system, the drilling company removes drill cuttings and waste from the well location for disposal in off-site landfills.³⁴ The closed-loop system allows more of the expensive and toxic drilling fluid to be reused in future drilling operations, removes the possibility of a pit failure and the resulting contamination, and creates a smaller overall drilling operation footprint at the well site.³⁵ On the other hand, closed-loop systems are generally more expensive to implement.³⁶

In *Whiteman v. Chesapeake Appalachia, L.L.C.*, the United States Court of Appeals for the Fourth Circuit affirmed that permanent disposal of drill cuttings and other waste products from the operation of three natural gas wells stored by the holder of subsurface mineral rights in open surface pits did not constitute a trespass under West Virginia law.³⁷ The court reasoned that such disposal was reasonably necessary for the extraction of natural gas, in part due to the valid permits possessed by Chesapeake.³⁸ This Comment argues that the court's decision misapplied a common law standard to a unique set of facts and, as a result, has significantly diluted the protections afforded to individual landowners.³⁹ The court should have determined that a permanent disposal of waste on the surface of another's property exceeds the implied rights afforded to holders of mineral rights because such a use is unnecessary.⁴⁰ The existence of alternative disposal methods effectively removed the necessity of permanent disposal on the Whitemans' property.⁴¹ In addition, even if the court found that such disposal was necessary, it should have concluded that permanent disposal of waste was unreasonable.⁴² If the court had properly applied the language of the common law standard, the court would have concluded that Chesapeake's use of the Whitemans' surface property was not reasonably necessary for Chesapeake's enjoyment of the mineral estate and, therefore, constituted a trespass.⁴³

³³ *Id.*

³⁴ *Id.*

³⁵ *Id.*; see ENVTL. PROT. AGENCY, *supra* note 2, at ES-6, ES-12 to -13.

³⁶ See *Whiteman II*, 729 F.3d at 384.

³⁷ See *id.* at 394 (inferring that the waste disposal did not constitute a trespass on the Whitemans' property because it was reasonably necessary and, therefore, Chesapeake had lawful authority to dispose its fracking waste).

³⁸ See *id.* at 392-94.

³⁹ See *infra* note 85-121 and accompanying text.

⁴⁰ See *infra* note 99-121 and accompanying text.

⁴¹ See *infra* note 99-121 and accompanying text.

⁴² See *infra* note 99-121 and accompanying text.

⁴³ See *infra* note 99-121 and accompanying text.

I. FACTS AND PROCEDURAL HISTORY

Lisa and Martin Whiteman owned the surface rights to approximately 101 acres of land in Wetzel County, West Virginia, where they lived, grew hay, and raised sheep.⁴⁴ Two severance deeds, dated 1952 and 1965, split the mineral estate from the surface estate, thereby allowing the surface and subsurface rights of the property to be held separately.⁴⁵ The severance deeds were broad, neither reserving any specific rights to the mineral estate owner nor addressing permanent waste disposal on the surface.⁴⁶ Pursuant to a lease agreement from the third party owner of the subsurface rights, Chesapeake held the subsurface mineral rights to the property.⁴⁷

Before fracking operations began, Chesapeake obtained well work and discharge permits from the West Virginia Department of Environmental Protection (“WVDEP”) for the construction and management of the wells.⁴⁸ Chesapeake gave the Whitemans notice of its intent to drill and dispose of waste on the property.⁴⁹ The WVDEP permit application attached to the notice stated that Chesapeake intended to dispose of waste, including drill cuttings, in surface pits.⁵⁰ Drilling operations produced a large volume of drill cuttings, mud, and chemical additives, all of which were disposed of in two open, lined pits on the surface property.⁵¹ After drilling was completed, Chesapeake removed the plastic liner from the pits and buried the contaminated waste by mixing it with clean soil from the surface.⁵²

Chesapeake’s well operations and waste disposal pits rendered ten acres of the Whitemans’ surface property “unusable for any suitable purpose.”⁵³ Nevertheless, Chesapeake’s appraiser testified that the property had suffered no diminution or loss in value as a result of Chesapeake’s operations.⁵⁴ Moreover, the Whitemans admitted that their monetary damages were “not real significant.”⁵⁵ The Whitemans originally sought to enforce their property rights through a number of tort law claims, but subsequently voluntarily dismissed all of them except their claim for common law trespass.⁵⁶

⁴⁴ *Whiteman II*, 729 F.3d 381, 382–83 (4th Cir. 2013).

⁴⁵ *See Whiteman v. Chesapeake Appalachia, L.L.C. (Whiteman I)*, 873 F. Supp. 2d 767, 770 (N.D. W. Va. 2012).

⁴⁶ *See Whiteman II*, 729 F.3d at 383.

⁴⁷ *See id.*

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ *See id.*

⁵¹ *See id.* at 383–84, 383 n.3.

⁵² *Id.* at 384.

⁵³ *Id.* at 383.

⁵⁴ *Id.* at 384.

⁵⁵ *Id.*

⁵⁶ *See id.* at 385.

The Whitemans filed their trespass action in the Circuit Court of Wetzel County, West Virginia and Chesapeake removed it to the United States District Court for the Northern District of West Virginia on the basis of diversity of citizenship.⁵⁷ The parties cross-moved for partial summary judgment on the trespass claim.⁵⁸ The court denied the Whitemans' motion and granted Chesapeake's motion, holding that Chesapeake's construction and use of drill waste pits on the Whitemans' property did not constitute a trespass under West Virginia law.⁵⁹ The Whitemans appealed to the United States Court of Appeals for the Fourth Circuit.⁶⁰

II. LEGAL BACKGROUND

In the 1945 decision, *Hark v. Mountain Fork Lumber Co.*, the Supreme Court of Appeals of West Virginia considered, *inter alia*, whether a lumber company's transportation of lumber across the plaintiff's tramway constituted a trespass even if the damages were merely negligible and repairable.⁶¹ Notably, the court defined trespass as "an entry on another man's ground without lawful authority" that caused damage, however slight, "to his real property."⁶² Drawing on that definition, the court reasoned that the protection of property rights would not be denied solely because damages were merely negligible.⁶³ As a result, the lumber company's use of the tramway was held to constitute a trespass.⁶⁴

In many states with rich mineral resources, it is common for a property's surface rights to be split from the subsurface mineral rights and held separately.⁶⁵ In *Marvin v. Brewster Iron Mining Co.*, an 1874 decision, the Court of Appeals of New York considered the extent to which the owner of subsurface mineral rights, reserved through deed and located beneath privately owned surface property, may use the surface for the extraction of minerals.⁶⁶ The Brewster Mining Company owned and operated an iron ore mine beneath the plaintiff's surface property.⁶⁷ To facilitate its mining operations, Brewster Mining Company permanently erected a blacksmith shop, a powder house for storing blasting materials, and a stable for horses on the

⁵⁷ *Whiteman I*, 873 F. Supp. 2d 767, 769 (N.D. W. Va. 2012).

⁵⁸ *Id.*

⁵⁹ *See id.* at 770, 777, 779.

⁶⁰ *Whiteman II*, 729 F.3d at 382.

⁶¹ *Hark v. Mountain Fork Lumber Co.*, 34 S.E.2d 348, 350–52 (W. Va. 1945).

⁶² *Id.* at 352.

⁶³ *Id.*

⁶⁴ *Id.* at 350, 355.

⁶⁵ *See Whiteman II*, 729 F.3d at 383; *Teel v. Chesapeake Appalachia, L.L.C.*, 906 F. Supp. 2d 519, 522 (N.D. W. Va. 2012); *Marvin v. Brewster Iron Mining Co.*, 55 N.Y. 538, 539–40 (1874).

⁶⁶ *See Marvin*, 55 N.Y. at 538–40.

⁶⁷ *See id.*

plaintiff's surface land.⁶⁸ In addition, the company stored ore, rubbish, and refuse on the surface for several years, constructed a steam engine to run the mine, and created a large hole for mine access.⁶⁹

The court held that a reservation by deed of mineral rights constitutes a constructive grant that, unless explicitly restricted by the deed, carries an implied right to use the surface to the extent that it is *necessary* for the *reasonable* enjoyment of the mineral estate.⁷⁰ Therefore, a mineral owner has the implied right to penetrate the surface to extract minerals in such a "manner as is convenient and advantageous to the owner of the right," without rendering the surface "wholly destroyed."⁷¹ The mineral owner's right to use the surface, however, is limited to what is "necessary," not only convenient.⁷² The court reasoned that necessity must precede convenience, noting that a mineral owner does not have the right to use the surface property merely "because it is convenient for him, unless it is first *necessary*."⁷³ The court further found that "considerations of vital economy" seldom create necessity.⁷⁴ Although the court reversed the lower court's judgment and ordered a new trial in order to apply the newly established "reasonably necessary" standard to the facts, the court found that "[i]t is very rare[]" that a mine owner can "justify the use of the surface for . . . the long-continued deposit of the rubbish"⁷⁵

In the 1909 decision, *Porter v. Mack Manufacturing Co.*, the Supreme Court of Appeals of West Virginia adopted the reasonably necessary standard established in *Marvin*.⁷⁶ In *Porter*, the mineral owner sought an injunction to stop the surface owner from blocking its construction of a tramway through the surface.⁷⁷ The court held that using the surface was necessary for ore mining and that a tramway was a suitable means for reaching the necessary outcome.⁷⁸ In its decision, the *Porter* court reiterated that a necessity must precede a suitable, convenient, or reasonable result.⁷⁹

In the 1980 decision, *Buffalo Mining Co. v. Martin*, the Supreme Court of Appeals of West Virginia applied the reasonable necessary standard and emphasized the distinction between express and implied rights of mineral

⁶⁸ See *id.* at 540–41.

⁶⁹ See *id.* at 540–42.

⁷⁰ See *id.* at 538.

⁷¹ *Id.*

⁷² *Id.* The court observed that a mineral owner can take necessary actions in a convenient manner. *Id.*

⁷³ *Id.* at 553 (emphasis added).

⁷⁴ *Id.* at 538, 554.

⁷⁵ *Id.* at 553, 565.

⁷⁶ See *Porter v. Mack Mfg. Co.*, 64 S.E. 853, 854–55 (W. Va. 1909).

⁷⁷ See *id.* at 853.

⁷⁸ See *id.* at 855.

⁷⁹ See *Marvin*, 55 N.Y. at 553; *Porter*, 64 S.E. at 854–55.

owners.⁸⁰ In *Buffalo Mining Co.*, the surface owner interfered with the mineral owner's construction of a power line through the surface for the purpose of powering mine ventilation.⁸¹ The court concluded that when a mineral owner acts under implied rights not expressly granted by deed, "the test of what is reasonable and necessary becomes more exacting"⁸² Therefore, the right must be reasonably necessary for the extraction of the minerals and may only be exercised "without any substantial burden to the surface owner."⁸³ Although the court affirmed the reasonable necessary standard and established an additional "undue burden" requirement, it did not apply the standard because those issues were not raised at trial.⁸⁴

III. ANALYSIS

In *Whiteman v. Chesapeake Appalachia L.L.C.*, the United States Court of Appeals for the Fourth Circuit held that Chesapeake Appalachia, L.L.C.'s ("Chesapeake") construction and use of drilling waste pits on Lisa and Martin Whiteman's (the "Whitemans") surface property did not constitute a trespass under West Virginia common law because it was reasonably necessary for the recovery of natural gas and did not impose a substantial burden on the Whitemans' surface property.⁸⁵ Under West Virginia common law, a trespass occurs when one enters onto or leaves something on the land of another's property without lawful authority.⁸⁶ Lawful authority can be obtained by license or agreement, such as a lease or deed.⁸⁷ A line of precedent, extending from *Marvin v. Brewster Iron Mining Co.*, established that a grant of subsurface mineral rights in a property carries with it an implied right to use the surface to the extent that it is reasonably necessary for the use and enjoyment of the mineral estate without substantially burdening the surface owner.⁸⁸ As a result, the court determined that the owner of mineral rights beneath a surface property has implied lawful authority to enter onto and leave things on another's property to the extent that it is reasonably necessary.⁸⁹

The court held that, pursuant to a lease agreement with the owner of the mineral rights beneath the Whitemans' surface property, Chesapeake

⁸⁰ See *Buffalo Mining Co. v. Martin*, 267 S.E.2d 721, 721, 725–26 (W. Va. 1980).

⁸¹ See *id.* at 722.

⁸² *Id.* at 725.

⁸³ *Id.* at 725–26.

⁸⁴ *Id.*

⁸⁵ See *Whiteman II*, 729 F.3d 381, 394 (4th Cir. 2013).

⁸⁶ See *Hark v. Mountain Fork Lumber Co.*, 34 S.E.2d 348, 352 (W. Va. 1945).

⁸⁷ *Whiteman II*, 729 F.3d at 387.

⁸⁸ See *id.* at 387, 394; *Marvin v. Brewster Iron Mining Co.*, 55 N.Y. 538, 538 (1874); *Buffalo Mining Co.*, 267 S.E.2d at 721; *Porter v. Mack Mfg. Co.*, 64 S.E. 853, 854 (W. Va. 1909).

⁸⁹ See *Whiteman II*, 729 F.3d at 394.

had lawful authority to construct and use waste pits on the surface because this use was reasonably necessary and did not substantially burden the Whitemans.⁹⁰ The court first determined that the waste pits did not substantially burden the Whitemans.⁹¹ In reaching this conclusion, the court relied on testimony from Chesapeake's expert who asserted that the Whitemans' property had suffered no diminution as a result of the waste pits.⁹² In addition, the court specifically noted that the Whitemans admitted at trial that their damages were "not real significant" despite also acknowledging that the pits rendered ten acres of the surface no longer "suitable for any purpose."⁹³ The court emphasized that because the Whitemans failed to present sufficient evidence and rebut Chesapeake's expert's testimony, they were unable to meet the burden of proof necessary to show that the waste pits were a substantial burden.⁹⁴ As a result, the Whitemans could only establish that Chesapeake lacked lawful authority by showing that the waste pits were not reasonably necessary.⁹⁵

Next, the court concluded that the waste pits were reasonably necessary for Chesapeake's extraction of minerals because Chesapeake had valid permits for the waste pits and because the pits were a common method for waste disposal in the area.⁹⁶ Before Chesapeake began drilling, it obtained valid permits from the West Virginia Department of Environmental Protection ("WVDEP"), which specifically listed onsite waste pit disposal as the expected disposal method.⁹⁷ In addition, the court determined that onsite waste pits were a reasonable method for disposal because, though a "closed-loop" method was also available, it was more expensive to implement and was not used by Chesapeake in West Virginia at the time the pits were constructed.⁹⁸

Although there are many cases that discuss the implied rights of a mineral owner, *Whiteman* was the first case to specifically address the construction and use of waste disposal pits for drill cuttings and other drilling waste materials.⁹⁹ In reaching its decision, however, the court misapplied the reasonably necessary standard, significantly weakening the standard laid

⁹⁰ See *id.* at 383, 394.

⁹¹ See *id.* at 392.

⁹² *Id.* at 384, 392.

⁹³ *Id.* at 383–84.

⁹⁴ See *id.* at 392.

⁹⁵ *Id.*

⁹⁶ See *id.* at 392–93.

⁹⁷ *Id.* at 383.

⁹⁸ *Id.* at 392–93.

⁹⁹ *Teel v. Chesapeake Appalachia, L.L.C.*, 906 F. Supp. 2d 519, 524 (N.D. W. Va. 2012).

out by the *Marvin* court.¹⁰⁰ The court should have first determined whether or not onsite disposal of waste was necessary *before* it even considered reasonableness.¹⁰¹ If it had done so, the court would have found that onsite disposal was unnecessary due to the existence of an alternative disposal method.¹⁰² Second, even if the court had found that onsite disposal was necessary, the court should have given more weight to the explicit language of the court in *Marvin* and determined that permanent waste disposal on the surface was unreasonable.¹⁰³ If the court had vigorously applied the language of the *Marvin* standard, the court would have held that Chesapeake's use of the surface was not reasonably necessary for the enjoyment of the mineral estate.¹⁰⁴

The court in *Marvin* emphasized that necessity is what gives rise to implied surface rights and, therefore, necessity must precede a consideration of reasonableness.¹⁰⁵ The court states that, “[T]he rights which follow ownership as incident thereto, are no more nor greater than those which are necessary for the beneficial enjoyment of the property.”¹⁰⁶ In *Whiteman*, however, the court applied a combined standard that failed to distinguish between necessity and reasonableness.¹⁰⁷ This part-necessity and part-reasonableness standard enabled the court to over-emphasize the existence of valid permits, which should not have been a consideration in determining necessity, and under-emphasize the existence of alternative disposal meth-

¹⁰⁰ Compare *Whiteman II*, 729 F.3d at 392–94 (concluding that permanent waste disposal does not exceed the implied rights of a mineral owner because it is reasonably necessary despite the existence of alternative disposal methods), with *Marvin v. Brewster Iron Mining Co.*, 55 N.Y. 538, 538 (1874) (stating that long-continued or permanent disposal of refuse on the surface exceeded the implied rights of a mineral owner and indicating that a necessity must precede consideration of reasonableness or convenience).

¹⁰¹ See *Gerrity Oil & Gas Corp. v. Magness*, 946 P.2d 913, 927 (Colo. 1997) (concluding that surface use must be reasonable and necessary); *Marvin*, 55 N.Y. at 538 (indicating that there must first be necessity before a consideration of reasonableness or convenience of surface use).

¹⁰² See *Gerrity Oil & Gas Corp.*, 946 P.2d at 927 (“[W]hen the operations of a lessee or other holder of mineral rights would preclude or impair uses by the surface owner, and when reasonable alternatives are available to the lessee, the doctrine of reasonable surface use requires the lessee to adopt an alternative means.”).

¹⁰³ See *Marvin*, 55 N.Y. at 538 (“It is very rarely, then, that a case arises where, upon this test, the mine owner can justify the use of the surface for the lengthened keeping of his ore . . . [and] more rarely, for the long-continued deposit of the rubbish . . .”); see also *Hooper v. Dora Coal Mining Co.*, 10 So. 652, 653 (Ala. 1892) (deciding that prolonged use of the surface for disposal of refuse from mineral operations was trespass); *Lanahan v. Myers*, 389 P.2d 92, 93 (Okla. 1963) (concluding that the failure to use surface waste pits for a prolonged period of time was longer than reasonably necessary).

¹⁰⁴ See *Hooper*, 10 So. at 653–54; *Gerrity Oil & Gas Corp.*, 946 P.2d at 927; *Marvin*, 55 N.Y. at 538; *Lanahan*, 389 P.2d at 93.

¹⁰⁵ See *Marvin*, 55 N.Y. at 538.

¹⁰⁶ *Id.* at 552.

¹⁰⁷ See *Whiteman II*, 729 F.3d 381, 392–93 (4th Cir. 2013).

ods.¹⁰⁸ Although it is undoubtedly necessary that Chesapeake needed to select a waste disposal method, the existence of a less invasive alternative should have been given more weight by the court.¹⁰⁹

If the court had first determined necessity, the court would have found that Chesapeake's use of onsite disposal was unnecessary due to Chesapeake's ability to implement a close-loop disposal system.¹¹⁰ Although Chesapeake did not use the closed-loop system in West Virginia or in any eastern state at the time the wells were drilled, Chesapeake did use the system in Texas and Oklahoma and, therefore, the closed-loop system was a feasibly available alternative method.¹¹¹ The closed-loop system, however, would have been more expensive to implement.¹¹² Nevertheless, the court in *Marvin* stated that, "[I]t is seldom that considerations of vital economy can create a necessity."¹¹³ In addition, the increased costs of implementation would have been offset by better preservation of expensive drilling mud for future drilling operations, elimination of the possibility of a pit failure, reduction of the drilling operation's footprint at the well site, and prevention of future environmental contamination.¹¹⁴

Even if the court had determined that, despite the availability of the closed-loop system, the onsite waste pits were necessary, the court should not have concluded that permanent waste disposal on the surface was reasonable.¹¹⁵ In reaching its decision, the court relied too heavily on Chesapeake's valid waste pit permits from the WVDEP and on common industry practices, ignoring the prohibitive language in *Marvin* and other precedent extending therefrom.¹¹⁶ In *Marvin*, the court emphasized that long-term disposal of waste on the surface would exceed the mineral owner's rights, stating that it would be rare "that a case arises where, upon this test, the [mineral right] owner can justify the use of the surface for the lengthened keep-

¹⁰⁸ See *id.* (considering the existence of WVDEP permits and common industry practice, while discounting the existence of the closed-loop method in conducting reasonably necessary analysis).

¹⁰⁹ See *Gerrity Oil & Gas Corp.*, 946 P.2d at 927.

¹¹⁰ See *Whiteman II*, 729 F.3d at 392–93; *Gerrity Oil & Gas Corp.*, 946 P.2d at 927; *Marvin*, 55 N.Y. at 538.

¹¹¹ See *Whiteman II*, 729 F.3d at 384.

¹¹² See *id.* (noting that the close-loop system would cost an additional \$100,000 per well to implement).

¹¹³ *Marvin*, 55 N.Y. at 538.

¹¹⁴ See *Whiteman II*, 729 F.3d at 384; ENVTL. PROT. AGENCY, *supra* note 2 (identifying potential for environmental impacts).

¹¹⁵ See *Hooper v. Dora Coal Mining Co.*, 10 So. 652, 653–54 (Ala. 1892); *Marvin*, 55 N.Y. at 538; *Lanahan v. Myers*, 389 P.2d 92, 93 (Okla. 1963).

¹¹⁶ See *Whiteman*, 729 F.3d at 393 (failing to discuss the language in *Marvin v. Brewster Iron Mining Co.* prohibiting deposit of refuse on surface); *Hooper*, 10 So. at 655; *Marvin*, 55 N.Y. at 538 (indicating that the disposal of refuse on the surface exceeds the implied rights of the mineral owner); *Lanahan*, 389 P.2d at 93.

ing” of waste and “more rarely, for the long-continued deposit of the rubbish”¹¹⁷ Permanent or long-term disposal of waste on the surface creates a prolonged burden on the surface owner that is not reasonably necessary for the extraction of minerals because the burden can remain even after cessation of mineral operations.¹¹⁸ Therefore, the *Whiteman* court should have determined that the permanent disposal of waste on the surface was not reasonably necessary for Chesapeake’s enjoyment of the mineral estate and imposed an undue burden on the *Whitemans*.¹¹⁹

The court’s decision significantly weakens the reasonably necessary standard by transforming it into a mere reasonableness analysis.¹²⁰ As a result, the court’s conclusion in *Whiteman* heavily favors expansive mineral rights at the expense of restricting the rights of surface owners.¹²¹

CONCLUSION

Natural gas production through hydraulic fracturing poses a serious risk to public health due to its potential to contaminate water with many highly toxic chemicals. In *Whiteman v. Chesapeake Appalachia, L.L.C.*, the United States Court of Appeals for the Fourth Circuit held that permanent disposal of certain fracking waste in surface pits did not exceed the implied rights of a mineral owner. This decision significantly weakens the reasonably necessary standard, affording extensive implied rights to mineral owners, while greatly reducing a surface owner’s ability to protect himself from the many risks associated with fracking operations. In applying the standard, the court failed to distinguish between necessity and reasonableness and deviated too far from *Marvin v. Brewster Iron Mining Co.* when reaching its conclusion. The court should have followed *Marvin*’s standard and held that it was unnecessary for Chesapeake to permanently dispose of waste in onsite pits due to the existence of alternative disposal methods. Lacking necessity, the court should not have considered reasonableness. But even if the court had determined that onsite disposal was necessary, the court should not have reached the conclusion that such a use of the surface

¹¹⁷ See *Marvin*, 55 N.Y. at 553.

¹¹⁸ See *Hooper*, 10 So. at 653 (concluding that the deposit of refuse on the surface constituted a trespass lacking continued necessity); *Marvin*, 55 N.Y. at 538; *Lanahan*, 389 P.2d at 93 (deciding that the failure to use surface pits for several years was longer than reasonably necessary).

¹¹⁹ See *Hooper*, 10 So. at 653; *Gerrity Oil & Gas Corp. v. Magness*, 946 P.2d 913, 927 (Colo. 1997); *Marvin*, 55 N.Y. at 538; *Lanahan*, 389 P.2d at 93.

¹²⁰ See *Whiteman II*, 729 F.3d at 392–94; see also *Johnson v. Suttles*, 227 P.3d 664, 669 (Okla. Civ. App. 2009) (choosing to apply a more lenient reasonable necessity standard, rather than an absolute necessity standard, in granting an easement by necessity for an oil well service road).

¹²¹ See *Whiteman II*, 729 F.3d at 392–94; *Teel v. Chesapeake Appalachia, L.L.C.*, 906 F. Supp. 2d 519, 524 (N.D. W. Va. 2012).

was reasonable. Although *Whiteman* was the first time a court considered the specific factual situation in which a mineral right owner was permanently disposing of drill cuttings and waste in open surface pits, courts have consistently found that permanent disposal of refuse, trash, and other waste on the surface is not within the implied mineral rights created through a deed. The court's decision creates a precedent that will force future courts to allow mineral owners to subvert the rights of surface owners.