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Misissippi V. Tennessee: A Groundwater Case That Mistakenly Relies on Surface Water Doctrines

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MISSISSIPPI V. TENNESSEE: A GROUNDWATER CASE THAT MISTAKENLY RELIES ON SURFACE WATER DOCTRINES

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INTRODUCTION

Growing up, schoolchildren are often taught that the world is mostly covered by water. While this is true, only 2.5% of the world's water is actually usable freshwater.[1] Of the world's freshwater, 68.7% is currently trapped in glaciers or ice caps.[2] Only 1.2% is surface water—water located on the surface of the planet contained in lakes, streams, and rivers.[3] The remaining 30% is groundwater, which is water found under the earth's surface.[4] Those areas with groundwater resources often rely on them heavily for uses such as drinking water and agriculture. For instance, about 90% of the water that Mississippians use on a daily basis is groundwater.[5] Similarly, Memphis, Tennessee is second only to San Antonio, Texas among U.S. cities in the amount of groundwater it uses.[6]

The United States has multiple aquifers that underlie more than one state. As water resources are becoming increasingly stressed by climate change, interstate water disputes are becoming more common. The Supreme Court of the United States has developed a common law framework for resolving disputes over interstate surface water resources, known as "equitable apportionment."[7] However, the Court has never resolved a dispute over interstate groundwater resources. *Mississippi v. Tennessee*, a case over

1. *Where Is Earth's Water?*, U.S. GEOLOGICAL SURVEY, https://www.usgs.gov/special-topic/water-science-school/science/where-earths-water?qt-science_center_objects=0#qt-science_center_objects [https://perma.cc/BYA8-2E4H].
2. *Id.*
3. *Id.*
4. *Id.*
5. THOMAS E. REILLY ET AL., U.S. GEOLOGICAL SURV., GROUND-WATER AVAILABILITY IN THE UNITED STATES 12 (2008).
6. J.V. BRAHANA & R.E. BROSHEARS, U.S. DEP'T OF THE INTERIOR, U.S. GEOLOGICAL SURV., HYDROGEOLOGY AND GROUND-WATER FLOW IN THE MEMPHIS AND FORT PILLOW AQUIFERS IN THE MEMPHIS AREA, TENN. WATER-RESOURCES INVESTIGATIONS REP. 89-4131 2 (2001).
7. Catherine Janasie, *Mississippi v. Tennessee Case Update*, NAT'L SEA GRANT L. CTR. (Oct. 19, 2018), http://nsglc.olemiss.edu/blog/archive/2018/oct/19/index.html [https://perma.cc/2YN4-EYVP].

the use of groundwater in the Sparta Aquifer (which underlies MS, TN, AL, AR, LA, and TX), is the first case of its kind.[8]

Mississippi is concerned with the City of Memphis pumping groundwater close to the MS-TN border.[9] Pumping a large amount of groundwater changes the flow of water, causing more water to flow towards the point(s) of extraction in one state, thus lowering the water table of neighboring states.[10] Mississippi claims Memphis's water extraction has caused billions of gallons of water to leave Mississippi.[11] Importantly, Mississippi is not treating the aquifer as an interstate resource that should be shared.[12] Instead, the state is claiming the groundwater is state property that Memphis is "stealing." As a result, Mississippi is asking the Court for over $600 million in monetary damage.[13]

Tennessee is claiming the water is an interstate resource, and thus, the equitable apportionment framework should apply to the case.[14] Under that framework, neither state has any right to the water until the Court apportions the water.[15] The doctrine's basis is that each state is entitled to "equality of right," not equal amounts of water.[16] Importantly, since it is an equitable remedy, the state of Mississippi would not be able to seek monetary remedies under this doctrine.

Mississippi's approach to the case has left many scratching their heads about why it did not include equitable apportionment in its complaint. The answer may lie in the fact that the state may have a hard time establishing a sufficient injury compared to Memphis's need to rely on groundwater. Further, the state may have not sought equitable apportionment because it wanted to pursue monetary damages.

However, there are serious issues with how Mississippi has framed its case. Besides its assertion that the state owns the groundwater underlying land within its borders, Mississippi relies heavily on its argument that surface water and groundwater are different. States have traditionally regulated the two resources separately; however, Mississippi regulates both through a permit system. The state's argument is further weakened by the fact that it relies on two surface water legal doctrines to help make its case: the equal footing doctrine and the public trust doctrine.

Further, Mississippi claims that it is best left to manage its own groundwater resources.[17] This shines a spotlight on Mississippi's own management regime. While the state was progressive in adopting a permit

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8. *Id.*
9. *Id.*
10. *Id.*
11. *Id.*
12. *Id.*
13. *Id.*
14. *Id.*
15. *Id.*
16. *Id.*
17. Janasie, *supra* note 7.

system for both surface and groundwater in 1985, Mississippi has not enforced the terms of these permits.[18] Thus, groundwater in the state continues to be mined, with resources in the Delta seriously strained.

This case is noteworthy in its novelty, but it also draws light on each state's management of its water resources. As surface water resources continue to be further stressed due to changing climates, we are going to increasingly need to depend on groundwater, especially within large interstate aquifers. This paper will first provide a brief overview of water law, including the frameworks governing surface water, groundwater, and interstate disputes. Next, the paper will examine the management of water in both Mississippi and Tennessee, as well as give the history of the *Mississippi v. Tennessee* lawsuit. The paper then discusses the problem with Mississippi relying on surface water doctrines to make ownership claims over groundwater. Finally, the paper considers why Mississippi may not have pursued equitable apportionment.

I. WATER LAW BASICS

Water law provides the framework that guides our decisions about who can use freshwater resources and for what purpose.[19] Water use is generally regulated on the state level—states get to determine their own rules on how to allocate the water within their borders.[20]

While water law is mostly state law based, the Supreme Court of the United States has developed a framework, known as equitable apportionment, to resolve water disputes between states.

The law has treated surface water and groundwater differently. States regulate groundwater under a handful of legal doctrines.[21] However, surface water has a stark regional difference, with the eastern and western United States following different doctrines.[22] An overview of the laws regulating surface and groundwater, as well as interstate disputes, is provided below.

A. Surface Water

In the United States, the East has traditionally been water rich, while the West has been dry and arid.[23] This difference in water availability has resulted in two different legal regimes regulating surface water in the Eastern

18. DAVID W. MOODY ET AL., NAT'L WATER SUMMARY 1985: HYDROLOGIC EVENTS AND SURFACE-WATER RESOURCES 300 (1986).
19. CATHERINE JANASIE & RACHEL BUDDRUS, NAT'L SEA GRANT LAW CTR., MISS. RIVER VALLEY ALLUVIAL AQUIFER AND SPARTA AQUIFER COMPARISON REP. FOR THE STATES OF MISS., TENN., AND MO.I 4 (2018).
20. *Id.*
21. *Id.* at 4–5.
22. *Id.*
23. DAVID H. GETCHES ET AL., WATER LAW IN A NUTSHELL 4–5 (5th ed. 2015).

and Western United States.[24] In order to deal with water scarcity, western states developed the prior appropriation doctrine.[25] In the prior appropriation system, the state issues water rights to users on a time-based priority basis, thus earning the doctrine the popular name "first in time, first in right."[26] However, a water right does not guarantee the holder the ability to withdraw water from a surface water source.[27] If a surface water source does go dry before it is a junior holder's turn to draw water, he or she is out of luck, as many surface water systems in the west are over appropriated.[28]

The legal regime in the Eastern United States is known as riparianism.[29] Traditionally, water rights belong to those who own property along waterways—these property owners are known as riparians. Under the common law, these riparians have a right to use the water abutting their property as long as the use is reasonable and does not negatively affect the rights of other riparians.[30] This means, until there is a problem, there is very little monitoring or control over how much water a riparian owner is using.[31]

However, as water resources in the Eastern United States have become strained due to both water shortages and increased demand, some states have adopted permit systems that require certain water withdrawals to be permitted.[32] These systems vary by state, but are generally referred to as regulated riparianism.[33] Over half of the riparian eastern states have adopted some form of regulated riparianism, though the complexity of the permit systems can range from simple to comprehensive.[34]

B. Groundwater

In most states, groundwater is regulated separately from surface water.[35] While in the past there were reasons for this difference in regulation, such as a lack of understanding of the science related to groundwater, this is no longer the case.[36] However, many states continue to regulate surface water and groundwater separately, despite the growing amount of evidence of connecting some aquifers to surface water.[37] Further, the nature of aquifers

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24. *Id.*
25. Coffin v. Left Hand Ditch Co., 6 Colo. 443 (1882).
26. GETCHES ET AL., *supra* note 23, at 71–72.
27. *Id.* at 105–06.
28. *See* Empire Lodge Homeowners' Ass'n v. Moyer, 39 P.3d 1139 (Colo. 2011).
29. *See* Harris v. Brooks, 283 S.W.2d 129 (Ark. 1955).
30. *Id.*
31. *Id.*
32. *Id.*
33. *Id.*
34. GETCHES ET AL., *supra* note 23, at 61.
35. Joseph W. Dellapenna, *A Primer on Groundwater Law*, 49 IDAHO L. REV. 265, 268 (2018).
36. *Id.*
37. Sharon B. Megdal et al., *Groundwater Governance in the United States: A Mosaic of Approaches*, *in* ADVANCES IN GROUNDWATER 483, 490–91 (2018).

themselves have led to the mistaken belief that these sources of water are limitless.[38] In reality, groundwater is replenished at extremely low rates.[39]

As a result of these physical characteristics of aquifers, laws and regulations often allow overpumping. Due to overpumping, most aquifers are being "mined," a term of art that means more water is being pumped out of the source than is being recharged.[40] Aquifers are susceptible to mining because, as discussed above, aquifer recharge happens at very low rates—often inches per year—while pumping often depletes aquifers at feet per year.[41]

States have developed varying common law groundwater doctrines, including the rule of capture, American reasonable use, correlative rights, and prior appropriation.[42] These doctrines are not simply based on use rights. Since groundwater pumping can have negative effects on your neighbors, groundwater doctrines often also include rules of liability.[43]

The oldest groundwater common law doctrine is the rule of capture, which allows a landowner to pump groundwater from his or her property.[44] Also known as the absolute ownership doctrine, the rule also insulates a landowner who withdraws groundwater from beneath the surface of his land from any liability to neighboring landowners for the injuries that those withdrawals cause, as long as the landowner is not pumping in a willful or negligent way to cause harm.[45] As the scientific understanding of groundwater has increased, the rule of capture's popularity has decreased.[46] While the doctrine is still followed in several jurisdictions, such as Texas and Maine, the doctrine can be modified in areas with critical groundwater levels. For instance, the rule of capture does not apply to water withdrawals from the Edwards Aquifer in Texas.[47]

The American reasonable use doctrine modifies the rule of capture and started replacing the rule of capture in states in the early 20th century.[48] The American reasonable use doctrine mostly mirrors the rule of capture, but with the requirement that the groundwater be used on the overlying tract of land for a reasonable use.[49]

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38. Stephen Foster & John Chilton, *Groundwater Management: Policy Principles and Planning Practices*, in ADVANCES IN GROUNDWATER 73, 77 (2018).

39. *Id.*

40. *See Aquifer Mining, Oxford Reference,* https://www.oxfordreference.com/view/10.1093/oi/authority.20110803095420729.

41 . Stephen Foster & John Chilton, *Groundwater Management: Policy Principles and Planning Practices*, *in* ADVANCES IN GROUNDWATER 73, 77 (2018).

42 . JANASIE & BUDDRUS, *supra* note 19, at 5–6.

43. *Id.*

44. *Id.*

45. *See* Sipriano v. Great Spring Waters of Am., Inc., 1 S.W.3d 75 (Tex. 1999).

46. JANASIE & BUDDRUS, *supra* note 19, at 5–6.

47. *Id.*

48. *Id.*

49. *See* Meeker v. City of East Orange, 74 A. 379 (N.J. 1909).

Under the correlative rights doctrine, a person only has an usufructuary interest in groundwater and not a proprietary interest.[50] The doctrine requires that water be shared based on both the water's use and the rights of other landowners in the area.[51] Thus, being a landowner does not necessarily give you a right to pump up water beneath your land.[52]

Finally, the prior appropriation doctrine for groundwater is very similar to the surface water doctrine.[53] As with surface water, the senior users who first pumped the groundwater for a beneficial use gain priority over junior users and have superior rights to use the water.[54] Unlike with surface water, however, where an entire river or stream can go dry, when a groundwater well dries up there can still water left in the aquifer, meaning that the water could be accessed by drilling a deeper well.[55]

C. Interstate Disputes

While state law governs most uses of water, when two or more states disagree on how to share water resources between them, different rules apply. Interstate water disputes can be resolved in several different ways. For instance, Congress can settle the dispute through legislation, or states can enter into compacts governing how to share water resources that cross state borders, such as has been done by the states bordering the Great Lakes.[56] In 2005, the Great Lake states of Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin, with the consent of the U.S. Congress, entered into a compact "[t]o act together to protect, conserve, restore, improve and effectively manage" and "remove causes of present and future controversies" in the Great Lakes Basin.[57] But if states cannot reach an agreement among themselves, the dispute must be resolved by the Supreme Court of the United States.[58]

1. Original Jurisdiction

The Court has original jurisdiction in disputes between two or more states.[59] However, the Court does not automatically hear all interstate disputes—instead the Court requires a complaining state to file a motion asking the Court for leave to file a complaint.[60] Once this initial motion is

50 . JANASIE & BUDDRUS, *supra* note 19, at 5–6.
51. *See* Woodsum v. Pemberton Twp., 412 A.2d 1064 (N.J. Super. Ct. Law Div. 1980).
52. *Id.*
53. JANASIE & BUDDRUS, *supra* note 19, at 5–6.
54. *Id.*; *see also* Farmers Inv. Co. v. Bettwy, 558 P.2d 14, 19 (Ariz. 1976).
55. *Id.*
56. *See* Great Lakes-St. Lawrence River Basin Water Resources Compact (2005).
57. *Id.* § 4.3
58. U.S. CONST., art. III, § 2, cl. 2.
59. *Id.*
60. SUP. CT. R. 17.

filed, the named parties file briefs on whether or not the Court should hear the case.[61]

Because the Court is primarily an appellate court, it has decided to exercise its "original jurisdiction 'sparingly' and retains 'substantial discretion' to decide whether a particular claim requires 'an original forum in this court.'"[62] A study looking at original jurisdiction cases brought before the Court found that from 1961–1993, the Court only granted leave to file a complaint in about half of the cases seeking the Court's original jurisdiction.[63] However, during the same time period, the Court received a total of 16 cases concerning the rights to interstate waters and only declined to hear two.[64]

Unlike in cases that come before the Court on appeal, in cases between states, the Supreme Court serves as the trial court. Since the early 20th century, in original jurisdiction cases the Court has appointed a "special master" to run a trial-like process for each case.[65] The special master is bound by the Court's rules governing original jurisdiction cases.[66] These rules specify that the Federal Rules of Procedure apply to motions and pleadings in the case, but are only guidance for all other aspects of the case.[67] Likewise, the Federal Rules of Evidence are only guidance and not binding in proceedings before the special master.

Besides the Court's rules, the special master is also bound by whatever directions the Court makes when appointing the master.[68] For example, in the *Mississippi v. Tennessee* case, the Court directed the special master "to fix the time and conditions for the filing of additional pleadings, to direct subsequent proceedings, to summon witnesses, to issue subpoenas, and to take such evidence as may be introduced and such as he may deem it necessary to call for."[69] Thus, the special master has a great deal of discretion in how to run the trial-like procedure.

At the end of the trial-like process, the special master will prepare a report to deliver to the Court.[70] The Court will then decide whether to accept the master's findings and recommendations in whole or in part.[71] While the

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61. Vincent L. McKusick, *Discretionary Gatekeeping: The Supreme Court's Management of its Original Jurisdiction Docket Since 1961*, 45 ME. L. REV. 185, 188 (1993)
62. South Carolina v. North Carolina, 558 U.S. 256, 267 (2010) (quoting Mississippi v. Louisiana, 506 U.S. 73, 76 (1992)).
63. McKusick, *supra* note 61, at 189.
64. *Id.* at 202.
65. Anne-Marie C. Carstens, *Lurking in the Shadows of Judicial Process: Special Masters in the Supreme Court's Original Jurisdiction Cases,* 86 MINN. L. REV. 625, 644 (2002).
66. SUP. CT. R. 17.
67. *Id.*
68. Carstens, *supra* note 65, at 653–54.
69. Mississippi v. Tennessee, No. 143 Original, Order Appointing Special Master, Nov. 10, 2015, https://www.ca6.uscourts.gov/special-master [https://perma.cc/U2Z4-EFFF].
70. Carstens, *supra* note 65, at 655–56.
71. *Id.*

Court is known for giving deference to special masters, there are times when the Court will send the case back to the special master to make further findings.[72]

2. Equitable Apportionment

The Supreme Court created the common law doctrine of equitable apportionment to resolve disputes over the use of interstate waters in a 1907 case, *Kansas v. Colorado*.[73] When equitably apportioning water, the Court determines the rights of each state to use an interstate water.[74] Over the years, the Court has established some general rules for equitable apportionment.

When determining how to apportion water between states, the Court will consider the laws of the individual states, but has ruled that those laws are not binding.[75] Further, in trying to reach an equitable result, the Court will not engage in "quibbling over formulas."[76] With equitable apportionment, each state is entitled to "equality of right."[77] The Court has stated that this does not necessarily amount "to an equal division of water, but to the equal level or plane on which all the states stand, in point of power and right, under our constitutional system."[78]

The Court has stated that equitable apportionment is a flexible doctrine, and it will consider all relevant factors of the case.[79] In previous cases, the Court has given factors that will inform its decision, which include:

> physical and climatic conditions, the consumptive use of water in the several sections of the river, the character and rate of return flows, the extent of established uses, the availability of storage water, the practical effect of wasteful uses on downstream areas, [and] the damage to upstream areas as compared to the benefits to downstream areas if a limitation is imposed on the former.[80]

The circumstances of certain equitable apportionment cases have also led the Court to consider some additional factors. In *Colorado v. New*

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72. *See* Florida v. Georgia, 138 S. Ct. 2502 (2018) (rejecting the special master's recommendation to dismiss the complaint and remanding the case back to the special master to make further findings).
73. Kansas v. Colorado, 206 U.S. 46 (1907).
74. Colorado v. New Mexico, 459 U.S. 176, 183-84 (1982).
75. *Id.*
76. New Jersey v. New York, 283 U.S. 336, 343 (1931).
77. Wyoming v. Colorado, 259 U.S. 419, 465 (1922).
78. *Id.*
79. Colorado v. New Mexico, 459 U.S. at 183 (citing Nebraska v. Wyoming, 325 U.S. 589, 618 (1945)).
80. Florida v. Georgia, 138 S. Ct. 2502, 2515 (2018) (quoting citing Nebraska v. Wyoming, 325 U.S. 589, 618 (1945)).

Mexico, the Court declared that in equitable apportionment cases, "wasteful or inefficient uses [of water] will not be protected."[81] In that case, the Court further declared that it has "invoked equitable apportionment not only to require the reasonably efficient use of water, but also to impose on states an affirmative duty to take reasonable steps to conserve and augment the water supply of an interstate stream."[82]

Since the Court has never apportioned a case involving only groundwater, it developed these factors to address the characteristics of surface water. Thus, it is hard to predict how the Court would apply its equitable apportionment decisions to a case solely involving groundwater. At this time, however, this is still a hypothetical discussion. This is because, as discussed below, Mississippi is not seeking equitable apportionment in the *Mississippi v. Tennessee* case.

II. WATER LAW IN MISSISSIPPI AND TENNESSEE

Since water law is mostly a creature of state law and Mississippi is not seeking equitable apportionment, it is important to examine how both Mississippi and Tennessee regulate water use within their borders. An overview of the laws and regulations in regards to the use of freshwater resources for each state is provided below, as well as a short discussion of the major uses of freshwater in Mississippi and Tennessee.

A. Water Law in Mississippi

Through statute, Mississippi has outlined the state's interest in waters within its borders. Mississippi law states that:

> All water, whether occurring on the surface of the ground or underneath the surface of the ground, is hereby declared to be among the basic resources of this state to therefore belong to the people of this state and is subject to regulation in accordance with the provisions of this chapter. The control and development and use of water for all beneficial purposes shall be in the state, which, in the exercise of its police powers, shall take such measures to effectively and efficiently manage, protect and utilize the water resources of Mississippi.[83]

81. Colorado v. Mexico, 459 U.S. 176, 184 (1982).
82. *Id.*
83. MISS. CODE. ANN. § 51-3-1 (2019) ("No person who is not specifically exempted by this chapter shall use water without having first obtained a permit as provided herein and without having otherwise complied with the provisions of this chapter, the regulations promulgated hereunder and any applicable permit conditions.").

Mississippi is a regulated riparian state.[84] Those wishing to use either surface water or groundwater in the state must first obtain a permit from the Mississippi Department of Environmental Quality (MDEQ) Permit Board.[85] Mississippi law provides a couple of exemptions to this requirement. First, a person does not need to obtain a permit for purely domestic purposes.[86] In addition, those pumping water from a well less than six inches in diameter also do not need a permit.[87]

The MDEQ and its Office of Land and Water Resources (OLWR) has ranked the beneficial uses for groundwater from those uses with the highest priority to the lowest priority.[88] OLWR has designated public water supply, industrial, and commercial uses as the highest priority uses of groundwater.[89] OLWR delineates industrial and commercial uses into more specific categories, including agriculture, industrial, livestock, and commercial.[90]

The OLWR also lists several limitations on uses of water for both surface and groundwater.[91] The limitations for surface water are based on the established minimum flow for a given watercourse.[92] The MDEQ Permit Board may limit municipal users and industrial users if a water use will negatively affect an established minimum flow.[93] The limitations for groundwater are situation specific.[94] For example, MDEQ does not consider the use of a large amount of water for a once-through, non-contact cooling purpose as a beneficial use.[95] Thus, under the regulations one is prohibited from using an amount of water in excess of 20,000 gallons per day.[96]

As a state, Mississippi is highly dependent on groundwater, as it draws only 427 million gallons per day (mgd) of surface water as compared to 2,240 mgd of groundwater.[97] The main uses for fresh surface water include irrigation (130 mgd), industrial (109 mgd), thermoelectric power (84 mgd), public supply (53.4 mgd), and aquaculture (39.3 mgd).[98] For groundwater, the main uses are irrigation (1,640 mgd), public supply (347 mgd),

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84 . DON R. CHRISTY ET AL, A COMPARISON OF SURFACE WATER LAWS AND REGULATIONS FROM SOUTHEASTERN STATES (2005), https://athenaeum.libs.uga.edu/bitstream/handle/10724/19397/surfacewater.pdf?sequence=1 [https://perma.cc/C6S4-JAQA].

85. MISS. CODE ANN. § 51-3-5(1) (2019).

86. *Id.* § 51-3-7.

87. *Id.*

88. 11 Miss. Admin. Code R. Pt. 7, R. 1.4 (West, Westlaw current through Oct. 2019).

89. *Id.*

90. *Id.*

91. JANASIE & BUDDRUS, *supra* note 19, at 8.

92. 11 Miss. Admin. Code R. Pt. 7, R. 1.3 (West, Westlaw current through Oct. 2019).

93. *Id.*

94. *Id.* R. 1.4.

95. *Id.*

96. *Id.*

97. U.S. GEOLOGICAL SURV., ESTIMATED USE OF WATER IN THE UNITED STATES IN 2015 14–16 (2018).

98. *Id.* at 14.

aquaculture (87.5 mgd), industrial (72.8 mgd), and private domestic supply wells (48.1 mgd).[99]

With Mississippi, it is important to note that groundwater withdrawals are coming from two different aquifers. The Mississippi River Valley Alluvial Aquifer (MRVA) is located in multiple states, and the majority of the aquifer is located beneath Arkansas, Mississippi, and Tennessee.[100] The majority of groundwater permits in Mississippi, around 80%, are drawing from the MRVA, and these permits are managed by the Yazoo Mississippi Delta Joint Water Management District (YMD).[101] The state created the YMD to manage diminishing water levels in the MRVA, which the state's agricultural sector relies heavily on.[102] The Sparta aquifer extends from south Texas through Louisiana, Arkansas, Tennessee, Mississippi, and into Alabama.[103] The Sparta aquifer is the aquifer in dispute in the *Mississippi v. Tennessee* lawsuit and is relied upon by north Mississippi and Shelby County, Tennessee for drinking water.[104]

B. Water Law in Tennessee

Tennessee, unlike Mississippi, does not have a single overarching statute governing water resources in the state. Like Mississippi, however, the state of Tennessee has made broad property declarations towards water through its water quality and drinking water statutes.[105] In its drinking water law, the state declares that "the waters of the state are the property of the state and are held in public trust for the benefit of its citizens," and "the people of the state are beneficiaries of this trust and have a right to both an adequate quantity and quality of drinking water."[106]

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99. *Id.* at 16.

100. U.S. DEP'T OF THE INTERIOR, MISS. RIVER VALLEY ALLUVIAL AQUIFER, ALA., ARK., ILL., KY., LA., MISS., TENN.; 2006–2008, https://catalog.data.gov/dataset/mississippi-river-valley-alluvial-aquifer-alabama-arkansas-illinois-kentucky-louisian-2006-2008 (last updated Jan. 29, 2020) [https://perma.cc/T9DG-WBS2].

101. *Permitting*, YAZOO MISS. DELTA JOINT WATER MGMT. DIST., https://ymdstoneville.squarespace.com/permitting [https://perma.cc/4XVZ-JTGN].

102. *History*, YAZOO MISS. DELTA JOINT WATER MGMT. DIST., https://ymdstoneville.squarespace.com/history [https://perma.cc/47T8-JSYD].

103. U.S. GEOLOGICAL SURV., THE SPARTA AQUIFER: A SUSTAINABLE WATER RESOURCE, https://pubs.usgs.gov/fs/fs-111-02/ [https://perma.cc/49LV-994K].

104. State of Mississippi's Mot. for Leave to File Bill of Compl. in Original Action, Compl., and Br. in Supp. of Mot., at 5–6.

105. TENN. CODE ANN. § 68-221-702 (2019).

106. *Id.* The state has made a similar statement in its Water Quality Control Act: "Recognizing that the waters of Tennessee are the property of the state and are held in public trust for the use of the people of the state, it is declared to be the public policy of Tennessee that the people of Tennessee, as beneficiaries of this trust, have a right to unpolluted waters. In the exercise of its public trust over the waters of the state, the government of Tennessee has an obligation to take all prudent steps to secure, protect, and preserve this right." *Id.* § 69-3-102(a). Section 68-221-702 also creates a planning obligation on behalf of the state: "Recognizing that the waters of the state are the property of the state and are held in public

Tennessee regulates surface water in the state under the riparian doctrine.[107] Courts in the state have determined that riparian owners can use the steam in a reasonable manner as it flows past their property.[108] Like other riparian states, the right of the riparian is only usufruct—the landowner can use the water, but does not own the water itself.[109] Similarly, the riparian's right is equal to all other riparians, and his or her use cannot negatively affect the use of another riparian.[110] The Tennessee courts have also given priority to domestic uses, while stating that other uses such as irrigation or industrial are allowed as long as another riparian's domestic use is not impaired.[111]

Groundwater law in Tennessee is not as well established, as there are few cases on the subject.[112] The leading case in the state speaks to both reasonable use and correlative rights.[113] In referring to the reasonable use rule, the court cites cases from other states like New Hampshire and Florida that also mention correlative rights.[114] For instance, the quoted language from Florida states, "[t]he property rights relative to the passage of waters that naturally percolate through the land of one owner to and through the land of another owner are correlative; and each landowner is restricted to a reasonable use of his property as it affects subsurface waters passing to or from the land of another."[115]

Tennessee does have some aspects of regulated riparianism, but not to the extent of other states like Mississippi. Through the Tennessee Water Resources Information Act, the Inter-Basin Transfer Act, and the Water Quality Control Act, the state regulates withdrawals from surface and groundwater to a certain extent.[116] Tennessee created the Water Resources Information Act ("Information Act") to "institute a system of registration so that adequate information is obtained to document current demand for water and to project growth in that demand . . . ."[117] The Information Act requires anyone withdrawing more than 10,000 gallons or more of surface or groundwater per day must register with the commissioner of the Tennessee

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trust for the benefit of its citizens, it is declared that the people of the state are beneficiaries of this trust and have a right to both an adequate quantity and quality of drinking water." *Id.* § 68-221-702.

107. 25 TENN. JURIS. WATER AND WATERCOURSES § 11; *see also* Hurley v. Am. Enka Corp., 93 F .Supp. 98 (E.D. Tenn. 1950).

108. Cox v. Howell, 65 S.W. 868, 868–69 (Tenn. 1901).

109. *Id.*

110. *Id.* at 869.

111. *Id.*

112. *See* LEGAL & INSTITUTIONAL FRAMEWORK WORKING GRP., TENN. H20, TENNESSEE'S ROADMAP TO SECURING THE FUTURE OF OUR WATER RESOURCES 9 (2018).

113. Nashville, Chattanooga & St. Louis Ry. v. Rickert, 89 S.W.2d 889, 896–97 (Tenn. Ct. App. 1935).

114. *Id.* at 897.

115. *Id.* (quoting Cason v. Florida Power Co., 74 Fla. 1, 7 (1917).

116. TENN. CODE ANN. §§ 69-7-201 to -204 (2019).

117. *Id.* § 69-7-302.

Department of Environment and Conservation (TDEC).[118] However, there are certain exceptions to the registration requirement, such as withdrawals for agricultural purposes.[119]

The Inter-Basin Transfer Act ("IBT Act") mostly regulates surface water use in Tennessee, but also covers groundwater in particular circumstances.[120] The IBT Act requires TDEC to permit certain transfers between water basins.[121] The IBT Act only applies to certain persons or entities in the state: those "that have been granted powers by the state to acquire water, water rights and associated property by eminent domain or condemnation" and those "that acquire or supply water for the use or benefit of public water supply."[122] These entities who intend to increase their use or plan on introducing a new use must obtain a permit from TDEC.[123] While the IBT Act primarily applies to surface water, the permitting requirements can also apply to groundwater.[124] If a groundwater withdrawal "has a significant potential to adversely affect the flow of a Tennessee surface water," the IBT Act applies to the withdrawal.[125]

Finally, TDEC regulates certain water diversions in the state through the Aquatic Resource Alteration Permit (ARAP) program.[126] Water withdrawals that would alter "the physical, chemical, radiological, biological, or bacteriological properties of any waters of the state" require an ARAP.[127] Thus, groundwater withdrawals that alter surface waters may require an ARAP.[128] Exemptions do exist for the ARAP program, however.[129] For instance, as discussed above with the Information Act, agricultural operations are exempt from the ARAP program.[130]

The majority of water used in Tennessee is surface water.[131] As of 2015, Tennessee used 5,990 mgd of surface water and only 430 mgd of groundwater.[132] The primary use for surface water in the state is thermoelectric (4,620 mgd) followed by industrial (682 mgd), public supply

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118. *Id.* §§ 69-7-303 to -304.

119. *Id.* § 69-7-304.

120. *Id.* § 69-7-201.

121. *Id.* §§ 69-7-201 to -202. Under the IBT Act, "basins" are major Tennessee rivers and their tributaries, including the Mississippi River. *Id.* § 69-7-203.

122. *Id.* § 69-7-204(a).

123. *Id.*

124. JANASIE & BUDDRUS, *supra* note 19, at 11–12.

125. *Id*; *see also* TENN. CODE ANN. § 69-7-204 (2019).

126. TENN. CODE ANN. § 69-3-108 (2019); Aquatic Resource Alteration Permit (ARAP), TENN. DEP'T OF ENV'T & CONSERVATION, https://www.tn.gov/environment/permit-permits/water-permits1/aquatic-resource-alteration-permit--arap-.html [https://perma.cc/R73M-54DN].

127. TENN. CODE ANN. § 69-3-108(b)(1) (2019).

128. JANASIE & BUDDRUS, *supra* note 19, at 11–12.

129. Tenn. Comp. R. & Regs. 0400-40-07-.02.

130. TENN. CODE ANN. § 69-3-120(g).

131. CHARLES E. BOHAC & AMANDA K. BOWEN, TENN. VALLEY AUTH., WATER USE IN THE TENNESSEE VALLEY FOR 2010 AND PROJECTED USE IN 2035 (2012).

132. U.S. GEOLOGICAL SURV., *supra* note 97, at 9.

(594 mgd), aquaculture (45.2 mgd), and irrigation (27.4 mgd).[133] While thermoelectric power is the largest user of surface water, it is also the largest source of return flow in the state.[134]

The majority of groundwater is used for public water supply (256 mgd), followed by industrial (51.6 mgd), domestic use (42.8 mgd), irrigation (36.4 mgd), and thermoelectric (2.18 mgd).[135] The uses of groundwater in West Tennessee, where the MRVA and Sparta aquifers are located, include public water supply, industrial, and agriculture.[136] In particular, Memphis and surrounding Shelby County rely primarily on groundwater for its drinking water supplies.[137]

III. *MISSISSIPPI V. TENNESSEE*

Currently, Mississippi and Tennessee are in a dispute concerning groundwater from the Memphis Sands Aquifer, which is fed mostly by the Sparta Sands Aquifer and underlies several states including Mississippi and Tennessee.[138] Mississippi and Tennessee both pump water from this aquifer.[139] The City of Memphis pumps its water very close to the Mississippi-Tennessee border.[140] Mississippi has challenged this use before by suing the City of Memphis for monetary damages.[141] In 2009, the Fifth Circuit Court of Appeals dismissed Mississippi's lawsuit, ruling that Mississippi had framed its case incorrectly.[142] The court determined that the aquifer was an interstate resource, so Tennessee, which was not named in the suit, was a necessary party.[143] Further, the court ruled that since it was an interstate dispute between the states of Mississippi and Tennessee, original and exclusive jurisdiction belonged to the Supreme Court of the United States.[144]

In 2015, Mississippi motioned the Court for leave to file a suit against Tennessee, the City of Memphis and the Memphis Light, Gas, and

133. *Id.* at 14.
134. BOHAC & BOWEN, *supra* note 131.
135. U.S. GEOLOGICAL SURV., *supra* note 97, at 16.
136. JANASIE & BUDDRUS, *supra* note 19, at 12.
137. Tom Charlier, *The Memphis Sand Aquifer: A Buried Treasure*, COMMERCIAL APPEAL (Dec. 16, 2016, 12:03 PM), https://www.commercialappeal.com/story/news/environment/2016/12/16/memphis-sand-aquifer-buried-treasure/93814278/ [https://perma.cc/NL37-BF3V].
138. *Id.*
139. *Id.*
140. *Id.*
141. *Id.*
142. *Id.*; *see also* Hood *ex rel.* Mississippi v. City of Memphis, 570 F.3d 625, 633 (5th Cir. 2009).
143. JANASIE & BUDDRUS, *supra* note 19, at 6–7.
144. *Id.*

Water Division, regarding the use of the aquifer, and the Supreme Court granted the motion.[145]

A. *Mississippi v. Tennessee* Overview

In the current lawsuit, Mississippi is concerned with Memphis pumping groundwater close to the border between the two states.[146] When someone pumps large amounts of groundwater, it creates what is known as a cone of depression.[147] The pumping changes the flow of water, causing more water to flow your way and lowering the water table of your neighbor, forcing them to need a deeper well.[148]

The states of Mississippi and Tennessee have very different theories for the case.[149] Tennessee, referring to the previous Fifth Circuit decision, is claiming the water is an interstate resource, and thus, the Court needs to determine how much each state is entitled to.[150] Mississippi claims that Memphis's pumping has taken billions of gallons of water out of Mississippi—water that is "owned" by Mississippi.[151] Like its previous lawsuit, Mississippi is treating the water in the aquifer as Mississippi property, not as an interstate resource. Instead of equitable apportionment, the state is seeking monetary damages of not less than $615 million for the water Tennessee has taken.[152]

The Court has appointed the Hon. Eugene E. Siler of the U.S. Court of Appeals for the Sixth Circuit as the special master for the case.[153] After considering each state's initial filings in the case, the Special Master issued a Memorandum of Decision in August 2016 that ordered an initial hearing on whether the aquifer was an interstate resource.[154] In the Memorandum, the Special Master noted that he did not think that Mississippi had made its case in its initial pleadings.[155] The Special Master made a similar statement in its 2018 opinion denying Tennessee's motion for summary judgment.[156]

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145. *Id.*
146. Janasie, *supra* note 7.
147. *Id.*
148. *Id.*
149. *Id.*
150. *Id.*; *see also* Br. of Def. State of Tennessee in Opp'n to State of Mississippi's Mot. for Leave to File Bill of Compl. in Original Action at 22–24, Mississippi v. Tennessee, No. 15–143 (U.S. Sept. 14, 2015).
151. *Id.*
152. JANASIE & BUDDRUS, *supra* note 19, at 6–7; *see also* State of Mississippi's Mot. for Leave to File Bill of Compl. in Original Action, Compl., and Br. in Supp. of Mot., *supra* note 95, at 14.
153. *Id.*
154. *Id.*
155. *Id.*
156. Mem. of Decision on Tennessee's Mot. to Dismiss, Memphis and Memphis Light, Gas & Water Division's Mot. to Dismiss, and Mississippi's Mot. to Exclude, Mississippi v. Tennessee, No. 55-143 (U.S. Aug. 12, 2016).

Since that time, the parties have participated in an initial hearing on the specific question the Special Master highlighted in his 2016 Memorandum of Decision—"whether the water that is at issue in this case is interstate in nature."[157] Relying on this language, Mississippi has been trying to make the case in its response that, even though they are part of a larger aquifer, the Sparta Sand and Memphis Sand are separate aquifers and geologic formations, thus making the groundwater in Mississippi intrastate in nature.[158] At the time of writing, the Special Master has not released his ruling on this initial hearing.

B. The Flaws in Mississippi's Case

Mississippi has several flaws in its argument. The first flaw is its claim that it owns the groundwater within the state. Secondly, it relies on the proposition that surface water and groundwater are treated differently under the law. However, it should be noted that these claims are intertwined, as Mississippi relies on surface water theories to bolster its ownership claims.

1. Sovereign Ownership

In its filings, Mississippi has continually stated that it owns the groundwater within the state's borders. Starting with its Motion for Leave to File Bill of Complaint in 2014, Mississippi has claimed a sovereign interest to all natural resources, including groundwater, within its borders.[159] As Professors Hall and Regalia[160] and Professor Klein[161] note in their papers on the *Mississippi v. Tennessee* dispute, states do not "own" the natural resources within their states, including groundwater.

2. Surface and Groundwater Are Different

In its filings, Mississippi continually makes the claim that groundwater is different from surface water, and thus, should not be subject to equitable apportionment. In making these claims, the state relies on physical and geological characteristics of groundwater. However, the state does not assert that the law for surface water and groundwater has evolved separately, likely because Mississippi treats surface and groundwater similarly, regulating both through a permit system.

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157. Janasie, *supra* note 7.

158. *Id.*

159. State of Mississippi's Mot. for Leave to File Bill of Compl. in Original Action, Compl., and Br. in Supp. of Mot., *supra* note 104, at 3–5.

160. Noah D. Hall & Joseph Regalia, *Interstate Groundwater Revisited: Mississippi v. Tennessee*, 34 VA. ENVTL. L.J. 152, 203 (2016).

161. Christine A. Klein, *Owning Groundwater: The Example of Mississippi v. Tennessee*, 35 VA. ENVTL. L.J. 474 (2017).

IV. PUTTING IT ALL TOGETHER: RELYING ON SURFACE WATER DOCTRINES TO MAKE OWNERSHIP CLAIMS

Mississippi asserts its ownership claims based on multiple legal doctrines. First, the state relies on the United States Constitution, citing the Tenth Amendment for the proposition that it "is sovereign over all matters not ceded to the federal government."[162] Next, the state relies on the equal footing doctrine to make the claim that, when it became the twentieth state to the Union in 1817, it entered "on an equal footing with the original thirteen colonies and, thereupon, became vested with ownership, control, and dominion over the lands and waters within its territorial boundaries."[163] Finally, Mississippi relies on the public trust doctrine to assert ownership and control over the groundwater within the state, which it provides as the legal basis for the state's law asserting regulatory control over groundwater.[164]

There is a flaw in Mississippi citing the equal footing doctrine and the public trust doctrine, though, as both doctrines have traditionally been applied only to navigable waters and the submerged lands beneath those waters, not to groundwater. Further, while some states such as California and New Jersey have expanded the public trust doctrine beyond its historic scope, Mississippi does not assert that the state has done so and fails to argue why the doctrine should apply to the state's groundwater supply. Rather, it relies on inapplicable cases to make its claims.

A. What Are Navigable Waters?

Navigable waters could be one of the most confusing terms in legal scholarship. A basis for this confusion is that there are multiple tests for determining whether a water is navigable depending on the circumstances of each case, including tests for admiralty jurisdiction, federal regulatory authority, and to determine state title for purposes of the public trust and equal footing doctrines. For the purposes of Mississippi's case, we are focused on the last test, but it is helpful to note how the state title test differs from the other two.

For admiralty jurisdiction, the term navigable waters applies to both traditionally navigable waters, as well as waters that have been made navigable, such as artificial canals.[165] The test for federal regulatory authority has gotten the most attention in environmental law thanks to the Clean Water Act's definition of navigable waters: Waters of the United States.[166] For that

162. State of Mississippi's Post-Hearing Br. at 9, Mississippi v. Tennessee, No. 117-143 (U.S. Sept. 19, 2019).

163. *Id.*

164. State of Mississippi's Mot. for Leave to File Bill of Compl. in Original Action, Compl., and Br. in Supp. of Mot., *supra* note 104, at 3–5 (citing Miss. Code Ann. § 51-3-1).

165. PPL Montana, LLC v. Montana, 565 U.S. 576, 592 (2012) (citing *Ex parte* Boyer, 109 U.S. 629, 631–32 (1884)).

166. *See* Rapanos v. United States, 547 U.S. 715, 730 (2006) (plurality opinion).

test, the navigable waters must have a connection to interstate commerce, meaning that the term navigable waters can be applied to waters that are more than truly navigable.[167] Thus, wetlands connected to a navigable water can be covered by federal regulatory authority.[168]

However, the test for navigability for title is different, and implicates the public trust doctrine and the equal footing doctrine. To determine navigability for state title purposes, the body of water in question must have been navigable at the time of statehood, in its natural, ordinary condition.[169] For state title purposes, navigability is a matter of federal, and not state, law.[170] Further, the waterway must be navigable in fact, or in other words, truly navigable.[171]

What can be confusing is that all three of these tests have evolved from a test first articulated in an 1871 case known as *The Daniel Ball*.[172] The case concerned the authority of the federal government to regulate navigation on a river, and laid out a test for determining whether a water was navigable in fact, stating that:

> The test by which to determine the navigability of our rivers is found in their navigable capacity. Those rivers are public navigable rivers in law which are navigable in fact. . . . Rivers are navigable in fact when they are used, or are susceptible of being used, in their ordinary condition, as highways for commerce, over which trade and travel are or may be conducted in the customary modes of trade and travel on water.[173]

While *The Daniel Ball* involved federal authority to regulate navigation on a river, the test articulated in the case has been extended to other types of waterways[174] and to determine navigability for state title purposes.[175] Relying on *The Daniel Ball*, courts have found that, for purposes of the public trust and equal footing doctrines, the water in question must have been used, or was capable of being used, for commerce using customary modes of travel at the time of statehood.[176] Further, the waterway must be capable of commerce in its ordinary condition.[177]

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167. *PPL Montana*, 565 U.S. at 592–93.
168. *See Rapanos*, 547 U.S. at 730–31 (plurality opinion).
169. *PPL Montana*, 565 U.S. at 592.
170. *Id.* at 591.
171. *Id.* at 592.
172. The Daniel Ball, 77 U.S. 557 (1871).
173. *Id.* at 557.
174. *See* United States v. Oregon, 295 U.S. 1 (1935) (determining the navigability of lakes).
175. *See* United States v. Utah, 283 U.S. 64, 76 (1931).
176. *Id.*
177. *Id.*

Thus, the waterway does not have to be interstate in nature.[178] Nor must it have been a "highway for commerce" at that time of statehood.[179] Nor does it matter what type of vessel was used or could have been used for navigation or if that waterway at times could not support navigation. As the Court has stated:

> navigability does not depend on the particular mode in which such use is or may be had-whether by steamboats, sailing vessels or flatboats-nor on an absence of occasional difficulties in navigation, but on the fact, if it be a fact, that the stream in its *natural and ordinary condition* affords *a channel for useful commerce*.[180]

For instance, the Court has found that Great Salt Lake was property of the State of Utah under the equal footing doctrine, even though the lake is completely within the state's boundaries and had only been used by a handful of people, including ranch owners to move cattle by boat and a short-lived passenger ferry in the 1880s.[181] The Court made this finding, even though lake levels had dropped greatly by the time of statehood in 1896, because the lake was still able to support navigation at that time.[182]

B. The Public Trust and Equal Footing Doctrines

The public trust doctrine and the equal footing doctrine are intertwined. The public trust doctrine has a firm basis in Roman and English common law, and these legal regimes recognized water and its associated tidelands as an important common resource.[183] The courts in the United States decided to follow the English common law, establishing that states hold the title to the tidelands and submerged lands below navigable waters in trust for the benefit of the residents of the state.[184]

The seminal United States Supreme Court case on the public trust doctrine is *Illinois Central Railroad Co. v. Illinois*.[185] In the case, the Court outlined the contours of the public trust doctrine and differentiated it from other property interests, stating that "the state holds title to the lands under the navigable waters" of the state "in trust for the people of the state" for the

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178. Utah v. United States, 403 U.S. 9, 10 (1971).

179. *Id.*

180. United States v. Holt State Bank, 270 U.S. 49, 56 (1926) (emphasis added) (determining the navigability of Mud Lake in Minnesota for title purposes).

181. *See* Utah v. United States, 403 U.S. at 12.

182. *Id.* at 11–12.

183. Catherine Janasie, *Groundwater in California—Does the Public Trust Doctrine Apply?*, THE SANDBAR, Oct. 2018, at 14.

184. *Id.*; *see also* Phillip Petroleum Co. v. Mississippi, 484 U.S. 469, 482 (1988).

185. Janasie, *supra* note 183; *see also* Ill. Cent. R.R. Co. v. Illinois, 146 U.S. 387 (1892).

purposes of navigation, commerce, and fishing.[186] The Court also prohibited the transfer of trust property unless it benefits the trust, such as through building wharves and docks.[187]

Thus, all states must manage their public trust resources to these standards.[188] However, states can extend the public trust to more lands or more uses within their state.[189] In *PPL Montana, LLC v. Montana*, a case examining the contours of the equal footing doctrine, the Court noted in dicta the ability of states to define the terms of the public trust doctrine within the state, stating that "[s]tates retain residual power to determine the scope of the public trust over waters within their borders."[190] Thus, the public trust doctrine is a mix of federal and state law. At a minimum, states must ensure their trusts meet the standards of *Illinois Central*, while maintaining the ability to expand the terms of the trust beyond those minimum standards.

In fact, many state courts have noted that the trust is not static and should evolve to accommodate changing conditions and the public's needs. For instance, New Jersey has expanded its trust to allow recreation and other shore activities, and even allows its residents to access and use privately-owned, dry sand beaches as needed to access the ocean.[191] Similarly, in the famous "Mono Lake" case, the Supreme Court of California determined that the public trust required ecological effects to be considered when allocating water resources.[192] Further, the court ruled that the doctrine requires consideration of diversions from non-navigable tributaries if those diversions will affect public trust resources.[193]

Unlike the public trust doctrine, which can be viewed as a mix of federal and state law, the equal footing doctrine is solely based on federal law. The equal footing doctrine seeks to put subsequent states on "equal footing" with the original thirteen colonies who took title to the navigable waters and the related submerged in trust lands under the public trust doctrine.[194] The Supreme Court of the United States spoke on the equal footing doctrine in *Pollard v. Hagan*, noting that "[t]he shores of navigable waters, and the soils under them, were not granted by the Constitution to the United States, but were reserved to the states respectively . . . the new states have the same rights, sovereignty, and jurisdiction over this subject as the original states."[195]

The navigable waters covered by the equal footing doctrine, as discussed above, are determined by the state title test developed under *The*

186. Janasie, *supra* note 183; *see also Ill. Cent. R.R.*, 146 U.S. at 452.
187. Janasie, *supra* note 183.
188. *Id.*
189. *Id.*
190. PPL Montana, LLC v. Montana, 565 U.S. 576, 603–04 (2012).
191. Matthews v. Bay Head Improvement Ass'n, 471 A.2d 355 (N.J. 1984).
192. Janasie, *supra* note 183.
193. *Id.*; *see also* Nat'l Audubon Soc'y v. Superior Court, 658 P.2d 709 (Cal. 1983).
194. Utah Div. of State Lands v. United States, 482 U.S. 193, 196 (1987).
195. Pollard v. Hagan, 44 U.S. 212, 230 (1845).

Daniel Ball.[196] Notably, the test looks at whether the water in question was used or capable of being used for commerce using customary modes of travel at the time of statehood.[197]

Finally, it should be noted that the public trust and equal footing doctrines encompass waters subject to the tides, as was decided by the Court in *Phillips Petroleum*, discussed more fully below. As will also be more fully discussed below, while there have been attempts to expand the equal footing doctrine beyond navigable waters and the submerged lands below them, these attempts have failed.

C. Equal Footing Doctrine Has Not Been Extended Beyond Navigable Waters and Submerged Lands

While there have been attempts to apply the equal footing doctrine to more than just navigable waters and submerged lands, the courts have refused to make this extension. In *Scott v. Lattig*, the Court refused to apply the equal footing doctrine to an island in the middle of the Snake River, and stated that, upon entering the Union, each new state "becomes endowed with the same rights and powers . . . as the older" states by the fact "that lands underlying navigable waters within the several states belong to the respective state in virtue of their sovereignty."[198] Therefore, the ownership of an island that was dry land when Idaho became a state did not pass to the state upon statehood, as it "was not part of the bed of the stream or land under the water."[199]

The Court made a similar ruling in 1973 in *Louisiana v. Texas* in stating that "[i]t is the unquestioned rule that States entering the Union acquire title to the lands under navigable streams and other navigable waters within their borders."[200] Further, "the rule does not reach islands or fast lands located within such waters."[201] Thus, it would be a change of course for the Court to suddenly find that the equal footing doctrine applies to groundwater after stating unequivocally that the doctrine is limited to navigable waters and the related submerged lands.

However, the Special Master in this case has noted "[t]hat no previous case has recognized an equal-footing claim in the context of a dispute over the depletion of interstate water, does not, in itself, mean that such a claim is necessarily invalid."[202] That said, in early opinions in this case, the Special Master has found fault with Mississippi's equal footing

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196. *See* The Daniel Ball, 77 U.S. 557, 557 (1871).
197. *Id.*
198. Scott v. Lattig, 227 U.S. 229, 242–43 (1913).
199. *Id.*
200. Texas v. Louisiana, 410 U.S. 702, 713 (1973).
201. *Id.*
202. Mem. of Decision on Tennessee's Mot. to Dismiss, Memphis and Memphis Light, Gas & Water Division's Mot. to Dismiss, and Mississippi's Mot. to Exclude, *supra* note 156, at 24.

doctrine claim. In his opinion rejecting Tennessee's motion for summary judgment, the Special Master noted Mississippi's equal footing argument "sailed wide of its target."[203] In an earlier 2016 opinion on Tennessee's motion to dismiss, the Special Master wrote that "Mississippi's discussion of equal footing does not appear to show that the doctrine applies to disputes concerning a State's pumping from an interstate resource."[204]

There is fault though in the Special Master's analysis, as it focuses on the interstate nature of the aquifer. In this way, the Special Master's statements miss the point. As stated above, the equal footing doctrine does not apply to groundwater. It does not even apply to all surface water within a state. The doctrine only applies to navigable waters that were navigable at the time of statehood, and the submerged lands under them. Based on these contours of the equal footing doctrine, the Special Master could have wholeheartedly rejected Mississippi's claims.

D. The Public Trust Doctrine: Does It Apply to Groundwater?

The application of the public trust doctrine to groundwater is not settled law. In fact, in making its public trust arguments, Mississippi relies on a string of cases that deal with surface water. While Mississippi is correct in noting that state law controls the "ownership and allocation of the use of natural resources located within its borders," it has no case to rely upon to show that the public trust doctrine has been extended to groundwater in Mississippi.[205]

In its briefs, Mississippi asserts that a Mississippi case determining the scope of the state's public trust, which was affirmed by the Supreme Court of the United States in *Phillips Petroleum Co. v. Mississippi*, grants the state "ownership and plenary authority over its water resources."[206] Mississippi also contends that the *Cinque Bambini* case recognized that "once Mississippi had been admitted to the Union and the public trust had been created and funded, the role of the equal footing doctrine ended and the title to and plenary authority over the lands and resources conveyed in the trust became vested in the state."[207]

There are two problems with Mississippi's arguments. The first is that *Cinque Bambini* had nothing to do with groundwater, so much so that the term "groundwater" is not mentioned once in the opinion. Second, Mississippi is relying on a state's ability to define the boundaries of the public trust doctrine within its borders. The problem is, however, that the state's

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203. Mem. of Decision on Def.'s Mot. for Summ. J., at 21, Memphis v. Tennessee, No. 143 (U.S. Nov. 29, 2018).

204. Mem. of Decision on Tennessee's Mot. to Dismiss, Memphis and Memphis Light, Gas, & Water, Division's Mot. to Dismiss, and Mississippi's Mot. to Exclude, *supra* note 156, at 21.

205. State of Mississippi's Post-Hearing Br., *supra* note 162, at 10.

206. *Id.* at 9.

207. *Id.* at 10.

Supreme Court has not found the public trust includes groundwater, even when it has had the chance.

1. Reliance on Surface Water Cases

The subject matter of the *Cinque Bambini* case was whether the navigable waters test under the equal footing doctrine replaced the traditional test under English common law that the public trust included waters subject to tidal influence.[208] In accordance with other cases on the matter, the court noted that "the question of what lands were given to the State in trust is necessarily a question of federal law."[209]

The court started its analysis by stating that "the identity of properties granted by the United States in trust became fixed at the time of statehood."[210] In deciding whether the trust included non-navigable waters subject to tidal influences, the court noted that, traditionally, "tidewaters" were the subject of the public trust, and that the public trust had evolved in the United States to include non-tidal freshwaters in non-coastal, inland states.[211] In determining whether the navigable waters test meant that tidally-influenced, non-navigable waters were not included in the trust, the court found that the public trust doctrine included both waters that meet the navigable waters tests, as well non-navigable, tidally-influenced waters.[212]

In its post-hearing brief, Mississippi relies on a quote from this part of the *Cinque Bambini* opinion, claiming, "[t]he Mississippi Supreme Court affirmed the State's ownership and plenary authority over its water resources, including subterranean resources."[213] In reality, the opinion makes reference to "subsurface" resources only once, and was referencing the right of the state to resources found below tidal watercourses. The full quote states:

> In summary, effective upon statehood on March 1, 1817, we understand federal law to provide that the United States granted to the State of Mississippi in trust all lands, to which the United States then held title, *including their mineral and other subsurface resources, subject to the ebb and flow of the tide* below the then *mean* high water level—regardless of whether the water courses were commercially navigable at the time of Mississippi's admission into the Union, regardless of how insignificant the tidal influence, or how shallow the water, regardless of how far inland and remote

208. Cinque Bambini P'ship v. State, 491 So. 2d 508, 513–14 (Miss. 1986).
209. *Id.* at 513.
210. *Id.*
211. *Id.* at 514.
212. *Id.* at 516.
213. State of Mississippi's Post-Hearing Br., *supra* note 159, at 9 (citing *Cinque Bambini*, 491 So. 2d at 511–14, 516–17, 519–20 (1986), *aff'd in* Phillips Petroleum Co. v. Mississippi, 484 U.S. 469 (1988)).

> from the sea. Similarly granted were the beds and streams of all non-tidal waters which were navigable in fact in 1817. This act of creation consummated, the federal sovereign rested.[214]

Given that the case was brought to determine the oil and gas rights underneath non-navigable tidal waters, it is hard to read this quotation as applying to more than the natural resources underneath tidal waters. At most, it can be read to include groundwater underneath tidal waters. It is too far to read this quote as applying to all groundwater within the state of Mississippi.

Likewise, the Supreme Court of the United States case upholding *Cinque Bambini* also does not speak to groundwater. In *Phillips Petroleum Co. v. Mississippi*, the Court found that the public trust doctrine does include waters and submerged lands influenced by the tides.[215] Like *Cinque Bambini*, the Court does not discuss groundwater. Rather, the Court is solely focused on tidally-influenced waters. The Court simply holds "that the States, upon entering the Union, were given ownership over all lands beneath waters subject to the tide's influence."[216] Thus, the Court did not affirm Mississippi's claims in its briefs that the state has ownership and authority over all of the waters within the state, including subterranean waters.[217]

Other cases cited by Mississippi also do not support its argument, as each case cited involves surface water. For instance, the state cites cases related to the navigable Willamette River in Oregon,[218] riverbeds in Montana,[219] and the Red River in Oklahoma.[220] The state also cites to *Rapanos v. United States*, a famous Clear Water Act case applying the *federal regulatory test* for navigable waters discussed above, for the proposition that "states control of water within its borders is 'quintessential' exercise of state power."[221] Again, all of these cases apply to surface water, and *Rapanos* does not even address the correct navigable waters test.

Likewise, Mississippi quotes a case dealing with Alaskan submerged lands on the state's arctic coast in relation to the federal Submerged Lands Act.[222] Mississippi states that its "authority under the Constitution to preserve, control, and protect groundwater located within its borders is an '*essential attribute of sovereignty*.'"[223] In fact, the full quotation from *United*

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214. *Cinque Bambini*, 491 So. 2d at 516–17.

215. *Phillips Petroleum*, 484 U.S. at 482.

216. *Id.* at 484.

217. *See* State of Mississippi's Post-Hearing Br., *supra* note 162, at 9.

218. Oregon *ex rel.* State Land Bd. v. Corvalis Sand & Gravel Co., 429 U.S. 363 (1977).

219. PPL Montana, LLC v. Montana, 565 U.S. 576, 576 (2012).

220. Tarrant Reg'l Water Dist. v. Herrman, 569 U.S. 614 (2013).

221. State of Mississippi's Post-Hearing Br., *supra* note 162, at 10 (citing Rapanos v. United States, 547 U.S. 715, 738 (2006)).

222. United States v. Alaska, 521 U.S. 1 (1997).

223. State of Mississippi's Post-Hearing Br., *supra* note 162, at 10 (citing *Alaska*, 521 U.S. at 5 (emphasis added)).

States v. Alaska shows that the Court was speaking to the public trust doctrine in relation to submerged lands under navigable waters. In talking about an "essential attribute of sovereignty," the Court stated, "[o]wnership of submerged lands—which carries with it the power to control navigation, fishing, and other public uses of water—is an *essential attribute of sovereignty*."[224]

Thus, while trying to make the argument that groundwater should be treated differently, Mississippi is relying on the public trust doctrine which traditionally is a surface water concept. In fact, neither the equal footing nor public trust doctrines cover all surface waters, as the waterways in question must meet the navigability for state title test or be subject to the ebb and flow of the tides.

2. The State's Ability to Define the Public Trust Doctrine

Mississippi's second argument related to the public trust doctrine relies on the premise that states have the ability to expand the contours of the public trust within their borders. Again, Mississippi also relies on *Cinque Bambini*, particularly for the court's statement that states have plenary authority over trust property—"once the trust was funded, so to speak, the federal role was spent."[225] As stated above, the Supreme Court of the United States made a similar statement in 2012, when in *PPL Montana, LLC*, the Court stated in dicta that the public trust doctrine is a matter of state law, as "[S]tates retain residual power to determine the scope of the public trust over waters within their borders, while federal law determines riverbed title under the equal-footing doctrine."[226]

Mississippi is correct to claim that states have the power to extend the parameters of the basic public trust outlined in *Illinois Central Railroad Company*. Besides relying on *Cinque Bambini* and *Phillips Petroleum*, Mississippi claims that its own water resources law declares that groundwater falls within the public trust. Thus, "[p]ursuant to its public trust duties, Mississippi has promulgated statutes and administrative regulations controlling the withdrawal and use of Mississippi groundwater . . . and actively regulates groundwater withdrawals."[227]

In *Cinque Bambini*, the Mississippi Supreme Court reviewed the extent of the public trust doctrine in the state.[228] The court cited cases declaring that trust purposes in the state included: navigation and transportation; fishing; "bathing, swimming, and other recreational

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224. *United States v. Alaska*, 521 U.S. at 5 (emphasis added).
225. Cinque Bambini P'ship v. State, 491 So. 2d 508, 513 (Miss. 1986).
226. PPL Montana, LLC v. Montana, 565 U.S. 576, 603–04 (2012).
227. State of Mississippi's Post-Hearing Br., *supra* note 162, at 11.
228. *Cinque Bambini*, 491 So. 2d at 511.

activities"; mineral resource development; and "environmental protection and preservation."[229]

Notably, this declaration of trust purposes occurred after Mississippi passed its water resources law in 1985. The court notes that mineral development is included, but groundwater is not mentioned.[230] Furthermore, the court was not only relying on case law to make this list. In stating that Mississippi's public trust extended to "environmental protection and preservation," the court cited Mississippi Code Annotated sections 49-27-3 and 49-27-5, which speak to the preservation of coastal wetlands within the state.[231] Thus, it could be inferred that the court did look to statutory law to determine the scope of the public trust, and thus, could have included the groundwater management provisions if it thought the provisions fit within the trust.

Further, subsequent decisions in the state have not identified groundwater as a public trust resource. For instance, in 2016, the Mississippi Supreme Court stated that, upon statehood, the state took "title to the tidelands and navigable waters which had been held by the United States prior to statehood was conveyed to Mississippi in trust and became immediately vested, subject to the trust."[232]

That said, although there is no evidence of the Mississippi Supreme Court recognizing groundwater as a public trust resource after the 1985 water resources act was passed, other states have attempted to claim the public trust doctrine extends to groundwater. These cases have had mixed success.

In 2000, the Hawaii Supreme Court determined that the public trust doctrine applied to all water resources within the state.[233] The case involved a dispute regarding the water distributed by the Waiahole Ditch System, a major irrigation infrastructure on O'ahu.[234] The court established the validity of the public trust doctrine by holding that article XI, section 1 and article XI, section 7 of the Hawaii Constitution adopted the public trust doctrine as a fundamental principle of constitutional law in Hawaii.[235] In its ruling, the court declined to carve out a groundwater exception to the trust.[236] Thus, the Court held that public trust doctrine applied to all water resources, unlimited by any surface-ground distinction.[237]

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229. *Id.* at 512.

230. *Id.*

231. *Id.*

232. State v. Murphy, 202 So. 3d 1243, 1252 (Miss. 2016) (quoting Sec'y of State v. Wiesenberg, 633 So. 2d 983, 987 (Miss. 1994)).

233. *In re* Water Use Permit Applications, 9 P.3d 409, 445 (Haw. 2000).

234. *Id.* at 422.

235. *Id.* at 443–44.

236. *Id.* at 447.

237. *Id.*

In 2018, the California Court of Appeals for the Third District found that groundwater could be part of the public trust in certain circumstances.[238] In this case, the Environmental Law Foundation ("ELF") asked the court to rule on whether the County of Siskiyou ("County") and the State Water Resources Control Board ("Board") have a public trust duty under California's common law to consider any potential negative impacts of groundwater well permits on the navigable Scott River.[239] Thus, ELF was not claiming at this time that the County and Board had violated any duty under the public trust doctrine.[240] Rather, it was simply seeking to establish that a public trust duty applied when groundwater extractions were negatively affecting a navigable waterway.[241]

In its ruling, the court relied heavily on the Mono Lake case mentioned above. The decision in the Mono Lake case involved California's well-established water rights system, which had been codified in the 1913 Water Commission Act.[242] The water right in question was a water diversion from non-navigable tributaries not covered by the public trust doctrine that would provide water to the City of Los Angeles.[243] However, the diversion caused the water level in Mono Lake to drop, harming its scenic and ecological attributes.[244] Noting that both the integrity of the lake and Los Angeles's need for water were important and valuable, the court ruled that the public trust must be considered, even if the diversions were from non-trust waters, due to the effect of the diversions on navigable, public trust waters.[245]

Based on the Mono Lake decision, the court found fault with the County's argument that the public trust doctrine does not cover groundwater.[246] The court noted that the public trust doctrine does not apply to all groundwater, but when a diversion is from a non-navigable water source and affects a navigable waterway, the public trust is implicated.[247] Thus, "the determinative fact is the impact of the activity on the public trust resource" and "whether the challenged activity allegedly harms a navigable waterway."[248]

Finally, earlier this year, a Minnesota court found that the public trust doctrine did not apply to groundwater.[249] In the case, White Bear Lake

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238. Envtl. Law Found. v. State Water Res. Control Bd., 237 Cal. Rptr. 3d 393, 402 (Ct. App. 2018).

239. *Id.* at 396.

240. *Id.* at 395–96.

241. *Id.* at 396.

242. *Id.* at 401.

243. *Id.*

244. *Id.*

245. Nat'l Audubon Soc'y v. Superior Court, 658 P.2d 709, 711 (Cal. 1983).

246. *Id.*

247. *Id.* at 712.

248. *Envtl. Law Found.*, 237 Cal. Rptr. 3d at 402–03.

249. White Bear Lake Restoration Ass'n v. Minn. Dep't of Nat. Res., 928 N.W.2d 351, 367 (Minn. Ct. App. 2019).

Restoration Association brought an action against the Minnesota Department of Natural Resources (DNR), alleging that groundwater-appropriation permits issued by DNR caused the lake's water levels to drop in violation of the Minnesota Environmental Rights Act (MERA).[250] White Bear Homeowners Association (WBHA) intervened as plaintiff, additionally claiming a violation of the common law public trust doctrine.[251] WBHA alleged that the increased groundwater appropriations materially and adversely affected the environment, specifically the lake and aquifer.[252] Following a bench trial, the trial court entered judgment in favor of the plaintiffs holding that DNR violated MERA, state water law, and the public trust doctrine. [253]

On appeal, the Minnesota Court of Appeals held that the exclusive vehicle for a MERA challenge to groundwater-appropriation permits was in the provision governing actions against the state.[254] Furthermore, the court determined, as a matter of first impression, that the public trust doctrine did not apply to the groundwater near the lake.[255] The Court stated that any expansion of the public trust doctrine to encompass groundwater as "navigable waters" was beyond their authority as an error-correcting court.[256] Additionally, the Court indicated that "the lake and the aquifer are hydrologically connected. That is why MERA applies to the groundwater. But that does not make groundwater 'navigable.'"[257] Therefore, the Minnesota Court of Appeals reversed and remanded.[258]

Therefore, it would be within the Supreme Court of Mississippi's power to rule on whether the state's public trust included groundwater. The problem for Mississippi is that it just has not done so.

V. WHY NOT EQUITABLE APPORTIONMENT?

Given the flaws in Mississippi's arguments, one might wonder why the state is not seeking an equitable apportionment. In its previous case, Mississippi asked for monetary damages, but if not, equitable apportionment. However, it decided not to ask for equitable apportionment in the alternative in this case, leaving some to wonder why.

In fact, in its initial decisions in this case, the Special Master has hinted at the potential folly in Mississippi foregoing an equitable apportionment. In its 2016 opinion on Tennessee's motion to dismiss, the Special Master stated:

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250. *Id.* at 356.
251. *Id.*
252. *Id.* at 356–57.
253. *Id.* at 357–58.
254. *Id.* at 352.
255. *Id.*
256. *Id.* at 364–67.
257. *Id.* at 367.
258. *Id.*

> Because, under federal common law, equitable apportionment is necessary to grant relief in a dispute over interstate water in the absence of an interstate compact – and Mississippi has made it explicit that it does not seek an equitable apportionment of the Aquifer – dismissal would likely be warranted under Rule 12.[259]

Likewise, in its 2018 opinion on Tennessee's motion for summary judgment, the Special Master stated:

> Understandably, Mississippi wants MLGW to stop pumping. Mississippi has spent years making a long and arduous journey, navigating federal courts, all in an attempt to protect what it believes it rightfully owns. Now, Mississippi has come ashore in this Supreme Court Original Action. But by rejecting equitable apportionment, Mississippi might have abandoned the only mechanism for relief. Mississippi may have burned its boats.[260]

Given the weaknesses with Mississippi's claims, why then did the state choose to forego equitable apportionment? First, it may simply be that Mississippi wants monetary damages instead of the equitable remedy it would receive by the Court apportioning water in the aquifer. Further, some clues could have been given by the Court in its previous denial of Mississippi's motion for leave to file a bill of complaint after the Fifth Circuit's decision in its case against Memphis. In that denial, the Court cited two cases.[261] The first citation was to note 9 in *Virginia v. Maryland*, which states that "Federal common law governs interstate bodies of water, ensuring that the water is equitably apportioned between the States and that neither State harms the other's interest in the river."[262]

The Court also cited note 13 of *Colorado v. New Mexico*, which states, "[o]ur cases establish that a state seeking to prevent or enjoin a diversion by another state bears the burden of proving that the diversion will cause it 'real or substantial injury or damage.'"[263]

The reference to "real or substantial injury or damage" may be what spooked Mississippi. As noted in the United States' brief, the Court has required the complaining state in equitable apportionment cases to "make concrete allegations about adverse impacts to its present or certain future uses

259. Mem. of Decision on Tennessee's Mot. to Dismiss, Memphis and Memphis Light, Gas, & Water, Division's Mot. to Dismiss, and Mississippi's Mot. to Exclude, *supra* note 156, at 1.

260. Mem. of Decision on Def.'s Mot. for Summ. J., *supra* note 203, at 26–27.

261. Mississippi v. City of Memphis, 559 U.S. 901 (2010).

262. Virginia v. Maryland, 540 U.S. 56, 74 n.9 (2003).

263. Colorado v. New Mexico, 459 U.S. 176, 187 n.13 (1982).

of the disputed water."[264] Mississippi would likely have trouble proving harm under traditional water law, as well as under the standards the Court has developed for equitable apportionment.

Water law has traditionally not been forward-looking, a large flaw in the system that currently regulates water use in the United States. Courts have traditionally not been concerned with future problems, choosing rather to focus on the here and now. As Tennessee points out in its post-hearing brief, Mississippi provides no detail as to how the pumping in Memphis has interfered with the state's current use of water beside vague claims about the cone of depression and the need to drill deeper wells.[265]

Under equitable apportionment, the Court has required complaining states to show a substantial injury, and the burden to show this is higher than a private party would have to show in a regular litigation due to the fact that the lawsuit involves two quasi-sovereigns.[266] Thus, the complaining state must show by clear and convincing evidence that it is threatened with a serious invasion of its rights.[267]

While it is true that water is leaving the state of Mississippi, it is not clear from the state's pleadings that it has sustained a substantial enough interference with its own use of the aquifer to satisfy the standard of equitable apportionment. Neither does it seem to meet the burden of recent water law cases based on the theory of conversion. For instance, in 2015 the Southern District of Ohio stated that "the standard for conversion of groundwater is that Plaintiff must show that Defendant's actions . . . interferes with Plaintiff's reasonable use of the groundwater beneath its property. This standard is different than the standard in trespass, which considers interference with the entire property, including the subsurface."[268]

Further, Mississippi's own management of water resources may hinder the state in the Court's review. While the state was progressive in adopting a permit system for groundwater use in the state, it is rumored that the state has never denied a groundwater use permit.[269] Likewise, although groundwater permits limit the amount of water that can be used, the state does not require permit holders to monitor how much water they are using.[270] Only recently, when faced with severely low water levels in the Mississippi

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264. Br. for the United States as Amicus Curiae at 21, Mississippi v. Tennessee, No. 09-143 (U.S. May 12, 2015).

265. Post Hearing Br. of the State of Tennessee at 31–32, Mississippi v. Tennessee, No. 114-143 (U.S Sept 19, 2019).

266. Florida v. Georgia, 138 S. Ct. 2502, 2514 (2018).

267. *Colorado v. New Mexico*, 459 U.S. at 187 n.13; New York v. New Jersey, 256 U.S. 296, 309 (1921).

268. Little Hocking Water Ass'n v. E.I. du Pont Nemours and Co., 91 F. Supp. 3d 940, 983 (S.D. Ohio 2015).

269. Within the author's personal knowledge based on personal conversations at Mississippi Water Security Institute meetings.

270. *See generally Delta Voluntary Metering Program*, MISS. DEP'T OF ENVTL. QUALITY, https://www.mdeq.ms.gov/water/water-availability-and-use/delta-voluntary-metering-program/ [https://perma.cc/H9C2-26ZW].

Alluvial Aquifer, has the state asked 10% of permit holders in the Mississippi Delta to monitor their use. All of these reasons may have prompted Mississippi to pursue a property-based claim rather than seek equitable apportionment.[271]

CONCLUSION

In conclusion, Mississippi has taken a risk in foregoing an equitable apportionment in lieu of its sovereign ownership claims. As stated above, this decision could have been strategic, as Mississippi would have a hard time proving injury and would not be able to seek monetary damages with an equitable apportionment claim. However, its case has some serious flaws, not the least of which is the state's management of its own water resources. The state seriously underutilizes the strength of its own permit system by not denying any applications for permits and by not requiring water users to monitor their water use. Both of these decisions by the state leave its groundwater resources susceptible to unsustainable use.

Mississippi's case also relies incorrectly on two surface water doctrines to make the claim that it owns all the groundwater within the state: the equal footing doctrine and the public trust doctrine. First, the equal footing doctrine has not been extended to groundwater. Rather, it only applies to navigable waters and the submerged lands below them. In comparison, the public trust doctrine can be expanded to cover groundwater. However, while the state claims ownership of groundwater based on its water withdrawal permit law, Mississippi courts have not recognized that the public trust has been expanded to groundwater in the state, even in cases decided after the water withdrawal law was passed.

Finally, though not discussed previously in this paper, one needs to note that there are strong policy reasons to deny Mississippi's assertions that monetary damages are due. What would the evidentiary burden be in these cases, especially if more than two states were involved or if the complaining state's own pumping were affecting the flow of water? Would states be able to afford to pay these damages, and would this promote the best and most efficient use of water? For these reasons, as well as the ones discussed above, Mississippi's lawsuit against Tennessee is seriously flawed.

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271. Br. for the United States as Amicus Curiae, *supra* note 261, at 2.