No. 143, Original

IN THE
Supreme Court of the United States

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STATE OF MISSISSIPPI,

*Plaintiff,*

v.

STATE OF TENNESSEE, CITY OF MEMPHIS, TENNESSEE, AND MEMPHIS LIGHT, GAS & WATER DIVISION,

*Defendants*.

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On Bill of Complaint
Before the Special Master, Hon. Eugene E. Siler, Jr.

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# STATE OF MISSISSIPPI'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

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The State of Mississippi hereby submits the following Findings of Fact and Conclusions of Law concerning the Court's evidentiary hearing in this matter.

## I. FINDINGS OF FACT

1. Groundwater is found beneath the earth in locally diverse geologic settings which affect groundwater availability, quality and cost of production. J-2, pages 8-19 of 86.

2. Groundwater located in Northwest Mississippi is found in tiny pore spaces or fractures that exist in and around naturally occurring materials. Tr. 47-49; J-40, page 90 of 91.

3. The naturally occurring materials constituting the northwest Mississippi subsurface are extremely small grains of unconsolidated materials, including varying compositions of clay, silt, sand, and, in some locations, gravel. Tr. 49-52.

4. Surface water occurs in readily discernible drainage basins. The boundaries are topographic and may be easily delineated on a topographic map. The water conveniently flows in the direction in which the land surface is sloping. Moreover, surface water does not cross topographic divides (except, perhaps, during floods) and the locations of the drainage divides are fixed. J-27 at 441-442.

5. Groundwater occurs in aquifers that are hidden from view. The boundaries of an aquifer are physical: it can crop out, abut an impermeable rock unit,

grade into a lower permeability deposit, or thin and disappear. At a given location, the land surface may be underlain by several aquifers. Each aquifer may have different chemical makeup and different hydraulic potential; each may be recharged in a different location and flow in a different direction. Moreover, groundwater divides do not necessarily coincide with surface-water divides. J-27 at 441-442.

6. Groundwater does not "flow" like a "body of water" in an interstate river, which may move downstream at velocities measured in feet per second roughly equating 16 miles a day. Tr. 386; J-2, page 15 of 86.

7. Groundwater creeps through cracks or between and around the rocks and soils of the earth moving at typical rates measured in meters a year. J-40, page 10 of 90.

8. Groundwater can remain in the earth for periods of times ranging from days to tens of thousands of years depending on the specific geology and location in the three-dimensional subsurface environment. J-40, page 19 of 91; J-29, page 23 of 624; J-2, page 16 of 86.

9. Groundwater in a confined aquifer moves extremely slowly. Tr. 77, 405.

10. The term *aquifer* is subject to different meanings. It is used to refer to individual geologic layers, to complete geologic formations, and even to groups of

geologic formations. The term must always be viewed in terms of the scale and context of usage. J-29, Page 65 of 624.

11. The word "aquifer" can mean "a formation, a group of formations or part of a formation that contains sufficient saturated, permeable material to yield usable quantities of water to wells and springs." S17.

12. The phrase "interstate aquifer" has never been defined in the scientific literature. Tr. 902.

13. The water at issue in this case is groundwater located in northwest Mississippi, hundreds of feet below the surface in pore spaces or fractures that exist between and around naturally occurring materials. Tr. 47-49; J-40, page 90 of 91.

14. The water at issue is found as very small amounts of water located in the tiny pore spaces that exist between and around tiny grains of sand and other unconsolidated materials in the subsurface of northwest Mississippi. Tr. 52, 386; J-40, page 33 of 91.

15. Most of the water at issue is located in a geologic formation identified by geologists as the "Sparta Sand," while some water (at or just south of the Mississippi-Tennessee border) may be located in a geologic formation identified by geologists as the "Memphis Sand." Tr. 81, 94, 244.

16. The Sparta Sand and Memphis Sand formations are comprised predominantly of sand of varying grain sizes and irregular shapes, interspersed with varying compositions of clay and silt. Tr. 50, 52.

17. A confined aquifer or confined area of an aquifer is an aquifer or area of an aquifer that has an overlying confining layer and in which the pressure in the aquifer is high enough that the potentiometric head in the aquifer rises above the bottom of that confining layer. S19.

18. Groundwater in a confined aquifer moves extremely slowly. Tr. 77, 405.

19. Under natural conditions, groundwater in northwest Mississippi generally, moves between and around grains of material at an average rate of one or two inches per day. Tr. 121-22, 405.

20. The groundwater at issue is an essentially constant volume of groundwater located in Mississippi under natural conditions before pumping, and natural recharge in Mississippi that has been diverted out of Mississippi by MLGW pumping. J-40, page 33, 40 of 91; Tr. 149-150; J-58, pages 34-35 of 58; J-58, pages 34-35 of 58; Brahana Dep. 136-137.

21. At one inch a day, a molecule of the water at issue moves only thirty feet in a year, or one mile in 175 years. Tr. 121, 458.

22. The groundwater at issue has been located in Mississippi (or the territory that became Mississippi) for hundreds and thousands of years. Tr. 450.

23. Some groundwater in Mississippi will "eventually" move/creep from Mississippi into Tennessee under natural conditions. Tr. 304.

24. "Clay" refers to any naturally occurring material that is less than 1/256$^{th}$ of a millimeter in "grain size." Tr. 49-51.

25. "Silt" refers to material that is between 1/256$^{th}$ of a millimeter and 1/16$^{th}$ of a millimeter. Tr. 49-51.

26. "Sand" refers to any material that is between 1/16$^{th}$ of a millimeter and 2 millimeters. Tr. 49-51.

27. "Gravel" refers to material larger than 2 millimeters. Tr. 49-51.

28. These terms—clay, silt, sand, and gravel—are used exclusively by geologists to indicate that the particles are not stuck together, i.e., they are *unconsolidated* materials. Tr. 51.

29. Groundwater is not an underground lake or underground stream flowing in a defined channel. Tr. 386; P-73.

30. MLGW sells water, gas, and electricity to customers in the Memphis area. S10.

31. All of the water MLGW sells to its customers is groundwater pumped by MLGW from the Memphis Sand, utilizing large commercial turbine pumps. Tr. 73, 189; P-51, pages 5, 13 of 140; P-52; P-94.

32. MLGW's system consists of more than 160 wells in 10 well fields: Allen, Davis, Lichterman, LNG, Mallory, McCord, Morton, Palmer, Shaw, and Sheahan. S11; S13.

33. MLGW has produced 2.446 *trillion* gallons of groundwater from these fields from 1965-2016. S*ee* P-157, page 2 of 2; J-60, page 28 of 40.

34. Memphis could obtain water from the Mississippi River. J-60, pages 32-33 of 40.

35. Memphis could obtain groundwater from areas in Tennessee to the north of Memphis without taking groundwater from Mississippi. *See* J-63, page 6 of 36.

36. The southern boundary of Shelby County is located on the Tennessee-Mississippi border and adjoins the northern boundary of Desoto County, Mississippi, and the northwestern boundary of Marshall County, Mississippi. S12.

37. MLGW's Palmer wells are approximately three-quarters (3/4ths) of a mile from the Mississippi border. Tr. 19; S14. *See also* J-49, page 5 of 27, figure 1 (well field locations); P-54-57.

38. MLGW's Davis wells are approximately two miles from the border. Tr. 19; S14. *See also* J-49, page 5 of 27, figure 1 (well field locations); P-54-57.

39. MLGW's Lichterman wells are approximately two to four miles from the border. Tr. 19; S14. *See also* J-49, page 5 of 27, figure 1 (well field locations); P-54-57.

40. The Lichterman field began operations in 1965; the Davis field in 1970; and the Palmer field in 1973. P-157, page 2 of 2.

41. MLGW placed the Lichterman, Davis, and Palmer wells next to the Mississippi border with knowledge that those wells would capture and produce substantial volumes of Mississippi groundwater, as shown by J-22, J-58, and J-59.

42. The removal of groundwater through pumping establishes hydraulic gradients that induce the flow of water into the well from areas surrounding the well, reducing water levels and creating a "cone of depression." J-40, page 33 of 91; Tr. 149-150.

43. Pumping pulls groundwater within the area of the cone of depression into the well. Brahana Dep. at 43; Tr. 149-150, 205, 208-209.

44. Exhibit J-22, entitled *Hydrology of Aquifer Systems in the Memphis Area, Tennessee*, USGS Water-Supply Paper 1779-O, was prepared in cooperation with the City of Memphis and MLGW. J-22, page 1 of 69.

45. Exhibit J-22, entitled *Hydrology of Aquifer Systems in the Memphis Area, Tennessee*, USGS Water-Supply Paper 1779-O, was prepared in 1964 but was based on pumping data for 1960, prior to MLGW's installation and operation of the Lichterman, Davis, and Palmer well fields.

46. Exhibit J-22, entitled *Hydrology of Aquifer Systems in the Memphis Area, Tennessee*, USGS Water-Supply Paper 1779-O, concluded that the heavy pumping of groundwater in Shelby County, including by MLGW, from the "500-foot sand" (a/k/a the Memphis Sand) had created large (aerially) and very steep/deep cones of depression that extended into adjoining states, including Mississippi, and that this heavy pumping by MLGW and others was inducing the flow of water from Mississippi into the Memphis area, where the water from Mississippi was captured and produced by MLGW and others. J-22, page 9 of 69.

47. Exhibit J-58, entitled *Geology and Hydrology of the Claiborne Group in Western Tennessee,* USGS Water-Supply Paper 1809-F, is a 1965 USGS report prepared in cooperation with the Tennessee Department of Conservation. J-58, page 1 of 58.

48. Exhibit J-58, entitled *Geology and Hydrology of the Claiborne Group in Western Tennessee,* USGS Water-Supply Paper 1809-F, a 1965 USGS report concluded that: "Under conditions of heavy pumping in Memphis, 25 mgd [million

gallons per day] has been diverted into Shelby County as underflow through the "500-foot" sand from Mississippi. . . ." J-58, pages 34-35 of 58.

49. Of the 135 mgd pumped in 1960 from the 500-foot sand in Shelby County, MLGW accounted for 58.54 mgd. J-58, page 42 of 58.

50. Since 2000, Memphis has taken 20 to 40 million gallons of groundwater per day from Mississippi. P-68.

51. In Exhibit J-58, entitled *Geology and Hydrology of the Claiborne Group in Western Tennessee,* USGS Water-Supply Paper 1809-F, the USGS concluded that future increases in pumping in the Memphis area would increase the amount of water being captured from Mississippi. J-58, pages 46-47 and 49 of 58.

52. Exhibit J-59, *Predicted Hydrologic Effects of Pumping from the Lichterman Well Field in the Memphis Area, Tennessee*, USGS Water-Supply Paper 1819-B, published in 1965, was prepared in cooperation with the City of Memphis and MLGW. J-59, page 1 of 32.

53. In *Predicted Hydrologic Effects of Pumping from the Lichterman Well Field in the Memphis Area, Tennessee*, the USGS predicted the hydrologic effects of pumping from the Lichterman Field, J-59, page 6 of 32.

54. In *Predicted Hydrologic Effects of Pumping from the Lichterman Well Field in the Memphis Area, Tennessee*, the USGS concluded that: "Pumping in the Lichterman well field will create a cone of depression in the free-water (piezometric)

surface of the '500-foot' sand. The decline of water levels will be directly proportional to the rate of pumping and inversely proportional to the distance from the well field. The resultant changes in hydraulic gradients will alter the direction of ground-water movement in the vicinity of the well field and increase the rate of movement toward the well field from areas of recharge." J-59, page 6 of 32.

55. In *Predicted Hydrologic Effects of Pumping from the Lichterman Well Field in the Memphis Area, Tennessee*, the USGS concluded that "an estimate of 20 miles is considered reasonable for the probable extent of the cone of depression to be formed around the Lichterman well field." J-59, page 19 of 32.

56. MLGW began operating the Lichterman wells in 1965, the Davis wells in 1970, and the Palmer wells in 1973. J-24, page 46 of 54.

57. MLGW increased its total Memphis Sand pumping from 55.5 Mgd in 1960 to 110.5 Mgd in 1975. J-24, page 46 of 54.

58. Total Shelby County pumping from the Memphis Sand by major water users increased from 127 Mgd in 1960 to 188 Mgd in 1975. J-24, page 46 of 54. MLGW's increase was attributable to the Lichterman and Davis well fields. *See* P-157, page 2 of 2; J-24, page 46 of 54.

59. MLGW produced 666.8 billion gallons of groundwater from these three fields during the period of 1965-2016. *See* P-157, page 2 of 2. Of this total,

approximately 369 billion gallons was from Lichterman, 240 billion was from Davis, and 58 billion was from Palmer. *See* P-157, page 2 of 2.

60. A cone of depression is an area of lower potentiometric head surrounding an active pumping well that is caused by pumping (with the lowest potentiometric head being at the well). S18.

61. MLGW's pumping has created a large, deep regional cone of depression that extends many miles into Mississippi. J-11, page 13 of 27; J-24, page 9 of 54; J-33, page 1 of 1; J-34, page 6 of 26; J-35, page 23 of 52; J-48, page 1 of 1; J-50, page 1 of 1; J-60, page 29 of 40; J-62, page 5 of 13; J-63, page 12 of 36; J-64, pages 32-33 of 48; J-67, page 1 of 1; J-76, page 21 of 192; P-72, page 4 of 4; Tr. 429, 434, 442, 448-50, 453-54; Tr. 188, 205-06; Brahana Dep. at 45, 122; Gentry Dep. at 53. *See generally*, Brahana Dep. Designated testimony and exhibits including P-114 to 139.

62. The cone of depression created by MLGW extends into DeSoto County, Mississippi. Brahana Dep. 122:18-22; Gentry Dep. 53:13-54:7.

63. During the 1970's MLGW's increased pumping caused the regional cone of depression to deepen and expand throughout the area around Memphis. J-24, page 22 of 54.

64. During the 1970's the USGS reported "noticeable changes by 1970" with the development of cones from the Lichterman and Davis well fields which added to the regional cone of depression. J-24, page 29 of 54.

65. MLGW's pumping is pulling Mississippi groundwater into Shelby County for production by MLGW. Tr. 928; P-101, page 14 of 44.

66. MLGW has pumped millions of gallons of groundwater per day from Mississippi. P-61; P-62; P-63; P-64 to P-71; P-96 to P-100; P-106 to P-109.

67. The amount of groundwater taken by MLGW from Mississippi from 1965 through 2016 was approximately 21.7 million gallons per day, and an approximate total of 411 *billion* gallons. Tr. 468 and 481; P-159.

68. In 1998, *The Commercial Appeal* reported that groundwater pumping in Shelby County was taking approximately 20 million gallons of groundwater per day from Mississippi. Gentry Dep. at 35.

69. Randy Gentry (of the Memphis Groundwater Institute) stated that the 20 million gallons of groundwater per day being pumped from Mississippi noted in 1998 Commercial Appeal article was a reasonable estimate. Gentry Dep. at 35.

70. The cones of depression created by MLGW have caused material, adverse physical changes to Mississippi's sovereign territory, including adverse changes to the hydrogeologic conditions existing in northwest Mississippi. J-76, page 21 of 192; J-4, page 10 of 68; J-10, page 26 of 80; Brahana Dep. 136-137.

71. MLGW's cone of depression has caused a reduction of "total available drawdown" within the cone's area/zone of influence, reducing the amount of groundwater that can be produced by a well within the cone of depression in Mississippi. Tr. 210, 274-275.

72. Due to the cone of depression, the "maximum yield" of each such Mississippi well has been reduced and the amount of groundwater the well can recover has thereby been reduced, which means that more wells and more pumps--at great expense--are required to recover the water needs of Mississippi's producers, and the power costs of those producers have also been increased. Tr. 153, 212-14; J-40, pages 50, 68 and 81 of 91.

73. MLGW could have obtained groundwater pumped out of Mississippi from the Mississippi River. J-60, page 33 of 40.

74. MLGW could have placed its wells in other locations. J-63, page 6 of 36; J-63, page 8 of 36; J-63, page 11 of 36.

75. MLGW could have placed well fields at locations to the north and east of Memphis and obtained groundwater without taking groundwater from Mississippi. J-4, page 49 of 68; J-63, page 6 of 36; Tr. 937-38.

76. MLGW had control over the design, placement and operation of its well fields. P-103.

77. Before drilling a well, MLGW could predict the geographic extent and depth of a resulting cone of depression. Tr. 934-37.

78. MLGW could have placed its wells in other locations. J-63, page 6 of 36; J-63, page 8 of 36; J-63, page 11 of 36.

79. MLGW could have placed well fields at locations to the north and east of Memphis and obtained groundwater without taking groundwater from Mississippi. J-4, page 49 of 68; J-63, page 6 of 36; Tr. 937-38.

80. There is "tremendous complexity" within the subsurface geology throughout the Mississippi Embayment. P-71.

81. The Sparta Sand has been recognized in scientific literature as a distinct aquifer; and the Memphis Sand has been recognized as a distinct aquifer. J-71, page 1 of 1; D-174, page 4 of 21, Figure 1; J-41, pages 11-12 and 24-28 of 43; J-67, page 1 of 1; J-69, page 60 of 153; Tr. 244.

82. The Sparta Sand and the Memphis Sand are found in different locations, and have materially different hydrogeologic characteristics, including thickness, sedimentary grain size, and transmissivity. Tr. 144.

83. The Memphis Sand is an extremely thick geologic formation consisting predominantly of sand that extends throughout western Tennessee, from the Kentucky border in the north to the Mississippi border in the south. J-18, pages 11-16 of 70; J-41; J-15.

84. The thick Memphis Sand formation disappears at or just south of the Mississippi border, and is replaced by the Sparta Sand and several other distinct formations identified by the USGS, each having different sedimentary compositions and hydrogeologic characteristics. J-18, pages 11-16 of 70; J-41; J-15.

85. "Regional hydrogeologic units" are broad classifications for groups of aquifers and for groups of confining layers. Tr. 95-96.

86. A hydrogeologic unit can either be a "hydrogeologic aquifer unit," or a "hydrogeologic confining unit," *see* J-18, pages 11 and 15 of 70; and a hydrogeologic aquifer unit may have multiple, separate aquifers within the unit. Tr. 95.

87. In the Mississippi Embayment, the USGS has identified a hydrogeologic aquifer unit that the USGS has labeled the "Middle Claiborne aquifer." This unit is comprised of multiple aquifers: the Lisbon in Alabama; the Sparta Sand in Mississippi, Kentucky, southern Arkansas, and Louisiana; and the Memphis Sand in Tennessee, Missouri, and northeastern Arkansas. J-18, page 15 of 70.

88. The Sparta Sand in north Mississippi and the Memphis Sand in Tennessee have been classified by the USGS as being part of the larger regional *hydrogeologic aquifer unit* known as the "Middle Claiborne aquifer." Tr. 104.

89. MLGW's expert David E. Langseth stated in his expert report that "the aquifer at issue" is the "Memphis/Sparta Sand Aquifer (MSSA)," which Mr. Langseth defines as "[t]he aquifers of the Middle Claiborne, Lower Claiborne, and Upper Wilcox [hydrogeologic units], represented by layers 5-10 in the US Geological Survey (USGS) Mississippi Embayment Regional Aquifer Study (MERAS) model . . . ." D-191, page 10 of 80.

90. Tennessee's expert Brian Waldron stated "the aquifer at issue" is the "Middle Claiborne aquifer," which he defines to include only the Memphis aquifer and the Sparta aquifer. D-194, page 5 of 37.

91. Dr. Waldron previously wrote in publications that the Memphis Sand and Sparta Sand were separate aquifers. D-174, page 4 of 21, Figure 1; J-76, pages 21-22 of 192; Tr. 913.

92. USGS studies identify the aquifers of the Middle Claiborne, Lower Claiborne, and Upper Wilcox hydrogeologic units as separate aquifers. J-3, page 9 of 102; J-4, page 21 of 68; J-5, page 24 of 115; J-36, pages 29-31 of 41; J-37, pages 8-9 of 14; J-42, page 26 of 50; J-43, page 11 of 62.

93. Dr. Waldron previously concluded that the Memphis Sand is not even a single aquifer. J-76, page 56 of 192; J-76, page 44 of 192.

94. The Mississippi Embayment underlies at least eight states, with soils which are infinitely complex and diverse due to the natural forces which created the Mississippi Embayment over millions of years. Tr. 67-75; S9.

95. The Mississippi Embayment's subsurface geology includes discontinuous deposits of sedimentary materials, including sand, silt, and clay, and the generally recognizable formations that vary in geographic coverage, thickness, permeability, specific yield, water quality, and other characteristics and these characteristics in a single aquifer change dramatically over short distances. S8; Tr. 142, 146; J-13, page 5 of 26.

96. David Langseth testified that there are significant variations in local geology and hydrogeology within the Mississippi Embayment. Tr. 1098-1100.

97. The USGS has recognized the challenges of groundwater allocation, even by agreement, stating: "trying to define the aquifer itself;" "unlike rivers, ground-water flow cannot be measured directly:" "the lag time between development stresses and resulting regional responses is very much longer in a ground-water system than in a surface-water system;" "the allocation of existing ground-water flow rates may not provide a logical basis for distributing or allocating the development of the ground-water resource;" "there are serious measurement problems" in head distribution data; "hydraulic head also varies with depth and with time at any given location;" additional questions arise from the impacts of

"withdrawals from other formations;" "possible effects of ground-water development on the stream flow and spring discharge" are difficult to "define precisely and accurately;" and "an interstate ground-water compact may require very precise, legally acceptable definitions that may imply a degree of measurement accuracy that cannot be technically or economically provided." J-51, pages 5, 6, 8-12 of 12.

## II. CONCLUSIONS OF LAW

1. The Interstate Commerce Clause has no application to this dispute. See *Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208, 222 (2009); *Milwaukee v. Illinois and Michigan*, 451 U.S. 304, 101 S.Ct. 1784, 68 L.Ed.2d 114, fn. 8 (1981)(Federal Water Pollution Act controls interstate surface water pollution dispute); *Merrill Lynch, Pierce, Fenner & Smith, Inc. v. Ware*, 414 U.S. 117, 94 S.Ct. 383, 38 L.Ed.2d 348 (1973)(employment dispute over arbitration clause enforceability under State law); *General Motors Corp. v. Washington*, 377 U.S. 436, 84 S.Ct. 1564, 12 L.Ed.2d 430 (1964)(Tax on vehicles and parts sold in Washington, but manufactured in other states upheld); *Toolson v. New York Yankees, Inc.*, 346 U.S. 356, 74 S.Ct. 78, 98 L.Ed. 64 (1953)(interstate business of professional baseball clubs not subject to antitrust laws); *Norton Co. v. Dept. of Rev.*, 340 U.S. 534, 71 S.Ct. 377, 95 L.Ed. 517 (1951)(Illinois Occupation Tax on sales of goods in Chicago by branch of Massachusetts upheld); *Independent Warehouses v. Scheele*, 331 U.S. 70, 67 S.Ct.

1062, 91 L.Ed. 1346 (1947)(town license tax on warehouse used to store coal in transit by Pennsylvania Coal Company upheld).

2. Each State holds all sovereign authority of a nation within its boundaries, save the portion of that sovereignty granted to the federal government. *Rhode Island v. Massachusetts,* 37 U.S. 657, 719 (1838).

3. Mississippi and Tennessee's retained sovereign authority, and the limits of that retained sovereign authority, originate exclusively under the Constitution of the United States and the 10th Amendment to the Constitution. U.S. Const. amend. X.

4. "Each State has full jurisdiction over the lands within its borders, including the beds of streams and other waters." *Kansas v. Colorado*, 206 U.S. 46. 93 (1907).

5. States have traditional and primary power over water within their borders, and courts have consistently recognized that those waters are held in trust by the State for the public. Such authority imposes on the State a duty to control and conserve water for the benefit of its inhabitants. *City of Trenton v. New Jersey*, 262 U.S. 182, 184-85 (1923).

6. As between two States no State has any right beyond its territorial border, which represents the true line of right and power between them. *Rhode Island*

*v. Massachusetts,* 37 U.S. 657, 733, 735 (1838); *Kansas v. Colorado*, 206 U.S. 46. 95 (1907).

7. This dispute is between coequal sovereigns on a matter outside the realm of the federal government to be decided under the Constitution. U.S. Const. amend. X; *PPL Mont., LLC v. Montana*, 132 S. Ct. 1215, 1235 (2012); *Oregon ex rel. State Land Bd v. Corvallis Sand & Gravel Co.*, 429 U.S. 363, 370-78 (1977); *Pollard v. Hagan*, 44 U.S. 212, 222-23 (1845); *Martin v. Waddell's Lessee*, 41 U.S. 367 (1842); in *Rhode Island v. Massachusetts,* 37 U.S. 657, 719 (1838). No such conundrum is present in this case.

8. Under the Constitution of the United States and the 10th Amendment to the Constitution, the State of Tennessee possesses no interest under law or equity in groundwater located within Mississippi's borders under the conditions created by nature before groundwater pumping. *Tarrant Regional Water Dist.* 568 U.S. 614, 663-662 (1953).

9. Neither the Supreme Court's equitable apportionment jurisprudence, nor any other Supreme Court authority cited by Defendants support Defendants' claim of right to pump groundwater located in Mississippi under the conditions created by nature into Tennessee for its use, or the use and benefit of its citizens.

For the reasons stated herein, the Special Master recommends that the Court find and hold that the water at issue is not an "interstate resource" for purposes of

application of equitable apportionment and this matter should proceed following instructions from the Court.

Dated: September 19, 2019.

Respectfully submitted,

**THE STATE OF MISSISSIPPI**

*/s/ C. Michael Ellingburg*
C. Michael Ellingburg


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## CERTIFICATE OF SERVICE

Pursuant to Paragraph 3 of the Special Master's Case Management Plan (Dkt. No. 57), I hereby certify that all parties on the Special Master's approved service list (Dkt. No. 26) have been served by electronic mail, this the 19th day of September, 2019.

*/s/ C. Michael Ellingburg*
C. Michael Ellingburg

*Counsel for Plaintiff*