

**MINIMIZING INDIRECT POINT SOURCE  
POLLUTION UNDER THE CWA:  
A CASE FOR A DE MINIMIS  
TRANSFORMATION STANDARD**

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## I. INTRODUCTION

On April 23, 2020, the Supreme Court decided a landmark Clean Water Act (CWA) case, *County of Maui v. Hawai‘i Wildlife Fund (Maui)*.<sup>1</sup> Environmentalists deemed *Maui* a victory for clean water.<sup>2</sup> Against cooperative federalism and textualist arguments, the Supreme Court interpreted the Environmental Protection Agency’s (EPA) jurisdiction to encompass the regulation of discharges from point sources that travel through a conduit, such as groundwater, before reaching navigable waters. This Note affirms the Supreme Court’s decision to accept the conduit theory regarding indirect discharges of point source pollution. However, this Note suggests that the Court could have improved the test it developed for determining whether an indirect discharge is a “functional equivalent” of a direct discharge.

The malleable nature of the Supreme Court’s factor-based approach to determining functional equivalency has already led to its unpredictable implementation. Consequently, as the factors are applied in practice, courts can expect an inevitable increase in litigation challenging their application. To help avoid this possibility, this Note posits an alternative analysis for determining functional equivalency. By analyzing the CWA’s structural scheme and traditional interpretations of the relevant statutory language, this Note suggests a new “de minimis transformation” test as an interpretation of the functional equivalent standard. The de minimis transformation standard uses the term “pollutant” as an anchor by which to reconcile the statutory scheme of Section 402, which regulates point source pollution, with the purposes of the whole statute. Using the de minimis transformation test as an indicator of functional equivalence of a direct discharge may

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1. *Cnty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462 (2020).

2. Jessica A. Knoblauch & Maggie Caldwell, *The Clean Water Case of the Century*, EARTHJUSTICE (Apr. 23, 2020), <https://earthjustice.org/features/supreme-court-maui-clean-water-case>.

reduce the potential for arbitrary and inconsistent applications and would more effectively balance competing policy concerns such as giving adequate notice to regulated entities and effectuating the purposes of the CWA in a modern world.

In proposing this alternative standard, this Note probes the tension between environmental groups' interest in assuring more significant limits on point source pollution and the economic and practical interests in a narrower definition of "discharge" under the CWA. Part II of this Note supplies definitions of relevant terms within the CWA and describes the conduit theory. Part III outlines the circuit split regarding what constitutes a discharge from a point source, in the context of indirect discharges, and how the Supreme Court recently resolved the circuit split. Part IV then proposes a *de minimis* transformation test that may better guide regulators and regulated entities compared to *Maui's* seven-factor functional equivalent test. Part V puts forth policy rationales supporting the *de minimis* transformation test. Finally, Part VI addresses the conceivable counterarguments while advocating for the *de minimis* transformation standard as a means to satisfy competing needs.

## II. BACKGROUND

### A. *Clean Water Act Terms*

To properly understand the contentions between the parties in *Maui*, it is helpful to review the pertinent provisions of the CWA. Faithful to its purpose of protecting the integrity of our nation's waters,<sup>3</sup> the CWA prohibits any discharge of a pollutant by any person.<sup>4</sup> However, Congress made an exception to this general ban by explaining in Section 402, "the [EPA] Administrator may . . . issue a [National Pollutant Discharge Elimination System (NPDES) permit] for the discharge of any pollutant . . . upon condition that such discharge will meet [prescribed requirements]."<sup>5</sup> A NPDES permit outlines effluent limits for various contaminants and requires the permit-holder to adhere to pollutant reduction mechanisms, such as pollutant control technologies.<sup>6</sup>

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3. 33 U.S.C. § 1251(a) ("The objective of [the CWA] is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.").

4. *Id.* § 1311(a).

5. *Id.* § 1342(a).

6. *See id.* §§ 1311, 1342.

Section 502 of the CWA stipulates when a person may be required to obtain a NPDES permit. The CWA defines a “discharge of a pollutant” as, and therefore requires a NPDES permit for, “any *addition of any pollutant to navigable waters from any point source.*”<sup>7</sup> Congress limited the permitting requirement so that it only applies to discharges to “navigable waters,”<sup>8</sup> or “the waters of the United States, including the territorial seas.”<sup>9</sup> Notably, discharges of pollutants may be direct, meaning the point source releases pollutants directly into navigable waters, or they may be indirect, meaning the pollutant travels through a conduit source before reaching navigable waters.<sup>10</sup> The Supreme Court, the EPA, and the U.S. Army Corps of Engineers (Army Corps) agree that the term “navigable waters” in the CWA “is broader than the traditional understanding” of navigable (suitable for navigation).<sup>11</sup> The CWA defines a “point source” as “any discernible, confined and discrete conveyance . . . from which pollutants are or may be discharged.”<sup>12</sup> The statute identifies pipes, ditches, conduits, channels, tunnels, concentrated animal feeding operations, and wells as examples of potential point sources.<sup>13</sup> Pollutant means “dredged spoil, solid waste, incinerator, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.”<sup>14</sup>

To interpret the definition of a discharge, “any *addition of any pollutant to navigable waters from any point source,*”<sup>15</sup> most courts have focused on the terms “to” and “from” to provide insight into how far NPDES jurisdiction reaches.<sup>16</sup> In contrast, considering that discharges to navigable waters may be direct or indirect, this Note focuses on the term “pollutant” within the definition of a

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7. *Id.* § 1362(12)(A) (emphasis added).

8. *See id.* §§ 1342, 1362(11-12).

9. *Id.* § 1362(7).

10. *See Cnty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462, 1468–77 (2020).

11. *Rapanos v. United States*, 547 U.S. 715, 731 (2006); *see California v. Wheeler*, 467 F. Supp. 3d 864, 873 (N.D. Cal. 2020).

12. 33 U.S.C. § 1362(14).

13. *Id.*

14. *Id.* § 1362(6).

15. *Id.* § 1362(12)(A) (emphasis added).

16. *See Upstate Forever v. Kinder Morgan Energy Partners, L.P.*, 887 F.3d 637, 650–51 (4th Cir. 2018); *see also Ky. Waterways All. v. Ky. Utils. Co.*, 905 F.3d 925, 934–35 (6th Cir. 2018); *see also Tenn. Clean Water Network v. Tenn. Valley Auth.*, 905 F.3d 436, 443–45 (6th Cir. 2018); *see, e.g., Cnty. of Maui*, 140 S. Ct. at 1462, 1470–76.

discharge to help delineate the bounds of what indirect discharges should be subject to the CWA's Section 402 NPDES program.

### *B. The "Conduit Theory"*

*Maui* held that regulated discharges can be direct or indirect under the NPDES program.<sup>17</sup> But before the Supreme Court decided *Maui*, some federal courts understood the NPDES program only to extend to direct discharges.<sup>18</sup> In other words, jurisdictions that would only apply NPDES requirements to direct discharges *reject* the conduit theory. The conduit theory acknowledges that groundwater, transported through subsurface geological formations, can carry pollutants from a point source to navigable waters.<sup>19</sup> Because the point source "*effectively* discharges to the directly connected surface waters[,] it falls under the CWA's prohibition on the discharge of pollutants "to navigable waters" and should require a NPDES permit in order to continue discharging.<sup>20</sup> Groundwater is generally not considered a "point source," but groundwater may serve as a conduit, or conveyance, that carries discharges from the point source to the navigable water.<sup>21</sup> Hydrological studies have confirmed that groundwater connects bodies of water and therefore serves as a delivery system, or conduit, from subsurface waters to surface waters.<sup>22</sup> Moreover, the EPA has historically acknowledged that groundwater, as a medium, may subject some activities to EPA rules; the EPA has included tributary groundwater under its jurisdiction for various regulatory regimes.<sup>23</sup> Some courts have accepted the conduit

17. See *Cnty. of Maui*, 140 S. Ct. at 1468–77.

18. See *Tenn. Clean Water Network*, 905 F.3d at 444–45; see, e.g., *Ky. Waterways All.*, 905 F.3d at 934–36.

19. Kathrine Klaus, *The Conduit Theory: Protecting Navigable Waters from Discharges to Tributary Groundwater*, 43 VT. L. REV. 871, 880–81 (2019).

20. Amendments to the Water Quality Standards Regulation That Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64,892 (Dec. 12, 1991) (to be codified at 40 C.F.R. pt. 131) (emphasis added); 33 U.S.C. §§ 1311(a), 1342, 1362(12)(A).

21. *Ky. Waterways All. v. Ky. Utils. Co.*, 905 F.3d 925, 933 (6th Cir. 2018) (noting that groundwater is not "discernible," "confined," or "discrete" as required under the CWA's definition of a "point source"); see also 33 U.S.C. § 1362(14).

22. Charles J. Taylor & Earl A. Greene, *Field Techniques for Estimating Water Fluxes Between Surface Water and Groundwater*, U.S. GEOLOGICAL SURV. & DEPT. OF THE INTERIOR, 75 (2008) <https://pubs.usgs.gov/tm/04d02/pdf/TM4-D2-chap3.pdf>.

23. National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, 55 Fed. Reg. 47,990, 47,997 (Nov. 16, 1990) (to be codified at 40 C.F.R. pts. 122, 123, & 124) (defining stormwater and noting "ground waters are not covered by this rulemaking (unless there is a hydrological connection between the ground water and a nearby surface water body . . .)"; Amendments to the Water Quality Standards Regulation That Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64,892 (Dec. 12,

theory because it aligns with the CWA's purpose of protecting the integrity of our nation's waters.<sup>24</sup> However, courts that have rejected the conduit theory generally conclude that "groundwater regulation should be left to the states."<sup>25</sup> The CWA is designed to "recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, and to plan the development and use . . . of land and water resources."<sup>26</sup> Furthermore, these courts believe, the CWA's purpose is not limited to protecting the integrity of our nation's waters. Concurrently, the CWA has an additional purpose of "fostering cooperative federalism."<sup>27</sup>

The CWA employs a cooperative federalism model, where the "federal government outlines the contours of [water protection programs], and then uses a combination of carrots and sticks to encourage states to implement the program[s] in accordance with [the] federal [plan]."<sup>28</sup> Though the CWA provides for mechanisms to assist states with instituting programs to mitigate groundwater and nonpoint source pollution, or pollution for which there is no "readily identifiable source,"<sup>29</sup> the CWA does not actively regulate these sources of pollution.<sup>30</sup> Additionally, the CWA only

1991) (to be codified at 40 C.F.R. pt. 131) (A NPDES permit is required "for discharges to groundwater where there is a direct hydrological connection between groundwaters and surface waters . . . . [While] the affected groundwaters are not considered "waters of the United States[.]" discharges to them are regulated because such discharges are effectively discharges to the directly connected surface waters."); National Pollutant Discharge Elimination System Permit Regulation and Effluent Limitations Guidelines and Standards for Concentrated Animal Feeding Operations, 66 Fed. Reg. 2960, 3015 (proposed Jan. 12, 2001) (to be codified at 40 C.F.R. pts. 122 & 412) (EPA suggesting that permit-writers for CAFOs include special conditions for discharges *via* groundwater).

24. Klaus, *supra* note 19, at 889.

25. *Id.*

26. *Tenn. Clean Water Network v. Tenn. Valley Auth.*, 905 F.3d 436, 439 (6th Cir. 2018); *Ky. Waterways All. v. Ky. Utils. Co.*, 905 F.3d 925, 936–37 (6th Cir. 2018); 33 U.S.C. § 1251(b).

27. *Ky. Waterways All.*, 905 F.3d at 937.

28. Jonathan H. Adler, *When Is Two a Crowd—The Impact of Federal Action on State Environmental Regulation*, 31 HARV. ENV'T. L. REV. 67, 87 (2007).

29. *Cnty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462, 1471 (2020). For example, the CWA requires states to compensate for federal point source regulation's inadequacy by also regulating nonpoint sources through total maximum daily load allocations (TMDLs). 33 U.S.C. §§ 1313(d)(1)(A), 1313(d)(C).

30. Rather, the CWA indirectly governs nonpoint source pollution through grants and incentive programs. For example, states may use Section 319 Nonpoint Source Management Program grants to develop and implement groundwater quality monitoring programs. 33 U.S.C. § 1329(i). Additionally, Section 303(d) outlines the CWA's TMDL requirements for states to implement nonpoint source pollution controls when the state does not otherwise meet water quality standards. *Id.* §§ 1313(d)(1)(A), 1313(d)(C). Furthermore, states may use Section 106 Water Pollution Control Grants to monitor groundwater. *Id.* § 1256.

prohibits discharges to *navigable waters*, not state waters.<sup>31</sup> Moreover, Congress created “dozens of non-regulatory grant, research, nonpoint source, groundwater, and watershed planning programs . . . to assist the States in controlling pollution . . . .”<sup>32</sup> Though the goal of the CWA is to restore the integrity of the nation’s waters, these programs within the CWA “reveal [Congress’s] intent to restore and maintain the integrity of the nation’s waters using federal assistance to support State, tribal, and local partnerships to control pollution of the nation’s waters in addition to [the federal NPDES program].”<sup>33</sup> In other words, the CWA “anticipates a partnership between the States and the [f]ederal [g]overnment.”<sup>34</sup> Further, Congress’s “election not to regulate all sources of pollution” or all waters within the United States, comes from congressional “reluctance . . . to allow extensive federal intrusion into areas of regulation that might implicate land and water use in individual states.”<sup>35</sup> Regulation of land use is necessary to regulate groundwater and nonpoint source pollution, so Congress is disinclined to intrude into local prerogatives.<sup>36</sup> For some courts, this cooperative federalism framework presents persuasive evidence for rejecting the conduit theory.

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31. See 33 U.S.C. §§ 1311(a), 1362(12)(A).

32. Navigable Waters Protection Rule, 85 Fed. Reg. 22,250, 22,269 (April 21, 2020) (to be codified at 40 C.F.R. pt. 122 and scattered parts of 40 C.F.R.).

33. *Id.*

34. *Arkansas v. Oklahoma*, 503 U.S. 91, 101 (1992).

35. Damien Schiff, *Keeping the Clean Water Act Cooperatively Federal—Or, Why the Clean Water Act Does Not Directly Regulate Groundwater Pollution*, 42 WM. & MARY ENV’T. L. & POLY REV. 447, 449 (2018) (Rejecting the conduit theory on cooperative federalism grounds); Robert W. Adler, *The Two Lost Books in the Water Quality Trilogy: The Elusive Objectives of Physical and Biological Integrity*, 33 ENV’T. L. 29, 56 (2003), quoted in *Or. Nat. Desert Ass’n v. U.S. Forest Serv.*, 550 F.3d 778, 785 (9th Cir. 2008)); see also Robin K. Craig & Anna M. Roberts, *When Will Governments Regulate Nonpoint Source Pollution? A Comparative Perspective*, 42 B.C. ENV’T. AFF. L. REV. 1, 2 (2015) (“[N]onpoint source pollution is well-recognized to be one of the last major barriers to achieving state and national water quality goals. Despite this . . . Congress made a conscious decision to leave regulation of nonpoint source pollution to the states when it comprehensively amended the [CWA].”).

36. James C. Buresh, Note, *State and Federal Land Use Regulation: An Application to Groundwater and Nonpoint Source Pollution Control*, 95 YALE L.J. 1433, 1436 (1986).

## III. STATE OF THE LAW

## A. EPA's Jurisdiction over Navigable Waters and Point Source Pollution

In determining whether a discharge is subject to NPDES obligations, the term “navigable” is critical. If a point source does not release a pollutant to navigable waters, it is not a discharge of a pollutant within the context of the CWA.<sup>37</sup> In 2001, Justice Scalia, in his plurality opinion in *Rapanos v. United States* (*Rapanos*), suggested that “navigable waters” include “relatively permanent bod[ies] of water connected to traditional interstate navigable waters.”<sup>38</sup> For example, Scalia’s interpretation requires wetlands to abut and provide a continuous flow to navigable-in-fact waters in order for the wetlands to be considered navigable.<sup>39</sup> However, under the Marks doctrine, because of the *Rapanos* decision’s fractured nature (a 4-4-1 split), Justice Kennedy’s concurring opinion is generally considered the *Rapanos* Court’s holding.<sup>40</sup> Kennedy defined “navigable waters” as those that possess a “significant nexus” with waters that are navigable-in-fact.<sup>41</sup> To Justice Kennedy, waters or wetlands possess a significant nexus if they “either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, or biological integrity of [navigable-in-fact waters].”<sup>42</sup> Further, the existence of a significant nexus “must be assessed in terms of the [CWA’s] goals and purposes,” and wetlands play an essential function in achieving the CWA’s purpose of restoring the integrity of the nation’s waters.<sup>43</sup>

Though groundwater might connect wetlands or otherwise non-navigable waters to navigable-in-fact waters, the Supreme Court has held that groundwater itself is not navigable.<sup>44</sup> Furthermore,

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37. See 33 U.S.C. §§ 1342(a), 1362(12)(A).

38. *Rapanos v. United States*, 547 U.S. 715, 731, 742 (2006).

39. *Id.* at 754.

40. See *Marks v. United States*, 430 U.S. 188, 193 (1977) (“When a fragmented Court decides a case and no single rationale explaining the result enjoys the assent of five Justices, ‘the holding of the Court may be viewed as that position taken by those Members who concurred in the judgments on the narrowest grounds.’”) (quoting *Gregg v. Georgia* 428 U.S. 153, 169 n.15 (1976)).

41. *Rapanos*, 547 U.S. at 779–87 (Kennedy, J., concurring).

42. *Id.* at 780 (Kennedy, J., concurring).

43. *Id.* at 779 (Kennedy, J., concurring) (citing 33 U.S.C. § 1251(a), which describes the purpose of the CWA).

44. See *Cnty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462, 1472 (2020).



the EPA and Army Corps have consistently declared that groundwater is categorically excluded from the definition of Waters of the United States (WOTUS), the EPA's and Army Corps' interpretation of navigable waters.<sup>45</sup> As a result, before *Maui*, courts grappled with whether an indirect discharge that travels through groundwater before reaching navigable waters should be considered a discharge "to" navigable waters and therefore require a NPDES permit. Notably, Justice Scalia in dicta in *Rapanos* stated that even his narrow interpretation of navigable waters would not necessarily limit NPDES jurisdiction and allow dischargers to evade the obligation to acquire a NPDES permit easily.<sup>46</sup> The omission of the word *directly* in the definition of "discharge of a pollutant" was of consequence to Scalia.<sup>47</sup> Scalia interpreted the CWA as not forbidding "the 'addition of any pollutant *directly* to navigable waters from any point source,'" but rather the "addition of any pollutant *to* navigable waters."<sup>48</sup> This suggested that even indirect discharges could be subject to NPDES liability. With the *Rapanos* dictum as background, federal courts before *Maui* attempted to resolve the issue of whether to accept or reject the conduit theory.<sup>49</sup> In other words, courts have considered whether a discharge that travels through groundwater before reaching navigable waters should be subject to NPDES requirements.

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45. The Obama Administration's "Clean Water Rule" excluded groundwater from the definition of WOTUS. 80 Fed. Reg. 37,054, 37,120 (June 29, 2015) (codified at 33 C.F.R. pt. 328; 40 C.F.R. pts. 110, 112, 116, 117, 122, 230, 232, 300, 302, 401); *see also* 40 C.F.R. § 300.5(2)(v) (repealed June 22, 2020). The Trump Administration's "Navigable Waters Protection Rule" also excluded groundwater from the definition of WOTUS. 85 Fed. Reg. 22,250, 22,340 (Apr. 21, 2020) (to be codified at 40 C.F.R. pt. 122 and scattered parts of 40 C.F.R.); 40 C.F.R. § 120.2(2)(ii).

46. *Rapanos v. United States*, 547 U.S. 715, 742–43 (2006).

[F]rom the time of the CWA's enactment, lower courts have held that the discharge into intermittent channels of any pollutant *that naturally washes downstream* likely violates [the ban on discharges of pollutants to navigable waters], even if the pollutants discharged from a point source do not emit "directly into" covered waters, but pass "through conveyances" in between. *Id.* (citing *United States v. Velsicol Chemical Corp.*, 438 F. Supp. 945, 946–47 (W.D. Tenn. 1976) and *Sierra Club v. El Paso Gold Mines, Inc.*, 421 F.3d 1133, 1137, 1141 (10th Cir. 2005)).

47. *See id.* at 743.

48. *Id.* at 743 (quoting 33 U.S.C. § 1362(12)(A)) (emphasis in original).

49. *See, e.g.*, *Upstate Forever v. Kinder Morgan Energy Partners, L.P.*, 887 F.3d 637 (4th Cir. 2018); *Tenn. Clean Water Network v. Tenn. Valley Auth.*, 905 F.3d 436 (6th Cir. 2018); *Ky. Waterways All. v. Ky. Utils. Co.*, 905 F.3d 925 (6th Cir. 2018).

*B. Recently Resolved Circuit Split:  
Hydrological Connection Versus Fairly Traceable*

In 2015, Plaintiff environmental groups brought suit in the U.S. District Court for the District of Hawai'i against a wastewater treatment facility operated by the County of Maui in *Hawai'i Wildlife Fund v. County of Maui (Hawai'i Wildlife Fund)*.<sup>50</sup> The County facility releases wastewater into injection wells, which carry and dispose of approximately four million gallons of contaminated effluent into groundwater.<sup>51</sup> The effluent then travels through the groundwater half a mile to the Pacific Ocean.<sup>52</sup> The issue was “whether the presence of an intermediary region through which the pollutants flow [from the point source to navigable waters] interrupts the chain” that establishes NPDES liability.<sup>53</sup> The defendant, the County of Maui, argued that before NPDES liability can attach, a pollutant must pass through “point sources along the entire pathway it travels” to navigable waters.<sup>54</sup> Under the County’s reasoning, since groundwater is not a point source, the wastewater facility is not discharging a pollutant to navigable waters.<sup>55</sup> The District Court rejected this reasoning and granted summary judgment for the environmental groups.<sup>56</sup> The District Court reasoned that the County’s desired interpretation, which would only require the discharger obtain a NPDES permit if their discharge travels through a series of point sources the entire way to navigable waters, would “undermine the very purpose of the [CWA].”<sup>57</sup>

On appeal, the Ninth Circuit disagreed with the District Court’s reasoning but affirmed summary judgment in February

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50. *Haw. Wildlife Fund v. Cnty. of Maui*, 24 F. Supp. 3d 980, 983 (D. Haw. 2014) (the Lahaina Wastewater Reclamation Facility (LWRF)).

51. *Haw. Wildlife Fund v. Cnty. of Maui*, 886 F.3d 737, 742 (9th Cir. 2018).

52. *Id.* at 742–44, 747, 749 (Using tracer dye studies, government researchers found that “[a]bout one out of every seven gallons of groundwater entering the ocean near the LWRF is comprised of effluent from the wells,” and “[sixty-four] percent of the wells’ pollutants reach[] the ocean”).

53. Robert W. Adler & Brian House, *Atomizing the Clean Water Act: Ignoring the Whole Statute and Asking the Wrong Questions*, 50 ENV’T. L. 45, 82 (2020).

54. *Haw. Wildlife Fund v. Cnty. of Maui*, No. 12-00198, 2015 U.S. Dist. LEXIS 8189, at \*10 (D. Haw. Jan. 23, 2015).

55. *See id.* at \*10–11.

56. *Id.* at \*15–16.

57. *Id.* at \*13–14 (“[E]xempting discharges of pollutants from a point source merely because the polluter is lucky (or clever) enough to have a nonpoint source at the tail end of a pathway to navigable waters would undermine the very purpose of the Clean Water Act.”).

2018.<sup>58</sup> Determining that the discharge is “functionally one into navigable water” because it is from a point source, is *fairly traceable* to the point source, and the “pollutant levels reaching navigable water are more than *de minimis*,” the Ninth Circuit held that the indirect discharge required a NPDES permit.<sup>59</sup> Notably, the Ninth Circuit rejected the EPA’s amicus curiae stance that NPDES jurisdiction requires a “direct hydrological connection” between the point source and the navigable water.<sup>60</sup> Ignoring whether EPA’s position required any deference, the Ninth Circuit focused on the text and purpose of the CWA, explaining that the EPA “reads two words into the CWA (‘direct’ and ‘hydrological’) that are not there.”<sup>61</sup> By contrast, the Ninth Circuit reasoned, the fairly traceable test “better aligns with the statutory text” and is “consistent with Article III standing principles.”<sup>62</sup>

In April 2018, the Fourth Circuit decided a similar conduit issue and resolved the case in agreement with the Ninth Circuit’s *Hawai‘i Wildlife Fund* holding.<sup>63</sup> In *Upstate Forever v. Kinder Morgan Energy Partners, L.P.*, plaintiffs brought a CWA action in response to a pipeline spill that traveled through soil and groundwater into a navigable waterway “1,000 feet or less” from the pipeline.<sup>64</sup> The Fourth Circuit held that the EPA has jurisdiction under the CWA for pollutants traveling “1,000 feet or less” from a point source through soil and groundwater to navigable waters.<sup>65</sup> The Fourth Circuit reiterated a concern raised by the District Court in *Hawai‘i Wildlife Fund* about dischargers having a roadmap to evade liability by placing discharges into the soil or groundwater instead of navigable waters, even if only a few feet from navigable waters.<sup>66</sup>

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58. *Haw. Wildlife Fund v. Cnty. of Maui*, 886 F.3d 737, 749 (9th Cir. 2018) (“We therefore disagree with the district court that ‘liability under the Clean Water Act is triggered when pollutants reach navigable water, *regardless of how they get there.*’”) (citing *Haw. Wildlife Fund v. Cnty. of Maui*, 24 F. Supp. 3d 980, 1000 (D. Haw. 2014)).

59. *Id.*

60. *Haw. Wildlife Fund v. Cnty. of Maui*, 881 F.3d 754, 765 n.3 (9th Cir. 2018).

61. *Id.*

62. *Id.* (citing *Spokeo, Inc. v. Robins*, 136 S. Ct. 1540, 1547 (2016)).

63. *Upstate Forever v. Kinder Morgan Energy Partners, L.P.*, 887 F.3d 637, 651 (4th Cir. 2018).

64. *Id.* at 644.

65. *Id.* at 652–53. (“We do not hold that the CWA covers discharges to ground water itself. Instead, we hold only that an alleged discharge of pollutants, reaching navigable waters located 1000 feet or less from the point source *by means of ground water* with a direct hydrological connection to such navigable waters, falls within the scope of the CWA.”) *Id.* at 652 (emphasis added).

66. *Id.* at 652.

In contrast, in September of 2018, the Sixth Circuit created a circuit split regarding the conduit theory when it decided *Tennessee Clean Water Network v. Tennessee Valley Authority* (*Tennessee Clean Water*) and *Kentucky Waterways Alliance v. Kentucky Utilities Co.* (*Kentucky Waterways*).<sup>67</sup> In these cases, the Sixth Circuit found the CWA inapplicable to coal ash discharges that traveled from a holding pond to a nearby navigable waterbody by way of groundwater.<sup>68</sup> The court explained that groundwater is not a point source, and therefore groundwater breaks the chain of causation required for a discharge of a pollutant to be subject to NPDES.<sup>69</sup> Noting that Justice Scalia's opinion in *Rapanos* was intended to clarify that NPDES applies when intermediary *point sources* carry pollutants to navigable waters, the Sixth Circuit concluded that *Rapanos* should not be read to include groundwater as an intermediary point source.<sup>70</sup> Furthermore, the Sixth Circuit reasoned, the CWA is "not the proper legal tool of correction" in this case because coal ash is unique; other environmental laws such as the Coal Combustion Residuals Rule (CCR Rule) and the Resource Conservation and Recovery Act (RCRA) regulate it effectively.<sup>71</sup> Additionally, the court was concerned with protecting states' rights and responsibilities to regulate pollution.<sup>72</sup>

In both *Tennessee Clean Water* and *Kentucky Waterways*, the Sixth Circuit rejected the plaintiffs' "point source" (groundwater acts as the point source) and "hydrological connection" (conduit) theories.<sup>73</sup> Moreover, the court explained groundwater is not discrete, confined, or discernible because it is "a 'diffuse medium' that seeps in all directions, guided only by the general pull of

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67. *Tenn. Clean Water Network v. Tenn. Valley Auth.*, 905 F.3d 436, 447 (6th Cir. 2018); *Ky. Waterways All. v. Ky. Utils. Co.*, 905 F.3d 925, 938 (6th Cir. 2018).

68. See *Tenn. Clean Water Network*, 905 F.3d at 447 (the navigable water here was a river); *Ky. Waterways All.*, 905 F.3d at 934 (the navigable water here was a lake).

69. *Tenn. Clean Water Network*, 905 F.3d at 444; see also *Ky. Waterways All.*, 905 F.3d at 934.

70. *Ky. Waterways All.*, 905 F.3d at 936; *Tenn. Clean Water Network*, 905 F.3d at 444–45.

71. *Tenn. Clean Water Network*, 905 F.3d at 447; see *Ky. Waterways All.*, 905 F.3d at 938.

72. *Ky. Waterways All.*, 905 F.3d at 928, 936–37 (Another goal of the CWA is to "recognize, preserve, and protect the primary responsibilities and rights of States to prevent, reduce, and eliminate pollution, [and] to plan the development and use . . . of land and water resources.") (citing 33 U.S.C. § 1251(b)); *Tenn. Clean Water Network*, 905 F.3d at 439.

73. *Ky. Waterways All.*, 905 F.3d at 933; see *Tenn. Clean Water Network*, 905 F.3d at 444–45.

gravity,” and therefore cannot be a point source under the CWA.<sup>74</sup> In response to the plaintiffs’ hydrological connection, or conduit argument, the court did not emphasize the definition of a discharge in Section 502(12).<sup>75</sup> Instead, it focused on the definition of “effluent limitation” in Section 502(11).<sup>76</sup> Effluent limitations are the restrictions placed in NPDES permits for discharges “from point sources *into* navigable waters.”<sup>77</sup> Consequently, the court found that the word “into” in the effluent limitation definition suggests a direct release from a point source to navigable waters is required for NPDES requirements to apply.<sup>78</sup> Additionally, the Sixth Circuit analyzed the words “from” any point source in the definition of a discharge.<sup>79</sup> The court explained that when discharges travel through groundwater, the discharge is coming “from” the groundwater, not from the point source and therefore the court rejected the conduit theory.<sup>80</sup> The Sixth Circuit acknowledged that the CWA’s purpose, to protect the nation’s waters, helps justify acceptance of the conduit theory.<sup>81</sup> However, the court ultimately found paramount Congress’s explicit plan for state involvement within the CWA; Congress intended for states to be the primary authorities for nonpoint source pollution regulation.<sup>82</sup>

### *C. Maui: Resolution of the Circuit Split*

On April 21, 2020, the EPA and the Army Corps adopted a new Waters of the United States (WOTUS) Rule, which effectively limited the definition of navigable waters.<sup>83</sup> Two days later, the

74. *Ky. Waterways All.*, 905 F.3d at 933 (quoting 26 Crown St. Assocs., LLC v. Greater New Haven Reg’l Water Pollution Control Auth., No. 3:15-CV-1439, 2017 U.S. Dist. LEXIS 106989, at \*8 (D. Conn. July 11, 2017)).

75. *Id.* at 934.

76. *Id.* (citing 33 U.S.C. § 1362(11)) (calling effluent limitations the “heart of the CWA’s regulatory power . . .”).

77. *Id.* (citing 33 U.S.C. § 1362(11) (emphasis added)).

78. *Id.* (citing 33 U.S.C. § 1362(11) (emphasis added)).

79. *Id.* (citing 33 U.S.C. § 1362(12)(A)).

80. *Id.* (citing 33 U.S.C. § 1362(12)(A)); the Sixth Circuit’s rejection is also referred to as the “terminal point source” theory. Interpretive Statement on the Application of the Clean Water Act National Pollution Discharge Elimination System Program to Reseases from a Point source to Groundwater, 84 Fed. Reg. 16810, 16814 (Apr. 23, 2019).

81. *Ky. Waterways All.*, 905 F.3d at 936–37.

82. *Id.*; *Tenn. Clean Water Network v. Tenn. Valley Auth.*, 905 F.3d 436, 439 (6th Cir. 2018).

83. The Navigable Waters Protection Rule: Definition of “Waters of the United States,” 85 Fed. Reg. 22,250 (Apr. 21, 2020).

U.S. Supreme Court issued its *County of Maui v. Hawai'i Wildlife Fund (Maui)* opinion, which effectively extended EPA NPDES jurisdiction. The Court accepted the conduit theory and ruled that dischargers who discharge pollutants from a point source into groundwater that then carries the pollutant to navigable waters may be obligated to obtain a NPDES permit.<sup>84</sup>

In *Maui*, the County and the EPA maintained their position that discharges of a pollutant only trigger NPDES liability when the discharge is released into navigable waters *directly* from a point source.<sup>85</sup> They argued that because groundwater is not a point source, any discharge that travels through groundwater before reaching navigable waters is not subject to the NPDES permitting program.<sup>86</sup> Conversely, respondent environmental groups argued that the definition of a discharge of a pollutant—one that comes “from” a point source to navigable waters—should be interpreted to include discharges that reach navigable waters and are *fairly traceable* to a point source.<sup>87</sup> Therefore, respondents posited, as long as the pollutant can be fairly traced from the point source to navigable waters, it is subject to NPDES.<sup>88</sup>

Bearing in mind the parties' competing theories as to what constitutes a discharge “from” a point source, the Court focused on the linguistic meaning of the word “from” within the CWA's definition of “discharge of a pollutant.”<sup>89</sup> Ultimately, the Supreme Court ruled that the CWA requires a permit for the addition of pollutants to groundwater if it is the “functional equivalent” of a direct discharge.<sup>90</sup> In other words, a discharge “from” a point source can include discharges that travel through groundwater before reaching navigable waters.<sup>91</sup> Despite the existence of an intermediate medium, the discharge is still coming “from” the point source.<sup>92</sup> In his concurring opinion, Justice Kavanaugh explained that Justice Scalia's opinion in *Rapanos* informs the Court's decision. Congress's decision to exclude the word “directly” in the definition of a discharge supports a broader reading of the ban on the “addition of any pollutant to navigable waters.”<sup>93</sup>

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84. *Cnty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462, 1476–77 (2020).

85. *Id.* at 1470.

86. *Id.* at 1470, 1473.

87. *Id.* at 1470.

88. *See id.*

89. *Id.*

90. *Id.* at 1476–77.

91. *Id.*

92. *See id.* at 1473–74.

93. *Id.* at 1478 (Kavanaugh, J., concurring).

Similar to the District Court in *Hawai'i Wildlife Fund* and the Fourth Circuit in *Upstate Forever*, the *Maui* Court accepted the conduit theory due to the possibility of dischargers evading NPDES liability by simply sticking a pipe underground and discharging pollutants even just a few inches from navigable waters.<sup>94</sup> To address this concern, the County of Maui contended that dischargers would not be evading liability entirely by putting a pipe underground a few feet from navigable waters.<sup>95</sup> The County argued that while the discharger would not be subject to NPDES under its “directness” theory, the discharger would still be subject to other federal laws that regulate groundwater.<sup>96</sup> Though not mentioned in the decision, during oral arguments, Justice Sotomayor challenged the County of Maui on this position.<sup>97</sup> Justice Sotomayor explained that the differences in the bodies of law that regulate groundwater are that those laws are predominantly remedial.<sup>98</sup> In contrast, the CWA is preventative in nature—“we want to avoid having to clean it up.”<sup>99</sup> Justice Sotomayor suggested that just because groundwater may be regulated federally by another means, under for instance the Comprehensive Environmental Resource Conservation Liability Act (CERCLA), that should not determine whether the CWA can effectively regulate groundwater in its conduit capacity.<sup>100</sup>

Though the Court accepted the conduit theory, it was concerned that the respondents’ “fairly traceable” theory would be impracticable since it could theoretically result in, for example, NPDES applying to a “100-year migration of pollutants through 250 miles of groundwater to a river.”<sup>101</sup> More importantly, the *Maui* majority noted, the “fairly traceable” concept would intrude too heavily on states’ autonomy and roles under the CWA.<sup>102</sup> As noted previously, courts, including the Supreme Court in *Maui*, feel constrained in how far they can interpret NPDES jurisdiction to extend because of the CWA’s cooperative federalism framework. The CWA regulates point source pollution directly through the NPDES program. However, the CWA also encourages states to

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94. *Id.* at 1473, 1475–76; see also *supra* notes 54, 63 and accompanying text.

95. Oral Argument at 21:15, *Cnty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462 (2020) (No. 18-260), <https://www.oyez.org/cases/2019/18-260>.

96. *Id.*

97. *Id.* at 22:53.

98. *Id.* at 22:50.

99. *Id.*

100. *Id.* at 22:40.

101. *Cnty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462, 1471 (2020).

102. *Id.*

develop independent regulatory programs for nonpoint source and groundwater pollution.<sup>103</sup> For these state programs, the EPA plays a limited oversight role by issuing monetary grants and collecting data.<sup>104</sup> Additionally, the Court found persuasive Congress's explicit refusal to grant EPA authority to regulate groundwater.<sup>105</sup> In 1971, Congress considered but did not accept Representative Aspin's proposed amendment to the CWA, which would have extended the CWA's permitting provision to groundwater.<sup>106</sup> Furthermore, Justice Breyer explained in his majority opinion in *Maui*, "Congress was fully aware of the need to address groundwater pollution, but it satisfied that need through a variety of state-specific controls . . . [and therefore] its failure to include groundwater in the general EPA permitting provision was deliberate."<sup>107</sup> In sum, the CWA's cooperative federalism framework and Congress's refusal to regulate groundwater persuaded the Court that the environmental groups' "fairly traceable" theory would stretch the NPDES program beyond its intended scope.<sup>108</sup>

After finding it necessary to restrict EPA's NPDES jurisdiction to some degree, the Court contemplated the acceptable cutoff for when an indirect discharge of a pollutant travels from a point source to navigable waters but should no longer be subject to NPDES. The Supreme Court rejected both the Ninth Circuit's "fairly traceable" test and the County and EPA's directness requirement.<sup>109</sup> The Court reasoned that the County's narrow interpretation of "from" and the environmental groups' broad interpretation of "from" were both too extreme.<sup>110</sup> The Court

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103. For example, the CWA requires each state to "identify those waters within its boundaries for which the effluent limitations [within NPDES permits] are not stringent enough to implement any water quality standard applicable to such waters." 33 U.S.C. § 1313(d)(1)(A). The CWA requires states to compensate for the inadequacy of federal point source regulation with the construction of state-specific total maximum daily load (TMDL) programs. *Id.* at §1313(d)(C).

104. *Cnty. of Maui*, 140 S. Ct. at 1471.

105. *Id.* at 1471–72.

106. Water Pollution Control Legislation-1971 (Proposed Amendments to Existing Legislation): Hearings before the H. C. on Public Works, 92d Cong., 1st Sess., 230 (1971).

107. *Cnty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462, 1472 (2020).

108. *Id.* at 1471–72.

109. *Id.* at 1470–73, 1476 (also noting the EPA's historical practice of limiting NPDES jurisdiction for indirect discharges from point sources to those that have a "physically and temporally direct hydrological connection to surface [waters.]").

110. *Id.* at 1470–71, 1476, 1490 (Alito, J., dissenting) (rejecting respondents' argument that the limiting principle that breaks the chain of causation is proximate cause because "[t]here is no basis for transplanting this concept from the law of torts into the Clean Water Act, and it is unclear what it would mean in that context.").



desired to find a firm line that breaks the chain of causation between a point source and navigable waters and therefore focused its efforts on constructing a limiting principle.<sup>111</sup> To that end, Justice Breyer created the “functional equivalence” rule.<sup>112</sup> A “functional equivalent” happens when a “discharge reaches the same result through roughly similar means.”<sup>113</sup> For example, a discharger needs a permit if a pipe ends just a couple of feet from a navigable water, even if the pollutants travel from the pipe underground or across the land to the navigable water.<sup>114</sup> However, “[i]f the pipe ends 50 miles from navigable waters [emitting] pollutants that travel with groundwater, mix with [other pollutants, and take years to reach the navigable waters], the permitting requirements likely do not apply.”<sup>115</sup>

In the *Mawi* opinion, Justice Breyer set forth a balancing test, including seven potentially relevant factors to consider when determining whether a discharge requires a permit (the relevance of which depend on the particular case at issue):

(1) transit time, (2) distance traveled, (3) the nature of the material through which the pollutant travels, (4) the extent to which the pollutant is diluted or chemically changed as it travels, (5) the amount of pollutant entering the navigable waters relative to the amount of the pollutant that leaves the point source, (6) the manner by or area in which the pollutant enters the navigable waters, (7) the degree to which the pollution (at that point) has maintained its specific identity.<sup>116</sup>

Justice Breyer noted that, in most cases, the two most important factors of this nonexclusive list would be time and distance traveled.<sup>117</sup> The majority opinion provides no further guidance on how to implement the functional equivalent standard. Rather, the Court expressed confidence that the common law process and EPA administrative actions will further refine the analysis.<sup>118</sup>

Justices Thomas, Gorsuch, and Alito dissented. Justices Thomas and Gorsuch reasoned that the most helpful term within

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111. *Id.* at 1476.

112. *Id.*

113. *Id.*

114. *Id.*

115. *Id.*

116. *Id.* at 1476–77.

117. *Id.* at 1477.

118. *Id.*

the definition of a discharge of a pollutant—“any addition of any pollutant to navigable waters from any point source”—is “addition,” and disagreed that “to” and “from” within that definition should be the critical language.<sup>119</sup> When a point source discharges into groundwater, naturally, the discharge is augmenting, or adding to, the groundwater; it is not augmenting the navigable water to which the groundwater flows.<sup>120</sup> To Justices Thomas and Gorsuch, one would not naturally say that a pollutant that is discharged from a point source, travels through groundwater, and enters navigable water is added from the *point source*.<sup>121</sup> Alternatively, the natural presumption is that the pollutant is added to the navigable water from the *groundwater*, which is not a point source.<sup>122</sup>

Finally, in his dissent, Justice Alito argued that the majority constructs a test not grounded in the statutory text.<sup>123</sup> Justice Alito agreed with Justice Thomas and Justice Gorsuch: only direct discharges are subject to NPDES liability.<sup>124</sup> Justice Alito gave two reasons for his narrow reading. First, the CWA generally “treat[s] point-source pollution differently from non-point-source pollution” and, Justice Alito contended, the latter includes all “pollution conveyed by groundwater.”<sup>125</sup> Second, a narrow reading of the statutory text promotes good faith and fair notice to parties, a function expected to accompany a scheme that subjects regulated entities to hefty fines for violations, which the NPDES program does.<sup>126</sup> Justice Alito’s concerns with the functional equivalent test mirror Justice Scalia’s concerns in *Rapanos* with Justice Kennedy’s significant nexus approach to characterizing navigable waters. Justice Alito pointed to the burden on agencies in performing extensive case-by-case studies solely to determine if NPDES will apply for every indirect discharge. Similarly, Justice Scalia wanted to avoid arbitrary and inconsistent application in navigable waters determinations; that is why he proposed a clear-cut connectedness and permanence test for determining if otherwise non-navigable-in-fact waters are navigable under the

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119. *Id.* at 1479 (Thomas, J. dissenting); see 33 U.S.C. § 1362(12)(A).

120. *Id.* at 1479–80 (Thomas, J., dissenting).

121. *Id.* at 1480 (Thomas, J., dissenting).

122. *Id.*

123. *Id.* at 1485 (Alito, J., dissenting).

124. See *id.* at 1485–86 (Alito, J., dissenting).

125. *Id.* at 1488 (Alito, J., dissenting).

126. *Id.* at 1489 (Alito, J., dissenting).

CWA.<sup>127</sup> These concerns about potential arbitrary implementation are understandable and are reinforced by how the functional equivalent standard has been handled by legal authorities post-*Maui*.

#### *D. After Maui*

##### 1. EPA Guidance for Regulators: How to Apply Maui

In January 2021, the EPA issued a guidance memorandum to assist regulated communities and permitting authorities with incorporating the *Maui* functional equivalent analysis into states' assumed NPDES permit program.<sup>128</sup> The memo clarified that the Supreme Court's *Maui* decision does not alter the basic triggering characteristics warranting a NPDES permit—there must be a discharge from a point source that ends up in navigable waters.<sup>129</sup> Significantly, while Justice Breyer proclaimed that in most cases the factors—time and distance traveled—are important to consider, the EPA's guidance states that a critical question is “what happens to the discharged pollutant over that time and distance traveled.”<sup>130</sup> Thus, the EPA suggested that permitting authorities generally supplement time and distance traveled with the pollutant characteristic analysis.<sup>131</sup> As noted below, this part of the EPA's guidance bolsters the need for a *de minimis* transformation standard as a method of detecting functional equivalence.<sup>132</sup>

Additionally, in its discretion to identify additional relevant factors, the EPA created an eighth factor to be used in a functional equivalent analysis: “the design and performance of the system or facility from which the pollutant is released.”<sup>133</sup> In deciding whether to issue a NPDES permit, permitting authorities

127. See *Rapanos v. United States*, 547 U.S. 715, 731, 753–57 (2006).

128. Anna Wilderman (Acting Asst. Admin.), Guidance Memo., Applying the Supreme Court's *County of Maui v. Hawaii Wildlife Fund* Decision in the Clean Water Act Section 402 National Pollutant Discharge Elimination System Permit Program, ENV'T PROT. AGENCY (Jan. 14, 2021) [hereinafter EPA Guidance: Functional Equivalent Test].

129. *Id.* at \*4–5.

130. *Id.* at \*6; see also Memo, The Rescission of the January 2021 Guidance Document, “Applying the Supreme Court's *County of Maui v. Hawaii Wildlife Fund* Decision in the Clean Water Act Section 402 National Pollution Discharge Elimination System Permit Program (Sept. 15, 2021) [hereinafter EPA 2021 Rescission Memo].

131. EPA Guidance: Functional Equivalent Test, *supra* note 128; see also EPA 2021 Rescission Memo, *supra* note 130.

132. See *infra* Part IV.

133. EPA Guidance: Functional Equivalent Test, *supra* note 128, at \*7.

routinely consider a system or facility's engineering design regarding how wastewater is handled before release, and how the facility monitors performance.<sup>134</sup> Thus, the EPA explained, the discharging facility's design can inform a regulator's choice in which *Maui* factors to utilize.<sup>135</sup> For example, when a facility interventionally treats wastewater before it is discharged, or directs its discharge into the ground in a location engineered to slow the transit time to navigable water, a permitter may better understand how the *Maui* factors should be weighed.<sup>136</sup>

Notably, the EPA rescinded its guidance in September of 2021.<sup>137</sup> In response to President Biden's Executive Order 13990,<sup>138</sup> the EPA reviewed its nonbinding policy and deemed it to be insufficient protection for public health and the environment.<sup>139</sup> The EPA's reasons for rescission included procedural and substantive deficiencies—the previous administration's lack of interagency cooperation and deliberation and that “the [EPA-created] additional [eighth] factor introduces an element of intent that is not reflected in or consistent with the *County of Maui* decision.”<sup>140</sup> Moreover, the “design and performance of the system” factor prompted concerns about industry skirting NPDES requirements simply by having the right equipment.<sup>141</sup> EPA's rescission memo also made clear that the *County of Maui* case in no way suggests that the existence of a state groundwater protection program impacts the need for a NPDES permit under the functional equivalent standard.<sup>142</sup> Though the memo rescinded its previous guidance in full, the rescission memo focuses on the need to measure functional equivalence of the actual discharge (not the equipment used to discharge). Thus, the EPA still seemingly supports the ostensibly nonproblematic position that it

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134. *Id.*

135. *Id.* at \*7–8.

136. *Id.*

137. EPA 2021 Rescission Memo, *supra* note 130.

138. Soon after entering office as president, Biden signed Executive Order 13990 “on Protecting the Public Health and the Environment and Restoring Science to Tackle the Climate Crisis,” which required all federal agencies to review and rescind any agency action taken under the Trump administration which would be inconsistent with Biden's environmental policies. Exec. Order No. 13990, 86 Fed. Reg. 7037 (Jan. 25, 2021).

139. EPA 2021 Rescission Memo, *supra* note 130.

140. *Id.*

141. See *EPA Rescinds Maui Guidance, Raises New Questions on NPDES Implementation*, NACWA (Sept. 22, 2021), <https://www.nacwa.org/news-publications/clean-water-current-archives/clean-water-current/2021/09/22/epa-rescinds-maui-guidance-raises-new-questions-on-npdes-implementation>.

142. EPA 2021 Rescission Memo, *supra* note 130.

took in the January 2021 guidance—the pollutant metamorphosis over time is the central feature of a functional equivalence analysis. This is further supported by the new memo’s concern about an intent element not matching the NPDES program’s purpose.<sup>143</sup>

## 2. The First Court Application of the Maui Standard

The Supreme Court in *Maui* vacated the Ninth Circuit’s opinion and remanded the case back to the district court to apply the new functional equivalent standard. On remand, in the “functional equivalent” standard’s debut, the District Court for the District of Hawaii granted summary judgment in favor of the plaintiff environmental groups, finding that the County of Maui must obtain a NPDES permit for its wastewater discharges into the Pacific Ocean.<sup>144</sup> In its analysis, the court considered the seven factors set forth by Justice Breyer. But the court also added a factor: the volume of wastewater reaching navigable water.<sup>145</sup> The court reasoned that in the same way that a percentage of pollutant reaching navigable water might be a factor, so too could absolute volume.<sup>146</sup> The court dubbed this new factor the “raw-volume-of-pollutant factor.”<sup>147</sup> Ultimately, in balancing the factors, the court decided that the “massive” volume of pollution caused by the County—3 to 5 million gallons of wastewater per day—tipped the scale.<sup>148</sup>

Interestingly, the court declined to adopt the EPA’s suggested system design and performance factor, explaining that it implicitly considered system design when it considered the pathway of the wastewater discharges to the Pacific Ocean—the system was designed to inject wastewater into wells that would then flow through the aquifer to the ocean.<sup>149</sup> Thus, the court found that the system design and performance factor “add[ed] nothing” to its functional equivalence analysis.<sup>150</sup>

The EPA’s rescinded guidance and the district court opinion

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143. *Id.*

144. *Hawai‘i Wildlife Fund v. Cnty. of Maui*, No. CV 12-00198 SOM/KJM, 2021 WL 3160428 at \*18 (D. Haw. July 26, 2021).

145. *Id.* at \*16–17.

146. *Id.* at \*17.

147. *Id.* at \*18.

148. *Id.* at \*17.

149. *Id.* at \*16, 18.

150. *Id.* at \*16.

are early manifestations of the harm that Justice Scalia in *Rapanos* and Justice Alito in *Maui* warned against: the inconsistent application of relevant factors. With every instance of a NPDES issuing entity or reviewing court individually constructing a new factor that tips the scales one way or another, or disparately balancing the proposed factors, the potential for uncertainty climbs. Still, a more individualized inquiry into whether indirect discharges must obtain a NPDES permit is necessary to uphold the statute's purpose and allocate point source discharge responsibility appropriately. Though a case-by-case analysis is prudent, an effective method should be employed to consistently test for functional equivalence in every instance—a method that respects the EPA's "site-specific, science-based approach."<sup>146</sup> The "de minimis transformation" standard, set forth below, does just that.

#### IV. RESOLUTION: THE "DE MINIMIS TRANSFORMATION" TEST

##### *A. The Supreme Court Correctly Accepted the Conduit Theory*

Reading the CWA in light of its purposes, the *Maui* Court correctly decided that groundwater serving as a conduit falls within federal NPDES jurisdiction. Accordingly, the CWA's text and scheme do not support a rejection of the conduit theory. Moreover, to reject the conduit theory would permit easy evasion of Section 402 of the CWA (the NPDES program).

First, the text of the CWA does not support rejecting the conduit theory. Justices Thomas and Gorsuch prefer to focus on the word "addition" and its relationship to "to" and "from" within the CWA's definition of a discharge to determine NPDES liability.<sup>152</sup> Justice Thomas explained that together, these operative words "exclude[] anything other than a direct discharge."<sup>153</sup> In his dissent, Thomas stated, "one would not naturally say that the pollutants are added to the navigable waters from the original point source" if they travel through groundwater first.<sup>154</sup> However, this reasoning is lacking. Without

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146. EPA 2021 Rescission Memo, *supra* note 130.

152. *Cnty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462, 1479–80 (2020) (Thomas, J., dissenting) (citing 33 U.S.C. § 1362(12)(A)).

153. *Id.* at 1479–80 (Thomas, J., dissenting).

154. *Id.* at 1480 (Thomas, J., dissenting).

the term “directly to” within the definition of a discharge, there is no strong textual basis to exclude indirect discharges from NPDES jurisdiction.<sup>155</sup> Suppose Congress meant for only direct discharges to fall within NPDES; in that case, it could have explicitly stated that the discharge of any pollutant is defined as “the addition of any pollutant [*directly*] to navigable waters from any point source.”<sup>156</sup>

Second, practically speaking, an indirect discharge of a pollutant to navigable waters is still an addition of pollutants to navigable waters and, therefore, conceptually should be subject to NPDES requirements. Admittedly, Congress constructed distinct point-source and nonpoint source schemes. However, a discharger should not enjoy exemption from point-source permitting requirements simply because their discharge does not flow directly into a navigable water. Despite the “pathway through which the discharge reaches a navigable water” being indirect, a discharge into a conduit still meets all other requirements of a point source discharge and should contribute its fair share to ameliorating water quality impairment.<sup>157</sup>

*B. Justice Breyer’s “Functional Equivalent”  
Factors are Problematic*

Even though the Court reached the correct result in accepting the conduit theory, the factors listed by Justice Breyer in *Maui* for determining a “functional equivalent” of a direct discharge have produced mixed reactions. On the one hand, applying the factors in a case-specific inquiry will enable regulators and the regulated community to collaborate on permitting decisions. On the other hand, the “functional equivalent” test is a nuanced approach that inherently leaves some private property owners uncertain as to whether they need a permit. Moreover, in his dissent, Justice Alito criticized the majority’s test because it gives no guidance to lower courts and “invites arbitrary and inconsistent application.”<sup>158</sup> Consequently, the fact-specific analysis could provide a mechanism

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155. 33 U.S.C. § 1362(12)(A).

156. *See id.* §§ 1311(a), 1362(12)(A).

157. Adler & House, *supra* note 53, at 91–92 (These sources “discharge pollutants through discrete, readily identifiable conveyances that can be monitored and assessed for compliance with applicable treatment standards. Their waste stream is collected and channelized in one place, making it amenable to the same kinds of treatment methods available to other point sources.”).

158. *Cnty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462, 1483 (2020) (Alito, J., dissenting).

by which citizens' groups may easily challenge permitting decisions with which they are unhappy, thereby increasing litigation.<sup>159</sup>

*C. A Focus on the Term "Pollutant"  
in the CWA*

As illustrated, the term "discharge of a pollutant," defined as "any addition of any pollutant to navigable waters from any point source," has been subject to varying interpretations by courts that have attempted to resolve whether indirect discharges are subject to NPDES.<sup>160</sup> Much CWA NPDES jurisprudence spotlights the terms "addition," "to," and "from" a point source.<sup>161</sup> In contrast, this Note recommends the analysis for where to draw the line that breaks the chain of causation for indirect discharges should instead be focused on the term "pollutant." Much of the dispute regarding what constitutes a discharge from a point source to navigable waters centers on individual or "atomized" sections of the CWA with an eye toward the overall purposes of maintaining the integrity of the nation's waters and states' rights.<sup>162</sup> However, the meaning of the words "to," "from," and "addition," as shown through much debate, cannot be correctly decided out of context. The statutory base that provides the necessary context for deciphering these meanings is Section 301(a) of the CWA, which provides: "Except as in compliance with . . . this section and section[] . . . 402 . . . the discharge of *any pollutant* by *any person* shall be unlawful."<sup>163</sup> This blanket ban on discharges of *any pollutant* by *any person* provides an exception for permitted discharges under other sections of the Act, including Section 402. Section 402, which describes the NPDES permitting scheme, allows discharges of *pollutants* from a point source to navigable

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159. See Megan A. Elliott & Bryan P. Franey, *New Clean Water Act 'Functional Equivalent' for Indirect Discharge Permitting*, THE LEGAL INTELLIGENCER (May 28, 2020, 12:02 PM), <https://www.law.com/thelegalintelligencer/2020/05/28/new-clean-water-act-functional-equivalent-for-indirect-discharge-permitting/?slreturn=20200631170959>; see also Robert Barnes, *Supreme Court rejects Trump administration's view on key aspect of Clean Water Act*, WASH. POST (Apr. 23, 2020, 5:20 PM), [https://www.washingtonpost.com/politics/courts\\_law/supreme-court-rejects-trump-administrations-view-on-key-aspect-of-clean-water-act/2020/04/23/a826b828-8570-11ea-a3eb-e9fc93160703\\_story.html](https://www.washingtonpost.com/politics/courts_law/supreme-court-rejects-trump-administrations-view-on-key-aspect-of-clean-water-act/2020/04/23/a826b828-8570-11ea-a3eb-e9fc93160703_story.html).

160. See 33 U.S.C. § 1362(12)(A); see Adler & House, *supra* note 53, at 61–67.

161. Adler & House, *supra* note 53, at 61–67.

162. Adler & House, *supra* note 53, at 48 ("Focusing only on discrete, isolated words, in turn, can cause courts to ask and answer the wrong questions.").

163. 33 U.S.C. § 1311(a) (emphasis added).



waters provided the discharger obtains a permit.<sup>164</sup> The CWA then defines discharge of a pollutant as “any addition of any *pollutant* to navigable waters from any point source.”<sup>165</sup>

Instead of giving the indefinite terms “from” and “to” weight in determining the limiting principle for indirect discharges, the Supreme Court should have read the CWA in light of its equitable-focused Section 402 scheme. As noted, the purpose of the CWA is to protect the integrity of our nation’s waters while balancing federalism concerns.<sup>166</sup> However, the purpose of the NPDES program itself is to prevent pollution from entering our nation’s waters and meet applicable water quality standards.<sup>167</sup> Consequently, as designed, the NPDES program is meant to strike an equitable allocation of effluent limitations for all point sources that contribute to water quality impairment and degradation. Beyond that, if point-source discharges comply with technology-based effluent controls, but still a water body is not meeting its water quality standards goals, the CWA requires “any more stringent limitation, including those necessary to meet water quality standards . . . or required to implement any applicable water quality standard established pursuant to [the CWA].”<sup>168</sup> This shows that though “to” and “from” are meaningful prepositions in deciding what a functional equivalent of a direct discharge is, the term that ties those prepositions together is the subject of the statute itself, pollutants.<sup>169</sup>

#### *D. Defining and Applying the “De Minimis Transformation” Test*

This Note suggests that the “de minimis transformation” test be used as an alternative to Justice Breyer’s functional equivalent factors. Considering the suggested focus on the term “pollutant,” the de minimis transformation test condenses Justice Breyer’s proposed list of seven factors and employs only two, the fifth and seventh factors.<sup>170</sup> The de minimis transformation inquiry considers “the amount of pollutant entering the navigable waters

164. *Id.* § 1342(a).

165. *Id.* § 1362(12)(A) (emphasis added).

166. *Id.* § 1251(a).

167. *See id.* § 1342(a)(1)-(2).

168. *Id.* § 1311(b)(1)(C); *see also id.* §§ 1312, 1313(d)(1)(A), 1313(d)(1)(C), 1313(e)(3)(A),(F).

169. *See id.* § 1362(12)(A).

170. *See Cnty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462, 1476–77 (2020).

relative to the amount of the pollutant that leaves the point source,” and “the degree to which the pollution (at that point) has maintained its specific identity.”<sup>171</sup> Moreover, the test to help determine whether an indirect discharge is the functional equivalent of a direct discharge should be a set ratio, or de minimis transformation. This ratio should be the amount of pollutant entering the navigable water relative to the amount of pollutant that leaves the point source and the extent to which the pollutant is diluted or chemically changed. This proposal posits that a quantified minimum amount of transformation of pollutants between the time of discharge to the time the discharge reaches navigable waters should trigger federal jurisdiction.

The EPA already designates acceptable levels of pollutants and nutrients parameters for effluents for each NPDES permit.<sup>172</sup> Under the proposed de minimis transformation rule, the EPA would be charged with using its expertise to construct a minimum level of “transformation” that pollutants or nutrients may undergo when they travel through the conduit before reaching navigable water. This minimum percentage of transformation can be adjusted based on the type of discharge. With minimal guidance as to how this threshold number should be calculated, the EPA, by engaging in rulemaking, may give regulators, regulated entities, and other stakeholders an opportunity to help develop this percentage or threshold quantities for various pollutants.

The de minimis transformation test should apply only when the source of the effluent is a point source.<sup>173</sup> Furthermore, it should apply in the case of indirect discharges that travel through a conduit such as groundwater and that carry the effluent from a point source to navigable water.<sup>174</sup> Additionally, regulators may use a dye study to determine the contaminants’ or pollutants’ transformation from the point source to the navigable water. The “Tracer Dye Study” ordered by the EPA, Hawai’i Department of Health, and the Army Corps in *Maui* is an example of how to perform a de minimis transformation study in practice.<sup>175</sup>

To this end, the Supreme Court could take up the issue in a future case and clarify the desired interpretation of functional equivalence. This would likely transpire if regulators begin applying the de minimis transformation test by way of focusing on

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171. *Id.*

172. 33 U.S.C. § 1342.

173. See EPA Guidance: Functional Equivalent Test, *supra* note 128, at \*4–5.

174. See *id.*

175. *Haw. Wildlife Fund v. Cnty. of Maui*, 886 F.3d 737, 742–43 (9th Cir. 2018).

the fifth and seventh factors of Justice Breyer’s seven-factor approach, rather than applying all factors. In this case, regulated entities might begin challenging this practice. In the situation where the Supreme Court has the opportunity to readdress the issue, Justice Breyer’s suggested focus on time and distance, in addition to the other factors, should be overruled and replaced with a focus on de minimis transformation. In the meantime, the de minimis transformation standard should be the interpretation of the functional equivalent test used by regulators.

*E. Brief Note on  
Quantitative Tracer Dye Studies*

Two methods to measure hydrological connectivity and pollutant tracing are quantitative and qualitative tracing. Qualitative tracing measures “point-to-point connectivity,” while quantitative tracing measures time of travel and concentrations of the fluorescent dyes at the discharge and sampling points.<sup>176</sup> For this reason, quantitative tracing is much more labor-intensive than qualitative tracing.<sup>177</sup> Scientists conduct quantitative dye studies by releasing a concentrated form of organic fluorescent dye (a tracer) at injection points and then sampling recovery points.<sup>178</sup> The mass of tracer recovered from the recovery point can then be used to measure the percentage of tracer recovered by dividing the “mass recovered by the mass injected” at the injection point.<sup>179</sup> A breakthrough curve is the graphical method of displaying this data over time.<sup>180</sup> Types of tracers include Eosine-Y (Acid Red 87), Rhodamine WT (Acid Red 388), Sulforhodamine B (Acid Red 52), and Tinopal CBS-X (Fabric Brightener 351).<sup>181</sup>

In the *Maui* case, scientists used a conceptual model called the Tracer Test Numeric Model, which used “reasonable hydraulic parameter values to” measure anticipated flow and direction to

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176. James C. Currens, *Kentucky Geological Survey Procedures for Groundwater Tracing Using Fluorescent Dyes*, XII KENTUCKY GEOLOGICAL SURVEY INFORMATION CIRCULAR, 1–2, 6 (2013).

177. *Id.* at 1–2.

178. *Id.* at 1–2; see C.R. Glenn, et al., *Lahaina Groundwater Tracer Study*, Final Report, prepared for the State of Hawaii Dep’t of Health, the U.S. Env’t. Prot. Agency, and the U.S. Army Eng’r Research and Dev. Ctr., ES-6-ES-7, 4–14 (2013).

179. Currens, *supra* note 176, at 15–16.

180. Glenn, et al., *supra* note 178, at 4–14 (“A breakthrough curve (BTC) is a graph [that is] used to evaluate the time of first dye arrival, dispersion characteristics of the aquifer, average time of travel, and when combined with water flux, the mass of the tracer that can be accounted for.”).

181. Currens, *supra* note 176, at 6.

design the tracer test.<sup>182</sup> Researchers conducted a long-term study, accounting for pre-fluorescent release monitoring at well injection sites and continual monitoring at submarine spring sampling locations (called “Seep Groups”).<sup>183</sup> Scientists calibrated the fluorometer before analyzing the samples.<sup>184</sup> In total, the scientists collected nearly 1,200 samples and analyzed the data from measuring instruments.<sup>185</sup> They were able to trace Fluorescein tracer dye back to two wells from the Lahaina Wastewater Reclamation Facility.<sup>186</sup> They determined that it took the dye eighty-four days to arrive at the submarine spring site sampling locations and more than nine months to reach concentration peak.<sup>187</sup> In all, researchers “estimated that once the tracer dye break through curve ha[d] reached completion, that [sixty-four] percent of dye injected into [two of the wells were] fully discharged at the submarine spring areas.”<sup>188</sup> From this, researchers concluded that “[sixty-four] percent of the treated wastewater injected into these wells currently discharges from the submarine spring areas.”<sup>189</sup>

## V. POLICY RATIONALES

The *de minimis* transformation test is superior to the environmental groups respondents’ “fairly traceable” theory and the *Maui* Court’s functional equivalent factors because it provides concrete margins, rather than ethereal limits, and better advances important policy goals underlying the CWA. The “fairly traceable” test suggested by the Ninth Circuit in *Hawai’i Wildlife Fund* would find liability when: 1) there is a discharge of pollutants from a point source, 2) “the pollutants are fairly traceable from the point source to a navigable water such that the discharge is the functional equivalent of a discharge into the navigable water, and [3] the pollutant levels reaching navigable water are more than *de minimis*.”<sup>190</sup> Respondents in *Maui* attempted to expound on this holding and suggested that *proximate cause*, with little

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182. Glenn, et al., *supra* note 178, at 5-1.

183. *Id.* at 2-3-2-4.

184. *Id.* at 2-5.

185. *Id.* at 2-9.

186. *Id.* at ES-1.

187. *Id.*

188. *Id.* at ES-2-ES-3.

189. *Id.*

190. *Haw. Wildlife Fund v. Cnty. of Maui*, 886 F.3d 737, 749 (9th Cir. 2018) (emphasis in original).

explanation as to what that means, should be used to find whether a discharge is fairly traceable to the point source.<sup>191</sup> In contrast, the de minimis transformation test sets a definite threshold percentage for determining if NPDES liability attaches to indirect discharges that reach navigable waters. Furthermore, the de minimis transformation standard improves the *Maui* Court’s functional equivalent test by streamlining and collapsing the factors listed by Justice Breyer in *Maui*.

The de minimis transformation standard resembles the Ninth Circuit’s “fairly traceable” test because it focuses on traceability and the quantity of pollutants that reach navigable waters. However, the de minimis transformation test establishes a threshold percentage to determine where the chain of causation should be sustained and where “the connection between a point source and a navigable water is too tenuous to support liability.”<sup>192</sup> Moreover, the de minimis transformation test does not hang its hat on something so irresolute as proximate cause. For NPDES liability to attach, there must be a confirmed link between the point source and the navigable water, as would be established through dye tests.<sup>193</sup>

Additionally, Justice Breyer’s proposed factors—transit time, distance traveled, nature of the material, and the manner by or area in which the pollutant enters the navigable water—are unnecessary with a de minimis transformation standard. Inherently, if the pollutant travels a short distance, it will likely remain intact, and if it travels a long distance, it will probably end up more diluted. Therefore, focusing on the fifth and seventh factors, “the amount of pollutant [in] the navigable waters relative to the amount of the pollutant that [left] the point source,” and “the degree to which the pollution has maintained its specific identity” will address the others that Justice Breyer listed.<sup>194</sup> Certain contaminants may be more likely to dissipate or dilute more quickly than others. Under the de minimis transformation standard, NPDES liability does not attach to those pollutants that dissipate quickly and do not meet the threshold percentage when reaching navigable water. This is where EPA’s calculations for

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191. *Cnty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462, 1470 (2020).

192. *Id.* at 1469.

193. This is supported and emphasized by the EPA in its January 2021 guidance memorandum. The EPA clarified that the Supreme Court’s *Maui* decision does not alter the basic triggers of NPDES requirements—there must be an actual discharge from a point source, and the discharge must end up in navigable waters. See EPA Guidance: Functional Equivalent Test, *supra* note 128, at \*4–5.

194. *Cnty. of Maui*, 140 S. Ct. at 1476–77.

specific contaminants play a crucial role. EPA's technical expertise is vital to establish which threshold percentages are appropriate for de minimis transformation, taking into account the specific characteristics of various contaminants.

*A. The "De Minimis Transformation" Standard Reduces the Likelihood of Inconsistent or Arbitrary Application*

Justice Breyer listed seven nonexclusive factors to be used in determining whether an indirect discharge is the functional equivalent of a direct discharge. However, Breyer did not explain how regulators should consider the factors—or any additional relevant factors—on balance, except that time and distance traveled should be the predominant factors. Justice Alito justifiably criticized the factor-based approach for this reason. Alito warned that regulators may subjectively apply the factors and reviewing courts may attempt to narrow or extend NPDES jurisdiction, depending on their interpretation of the factors.<sup>195</sup> To Alito, these inconsistent or arbitrary applications of the test are objectively unfair to property owners. Individuals or entities who may be subject to NPDES liability will not know whether they should obtain a permit until regulators take steps to put potentially liable parties on notice of their obligations.<sup>196</sup> Furthermore, the possibility for inconsistent or arbitrary applications exposes regulators' decisions to potential litigation.

Aside from Justice Breyer's position that time and distance traveled should be the most important factors in most cases, there is little guidance for regulators to determine how to apply the factors. For this reason, this Note suggests an alternative approach to the functional equivalent factors: the de minimis transformation test will only require the EPA to determine a threshold percentage for various pollutants and nutrients that will apply across the board. Regardless of the material through which the contaminant travels or the time and distance traveled, a fixed percentage will ensure that those who face potential liability have a concrete answer to what standard regulators will apply in determining NPDES liability for indirect discharges. Instead of

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195. *See id.* at 1483 (Alito, J., dissenting).

196. *Id.* ("Entities like water treatment authorities that need to know whether they must get a permit are left to guess how this nebulous standard will be applied. Regulators are given the discretion . . . to make of this standard what they will." Furthermore, Alito believes the majority neglects reviewing courts by effectively saying, "That's your problem. Muddle through as best you can.").

scrapping Justice Breyer's efforts in *Maui* altogether, the de minimis transformation test will inherently balance Breyer's proposed factors when analyzing if a discharge that travels through a conduit should trigger the need for a NPDES permit since these factors and a de minimis threshold might oftentimes reach the same result.

Comparatively, applying a threshold percentage under the de minimis transformation standard should theoretically result in less litigation. If the EPA issues a rule to explain the de minimis transformation test, all lower-level agency officials will be required to follow the threshold ratios. Therefore, entities could not argue that regulators apply the standard arbitrarily or inconsistently. However, as with any final agency action, entities could still challenge that agency rule as arbitrary and capricious.<sup>197</sup>

*B. Giving Effect to the Term "Pollutant"  
Better Effectuates the Goals of the CWA*

Within the definition of "discharge of a pollutant," or "any addition of any pollutant to navigable waters from any point source," the operative term should be "pollutant," which can function as a limiting principle to determine whether indirect discharges are subject to NPDES liability.<sup>198</sup> To ensure the NPDES program achieves fulfillment, some dischargers who discharge pollutants that take an indirect path to navigable waters must share the burden of mitigation, since theoretically, they may be contributing to water quality impairment just as much as, or possibly even more than their more direct counterparts.

This section exposes the inadequacies in Justice Breyer's functional equivalent test as a means of achieving the abovementioned equitable allocation scheme that Congress intended for the NPDES program. Justice Breyer's focus on time and distance traveled as a limiting principle could result in contaminants from a point source reaching navigable water in their fullest, or nearly fullest, form years later and miles away. In other words, under the *Maui* functional equivalent test, as described by Justice Breyer, this hypothetical discharge may escape NPDES jurisdiction simply because of temporal and physical distance. As a result, Breyer's functional equivalent factors applied as a limiting principle will allow some dischargers

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197. 5 U.S.C. §§ 704, 706.

198. 33 U.S.C. § 1362(12)(A) (emphasis added).

to freeride while more direct links are forced to pick up the slack. For example, consider a discharger that discharges pollutants from a point source into groundwater that takes many years to reach navigable waters, but wherein the contaminant reaches navigable waters in ultimately the same form as when it left the point source. This discharger may escape NPDES requirements simply because of the contaminant's or the conveyance's slow-moving nature. Once the pollutant reaches navigable water, it still degrades the quality of navigable waters, but the discharger is not held accountable, at least not under the CWA. To compensate, the EPA or state administrators may place stricter effluent limitations on other point-source dischargers with more direct links because the pollutant travels for less time or a lesser distance.

In his dissent, Justice Thomas explained that the term "addition," which can be defined as augment, should help determine if a discharge is subject to NPDES.<sup>199</sup> This reasoning is unhelpful because indirect discharges may still augment the quantities of pollutants in navigable waters. Alternatively, a more useful indication of an indirect discharge's effect on navigable waters is the term "pollutant." When it reaches navigable water, the pollutants' composition demonstrates the extent to which the navigable water is actually affected by the discharge. Moreover, suppose a certain amount of the original pollutant from a point-source discharge makes its way to navigable water; in that case, the transported pollutant will inevitably augment the navigable water with the pollutant, but the augmentation's detrimental effect is what the CWA aims to address.

Unlike the majority and dissent in *Maui*, this Note does not extract an answer to the conduit issue from one place in the statute (the definition of a discharge). In contrast, this Note draws its solution from a term that appears in many places within the CWA and the NPDES scheme, "pollutant." Without a focus on the term "pollutant," the equitable allocation scheme within the CWA may not be achieved. "Pollutant" puts the other relevant terms "addition," "to," and "from" into context as to the appropriate limiting principle for indirect discharges. This focus better respects the purposes and design of the CWA.

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199. See *Cnty. of Maui*, 140 S. Ct. at 1479 (Thomas, J., dissenting).



*C. Traditional Nonpoint Source Pollution  
May Now be Considered Point Source Pollution*

As noted previously, much of the contention regarding the interpretation of the jurisdictional scope of the NPDES program is that Congress refused to give the federal government full authority in regulating groundwater and nonpoint source pollution. The CWA does not define a nonpoint source. Rather, it is inferred that a nonpoint source is any source that is not a point source.<sup>200</sup> Congress left nonpoint source pollution regulation to the states, but envisioned a scheme wherein the EPA assists states in facilitating nonpoint source regulation through incentives such as EPA grants and technical assistance.<sup>201</sup> Notably, Congress explicitly excluded nonpoint sources and groundwater regulation from the NPDES program. A concern with the functional equivalent test and the de minimis transformation standard is that these analyses may expose what are traditionally characterized as nonpoint sources to NPDES liability.<sup>202</sup>

Nonpoint sources are responsible for a substantial proportion of water pollution.<sup>203</sup> For instance, nonpoint sources are estimated to account for “sixty-five to seventy-five percent of the pollution in the nation’s most polluted waters.”<sup>204</sup> Historically, environmentalists have fought an uphill battle for holding nonpoint source polluters accountable because, by their very nature, nonpoint sources are not traceable to the pollution they create. An important example of nonpoint sources that contribute to water pollution, but have thus far escaped meaningful regulation, is septic systems. Significantly,

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200. *Polluted Runoff: Nonpoint Source Pollution*, ENV’T PROT. AGENCY, [https://19january2017snapshot.epa.gov/nps/what-nonpoint-source\\_.html#:~:text=Nonpoint%20source%20pollution%20can%20include%3A&text=Sediment%20from%20improperly%20managed%20construction,wastes%20and%20faulty%20septic%20systems](https://19january2017snapshot.epa.gov/nps/what-nonpoint-source_.html#:~:text=Nonpoint%20source%20pollution%20can%20include%3A&text=Sediment%20from%20improperly%20managed%20construction,wastes%20and%20faulty%20septic%20systems) (last visited Dec. 14, 2020).

201. 33 U.S.C. § 1329(f) (“Upon request of a State, the Administrator may provide technical assistance to such State in developing a management program approved under subsection (b) of this section for those portions of the navigable waters requested by such State.”).

202. See Oral Argument at 34:50, *Cnty. of Maui*, 140 S. Ct. (2020)(No. 18-260), <https://www.oyez.org/cases/2019/18-260> (Justice Alito posed the question in oral arguments: “[L]et’s take an example of the ordinary family out in the country that has a septic tank, and [they get a] building permit that’s required [by that municipality]. And then it turns out [ten years later] . . . that some things are leaching out of the septic tank . . . into [navigable waters]. So, they would be violating the [CWA] and subject to all the penalties [for that]?”).

203. See David Zaring, *Agriculture, Nonpoint Source Pollution, and Regulatory Control: The Clean Water Act’s Bleak Present and Future*, 20 HARV. ENV’T. L. REV. 515, 517 (1996).

204. *Id.*

the *Mau*i opinion opened the door for challenges to unmaintained septic systems as an indirect discharge of point source pollution.

In Florida, surficial aquifers, or underground layers of porous rock that hold water,<sup>205</sup> are highly transmissive, which may result in seepage of pollutants from septic tanks, stormwater ponds, or underground storage tanks to groundwater. This seepage may travel through groundwater or aquifers to offsite surface waters.<sup>206</sup> Consequently, after *Mau*i's acceptance of the conduit theory, there is the potential that septic tank owners and those who have storage tanks on their property will be liable under the NPDES program. Septic tanks can be considered point sources because they are underground "discernible, confined and discrete conveyance[s] . . . from which pollutants are or may be discharged."<sup>207</sup> Though individual septic tank owners have never been subject to NPDES requirements, the *Mau*i rule may require some of these owners to obtain a permit, depending on how the functional equivalent test is applied. Similarly, the de minimis transformation standard might also require some individual owners to obtain a NPDES permit because of the potential of septic tank effluent to leach into the groundwater system and the effluent's ability to maintain its composition when it reaches navigable waters.<sup>208</sup> Though unprecedented, this should not necessarily be considered an unfair result of the *Mau*i decision.

Pollution from septic systems primarily results from improperly treated sewage that releases bacteria, viruses, and chemicals into groundwater, and eventually, surface waters.<sup>209</sup>

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205. *Groundwater Modeling*, S. FLA. WATER MGMT. DIST., <https://www.sfwmd.gov/science-data/gw-modeling> (last visited Dec. 14, 2020).

206. See WESLEY L. MILLER, U.S. GEOLOGICAL SURV., PALM BEACH CNTY., No. 91-4175, HYDROGEOLOGY AND MIGRATION OF SEPTIC-TANK EFFLUENT IN THE SURFICIAL AQUIFER SYSTEM IN THE NORTHERN MIDLANDS AREA, PALM BEACH COUNTY, FLORIDA 1 (1992) ("The water table in the northern Midlands area is seldom more than 5 feet below land surface . . . [and] [t]ests at three septic-tank sites showed traces of effluent in ground water (38-92 feet from the septic-tank outlets) . . .").

207. 33 U.S.C. § 1362(14).

208. See Daniel Strain, *Stanford scientists confirm that polluted groundwater flows from coastal septic systems to the sea*, STANFORD NEWS (May 20, 2010), <https://news.stanford.edu/news/2010/may/septic-wastewater-sea-052010.html> ("Stanford University researchers . . . tracked a plume of polluted groundwater from a septic system to one of . . . California's top recreational beaches.").

209. *Why Maintain Your Septic System*, ENV'T PROT. AGENCY, <https://www.epa.gov/septic/why-maintain-your-septic-system> (last visited Dec. 14, 2020); see also *Sources of water pollution*, ST. JOHNS RIVER WATER MGMT. DIST., <https://www.sjrwmd.com/education/water-pollution/#septic-tanks> (last visited Dec. 14, 2020) ("A septic system that is not properly located, designed, installed or maintained can allow liquid wastes to pollute nearby surface waters and groundwater. Septic tank systems can fail when the drainfield does not dispose of sewage as rapidly as it is being added to the system.").

Many septic systems remain unregulated, and therefore owners are not incentivized to perform routine inspections that can cost between \$250 and \$500 every three to five years to ensure the system is functioning correctly.<sup>210</sup> Though some states have passed legislation requiring inspections for septic systems on a regular basis or when property is transferred, this trend is not widespread.<sup>211</sup> For this reason, a national program such as NPDES may help mitigate the potential harm to the environment and public health caused by unmaintained septic systems. Furthermore, the *de minimis* transformation standard may enhance states' abilities to meet the CWA's total maximum daily load (TMDL) objectives. Under Section 303(d), states must stipulate total maximum daily loads, which can be allocated between point sources and nonpoint sources, if necessary to attain water quality standards when traditional point source regulation is inadequate.<sup>212</sup> Together, the CWA's TMDL section and the NPDES program's equitable allocation scheme justify extending NPDES to at least some septic systems that release pollutants into groundwater when the pollutants reach navigable waters minimally transformed. These provisions within the CWA form a piece of legislation aimed at holding sources of navigable water pollution accountable, which the *de minimis* transformation standard will accomplish.

## VI. COUNTERARGUMENTS

### A. *The "De Minimis Transformation" Standard Burdens Private Landowners*

Ostensibly, federal regulation of discharges into groundwater will result in many more landowners being subject to NPDES jurisdiction. Thus, more entities and individuals may be regulated

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210. Env't Prot. Agency, *supra* note 200.

211. For example, Iowa requires "every home or building, served by a septic system, have that septic system inspected prior to the sale or deed transfer . . ." Iowa Admin. Code r. 567-69.2(1). In contrast, Connecticut, Pennsylvania, and Wisconsin leave septic system regulation to municipalities but require municipalities to adopt septic maintenance plans with certain requirements, not including inspection requirements. See Grenetta Thomassey & Jay Dutcher, *State Septic Code Examples*, WATERSHED COUNCIL (July 5, 2017), [https://www.watershedcouncil.org/uploads/7/2/5/1/7251350/appendix\\_a\\_-\\_state\\_septic\\_code\\_examples.pdf](https://www.watershedcouncil.org/uploads/7/2/5/1/7251350/appendix_a_-_state_septic_code_examples.pdf). Notably, the Florida legislature passed SB 550 in 2010, which would have required all septic tanks in the state be inspected every five years. When Governor Rick Scott took office in 2012, he and Rep. Matt Gaetz spearheaded the effort to repeal SB 550, and Florida has made no further inspection requirements since. See S. 550, 2010 Leg. Sess. (Fla. 2010) (enacted); *but see* H.R. 999, 2012 Leg. Sess. (Fla. 2012) (enacted).

212. 33 U.S.C. § 1313(d)(1)(A),(C).

at both the state and federal levels. For instance, as illustrated above, under both the *Maui* functional equivalent factors and the de minimis transformation approach, septic tank and storage tank owners may now fall under the purview of the NPDES program.

As we become more scientifically and technologically capable, the interconnectedness of hydrological systems become clearer.<sup>213</sup> Because discharges from sources traditionally characterized as nonpoint sources are now becoming easier to trace back to their source, it may be time for the federal government to step in and begin regulating these virtually immune sources of pollution. Accordingly, EPA has the authority to equitably administer this expansion of previously unregulated territory. For example, the EPA may issue general permits for septic tank owners that impose less severe penalties than those imposed for other dischargers.<sup>214</sup> Considering that almost a quarter of “households in the United States depend[] on an individual septic system or small community cluster system to treat [their] wastewater,”<sup>215</sup> this new standard may incentivize local communities or states who have historically been averse to or stagnant in addressing the issue of failing septic tanks in their jurisdiction to apply for grants from the EPA for septic-to-sewer roll-outs.<sup>216</sup>

### *B. States Traditionally Have Regulatory Jurisdiction over Groundwater*

Though state power usually encompasses land use issues and groundwater regulation, accepting the conduit theory does not necessarily mean that the EPA has jurisdiction to regulate groundwater itself. Nonetheless, even if accepting the conduit theory means granting the EPA regulatory authority over some

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213. Murugesu Sivapalan & Günter Blöschl, *The Growth of Hydrological Understanding: Technologies, Ideas, and Societal Needs Shape the Field*, 53 WATER RES. RSCH. 8137, 8139 (2017) (reporting historical growth within the hydrology field, including innovations such as stronger computers, big data, and remote sensing which have allowed “[m]odels representing catchments as complex systems (linking time scales)”).

214. See 40 C.F.R. § 122.41(a)(2); see also ENV’T PROT. AGENCY, OFF. OF WASTEWATER MGMT., WATER PERMITS DIV., #EPA-833-K-10-001, NPDES PERMIT WRITER’S MANUAL 10-1 (2010), [https://www.epa.gov/sites/production/files/2015-09/documents/pwm\\_2010.pdf](https://www.epa.gov/sites/production/files/2015-09/documents/pwm_2010.pdf).

215. *Learn about Small Wastewater Systems*, ENV’T PROT. AGENCY, <https://www.epa.gov/small-and-rural-wastewater-systems/learn-about-small-wastewater-systems> (last visited Dec. 14, 2020).

216. See *319 Grant Program for States and Territories, Polluted Runoff: Nonpoint Source (NPS) Pollution*, ENV’T PROT. AGENCY, <https://www.epa.gov/nps/319-grant-program-states-and-territories> (last visited Dec. 14, 2020).

groundwaters, there are jurisprudential trends that support this extension of federal power over traditional state functions.

### 1. The “De Minimis Transformation” Standard Does Not Infringe on States’ Land Use Decisions

Generally, state laws regulate groundwater access and allocation, while federal laws regulate water quality.<sup>217</sup> These two projects have traditionally been characterized and executed as separate, but they have been wrongly untethered because groundwater affects surface water quality.<sup>218</sup> Some states, however, do regulate groundwater quality in addition to their federal counterparts, such as the Underground Injection Control (UIC) program under the Safe Drinking Water Act.<sup>219</sup> Nonetheless, the EPA would not be regulating groundwater itself under a de minimis transformation standard. Rather, the EPA would regulate the *point sources* that discharge through groundwater to navigable waters, ensuring that pollutants that enter navigable waters

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217. PETER FOLGER, ET AL., CONGRESSIONAL RSCH. SERV., *THE FEDERAL ROLE IN GROUNDWATER SUPPLY: OVERVIEW AND LEGISLATION IN THE 115TH CONGRESS 1* (July 18, 2018) (“Whereas the states primarily manage groundwater supply, the federal government plays a more direct role in managing the nation’s groundwater quality.”). For example, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) authorizes the EPA to initiate cleanup and enforcement actions in response to releases of hazardous substances to groundwater. 42 U.S.C. §§9601 et seq. Additionally, the Safe Drinking Water Act (SDWA) authorizes the EPA to regulate injections to underground water sources to protect drinking water quality. 42 U.S.C. §§300f et seq.

218. See Thomas C. Winter et al., *Foreword* to 1139 U.S. GEOLOGICAL SURV. CIRCULAR: GROUND WATER AND SURFACE WATER A SINGLE RESOURCE at III (1998) (suggesting that managers of land and water can only be effective if they understand the linkages between groundwater and surface water: “Traditionally, management of water resources has focused on surface water or ground water as if they were separate entities. As development of land and water resources increases, it is apparent that development of either of these resources affects the quantity and quality of the other.”).

219. Amicus curiae briefs from stakeholders in support of petitioners, County of Maui, argue that the conduit theory conflicts with the “structure of cooperative federalism embodied in the [CWA].” See Brief amicus curiae Florida Water Environmental Association-Utility Council, et al. at 9-11, *Cnty. of Maui*, 140 S. Ct. (2019) (No. 18-260) (also explaining that Florida already regulates groundwater protections: “Florida’s [administrative] rules specifically provide that a ‘discharge to ground water shall not impair the designated use of contiguous surface waters.’ [Fla. Admin. Code Ann.] r. 62-520.310(2).”); see also Brief amicus curiae of State of West Virginia, 19 other States, and the Governors of Kentucky and Mississippi at 20-27, *Cnty. of Maui*, 140 S. Ct. (2019) (No. 18-260) (arguing that “the fact that some groundwater pollution falls outside the scope of the [CWA]’s regulation does not mean that it slips through the regulatory cracks.” Further, listing states that have adopted regulations to protect groundwater quality, including West Virginia (W. Va. Code §§ 22-11-8(b), 22-11-3(23), 22-12-4(b)-(c)), Arizona (Ariz. Rev. Stat. §§49-203(a)(4), 223, 224(B)), Colorado (Colo. Rev. Stat. §§ 25-8-501(1), 25-8-103(19)), Florida (Fla. Stat. §§403.031(13), 403.062, 403.087, 403.063; Fla. Admin. Code §§ 62-520, 62-620.300), Kansas (Kan. Stat. §§ 65-164(a),(b), 65-161), Kentucky (Ky. Rev. Stat. §§ 224.70-110, 224.1-300(6)), Michigan ( §§ 324.3109(1), 324.3101(aa)), South Carolina (S.C. § 48-1-90(A)(1)).

minimally transformed from an underground point source are appropriately held accountable. This does not obstruct states' traditional authority over land use and groundwater decisions. Furthermore, if they wish, states may impose more stringent limits on the groundwater through which the pollutant travels. Notwithstanding this authority, most states do not impose strong regulations on the quality of groundwater.<sup>220</sup> Thus, to not regulate indirect discharges in these states would undoubtedly impede the goals of the CWA.

Some might argue that Congress did not intend federal jurisdiction to expand to regulation of groundwater pollution, regardless of whether groundwater is only being regulated as a conduit, not as an independent target. Moreover, when the CWA was initially proposed, Congress rejected Representative Aspin's amendment that would have extended the CWA's permitting provision to groundwater.<sup>221</sup> Likewise, as Justice Breyer explained in *Maui*, Congress's "failure to include groundwater in the general EPA permitting provision was deliberate" because regulation of groundwater pollution could be satisfied "through a variety of state-specific controls."<sup>222</sup> Under similar reasoning, one may accept Justice Thomas and Gorsuch's dissent in *Maui*, under which point source discharges that travel through conduits do not reach the navigable water "from" a point source but instead reach the navigable water from the groundwater. In accordance with Thomas and Gorsuch, the EPA took the position in its April 2019 Interpretive Statement that the CWA is best read to exclude all releases to groundwater from the NPDES program's scope.<sup>223</sup> In *Maui*, EPA took the position that the structure and history of the CWA "demonstrate Congress's intent to leave the regulation of groundwater wholly to the states under the Act."<sup>224</sup> But, as respondents Hawai'i Wildlife Fund noted in their brief, "EPA's contrary view rests on an unsupported interpretive leap: that because Congress chose not to use the CWA's point source

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220. *Cf. supra* note 219.

221. Water Pollution Control Legislation-1971 (Proposed Amendments to Existing Legislation): Hearings before the House Committee on Public Works, 92d Cong., 1st Sess., 230 (1971).

222. *Cnty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462, 1472 (2020).

223. Interpretive Statement on Application of the Clean Water Act National Pollutant Discharge Elimination System Program to Releases of Pollutants From a Point Source to Groundwater, 84 Fed. Reg. 16,810, 16,814 (U.S. Env't. Prot. Agency Apr. 23, 2019) ("The [EPA] concludes that the best, if not the only, reading of the statute is that all releases to groundwater are excluded from the scope of the NPDES program, even where pollutants are conveyed to jurisdictional surface waters via groundwater.").

224. Brief for Respondent at 42, *Cnty. of Maui*, 140 S. Ct. (2019) (No. 18-260).

permitting requirements to protect groundwater itself, it must also have chosen not to apply them to protect surface water from pollution that arrives via groundwater.”<sup>225</sup> Though the Court was not asked to give deference to EPA’s position, it explained in dictum that it would not give deference because EPA’s position is unpersuasive and unreasonable.<sup>226</sup>

Significantly, Congress’s reluctance to infringe on states’ autonomy to engage in land use decisions has resulted in partly preventable and largely unregulated groundwater and nonpoint source pollution.<sup>227</sup> As noted above, some states have regulated groundwater quality, but many rely on “local governments to protect groundwater through zoning and public health regulations.”<sup>228</sup> As James Buresh explains in his Note, *State and Federal Land Use Regulation*, “relying on local governments to voluntarily use land use regulation to control groundwater and nonpoint source pollution” is ineffective.<sup>229</sup> Self-regulation imposes substantial costs on local governments and would be similar to relying on “point source dischargers to regulate themselves.”<sup>230</sup> For these reasons, despite the CWA’s cooperative federalism framework that gives states much autonomy, the federal government’s use of a de minimis transformation standard for NPDES decisions regarding indirect discharges could help alleviate some nonpoint source and groundwater pollution problems.

## 2. Current Movement Toward Federal Regulatory Jurisdiction over Groundwater

Notwithstanding the unsubstantiated federalism concerns, there may be jurisprudential reason to expand federal jurisdiction to regulate some forms of groundwater. In November 2021, the Supreme Court decided a groundbreaking case, *Mississippi v. Tennessee (Mississippi)*,<sup>231</sup> wherein the issue posed was whether groundwater is an “interstate resource” subject to equitable

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225. *Id.* (also noting that since EPA’s interpretive statement is a guidance document, it does not deserve deference because it is “not an exercise of congressionally delegated authority to fill an interpretive gap in the statute.” (citing *United States v. Mead Corp.*, 533 U.S. 218, 229 (2001))).

226. *Cnty. of Maui*, 140 S. Ct. at 1474.

227. Buresh, *supra* note 36, at 1436.

228. *Id.* at 1439; *see supra* note 205.

229. Buresh, *supra* note 36, at 1439.

230. *Id.*

231. 142 S. Ct. 31 (Nov. 22, 2021).

apportionment in the case of a state conflict, like other surface waters.<sup>232</sup> Mississippi alleged that Tennessee interfered with Mississippi's sovereign rights over groundwater.<sup>233</sup> Mississippi took issue with Tennessee's use of groundwater; Tennessee pumps large amounts of groundwater from the Middle Claiborne Aquifer that is connected under both states.<sup>234</sup> Tennessee wished to treat the groundwater as an interstate resource, like other navigable waters, and asked the Court to rule that equitable apportionment is the proper remedy, in which case the next step would be for the Court to determine how much groundwater each state is entitled to take.<sup>235</sup> Mississippi claimed sovereignty over the groundwater and asked the Court to treat the aquifer water as its property.<sup>236</sup> Consequently, Mississippi sought monetary damages for trespass, taking, and misappropriation.<sup>237</sup>

A Special Master held an evidentiary hearing in May 2019 to decide whether groundwater should be considered an "interstate resource," similar to rivers or streams that flow through multiple states.<sup>238</sup> On November 5, 2020, the Special Master released his report, which concluded that groundwater *should* be considered an interstate resource for four reasons.<sup>239</sup> The Special Master determined that the groundwater is an interstate resource because the aquifer under Mississippi and Tennessee is a "single hydrogeological unit underneath several states[,] Tennessee's water pumping affected the groundwater underneath Mississippi[,] the water inside the Aquifer [flows] across Mississippi's borders[,] and finally[,] the water inside the Aquifer interacts with, and discharges into, interstate surface waters."<sup>240</sup>

The Supreme Court heard oral arguments in October 2021 on

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232. *Id.*; Molly K. Barker et al., *Supreme Court's 2020-2021 Preview: Interstate Water Rights*, X THE NATIONAL LAW REVIEW 257 (Sept. 13, 2020), <https://www.natlawreview.com/article/supreme-court-s-2020-2021-preview-interstate-water-rights#:~:text=In%20June%202014%2C%20Mississippi%20filed,conversion%2C%20taking%2C%20and%20misappropriation%20of>.

233. *Mississippi v. Tennessee*, 142 S. Ct. 31, 40 (Nov. 22, 2021).

234. *Id.* at 36.

235. *Id.* at 38 (the Court would determine the allocation issue only if Mississippi filed a complaint specifically alleging harm and calling on the Court to equitably apportion).

236. *Id.* at 40.

237. *Id.* at 36; Catherine Janasie, *Mississippi v. Tennessee: A Groundwater Case That Mistakenly Relies on Surface Water Doctrine*, 7 BELMONT L. REV. 245, 247, 260 (2020).

238. Barker et al., *supra* note 232.

239. Special Master Report at 11, *Mississippi v. Tennessee*, No. 143, 2020 U.S. LEXIS 5947 (Dec. 7, 2020).

240. *Id.*



the parties' exceptions to the Special Master report,<sup>241</sup> and in a unanimous opinion, affirmed the Special Master's decision, ruling that water from the interstate aquifer is subject to the judicial remedy of equitable apportionment. This holding may suggest that the federal government does rightly have jurisdiction over parts of some groundwater and could "lay the foundation for federal intervention into state sovereign rights over groundwater regulation."<sup>242</sup> In deciding *Mississippi*, the Supreme Court used similar reasoning as that found in its 1992 case, *Arkansas v. Oklahoma (Arkansas)*.<sup>243</sup> The Supreme Court in *Arkansas* held that the EPA may take downstream states' water quality standards into account when issuing a NPDES permit to a facility located in an upstream state.<sup>244</sup> Furthermore, under *Arkansas*, the EPA may condition a facility's NPDES permit on a downstream state's water quality standards.<sup>245</sup> Similar to the Supreme Court's reasoning in *Arkansas*, the Special Master in *Mississippi* reasoned that water is finite, and responsibility to preserve it belongs to all parties that use it; moreover, those responsibilities should be equitably apportioned.<sup>246</sup> Thus, in determining the appropriate apportionment between Mississippi and Tennessee, decisionmakers could draw from Supreme Court reasoning regarding surface water quality connections in *Arkansas* and develop a test for how groundwater should be equitably apportioned based on downstream need. Furthermore, as part of the equitable apportionment analysis, regulators could inquire into whether a downstream state receives minimally transformed surface or groundwaters from upstream groundwater. Depending on how much the upstream state's groundwater withdrawals contribute to the degradation of a downstream state's receiving surface or groundwaters, this may reduce the upstream state's ability to draw as much groundwater.

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241. During oral arguments, the Supreme Court Justices concentrated on the fact that Tennessee did not physically cross the border to draw water from the aquifer at issue, hinting towards the Court's likely dismissal of Mississippi's claim for damages and suggesting its agreement with the Special Master's decision—that groundwater should be treated like any other interstate water resource, for which the appropriate remedy in interstate disputes is equitable apportionment. Oral Argument, *Mississippi v. Tennessee*, 2020 U.S. LEXIS 5947 (2021) (No. 143-ORIG), <https://www.oyez.org/cases/2021/143-orig>.

242. Barker et al., *supra* note 232.

243. *Mississippi v. Tennessee*, 142 S. Ct. 31, 40 (Nov. 22, 2021) ("When a water resource is shared between several States, each one has an interest which should be respected by the other.") (quoting *Wyoming v. Colorado*, 259 U.S. 419, 466 (1922)).

244. *Arkansas v. Oklahoma*, 503 U.S. 91, 105–06 (1992).

245. *Id.*

246. Special Master Report at 32, *Mississippi*, 2020 U.S. LEXIS 5947.

Though water quality and resource allocation have traditionally been considered separate endeavors, they are nevertheless intertwined. Finite resources can be degraded through impacts on their *quality* and *quantity*. For this reason, the Supreme Court should resolve issues related to both quality and quantity by drawing on its precedent, which advances the notion that upstream harm results in downstream detriment and therefore those at the source should be held accountable.

## VII. CONCLUSION

Varying interpretations of the statutory language regarding indirect point source pollution have constrained the way courts approach the problem in determining how far federal jurisdiction should span under the NPDES program. To resolve this problem, the term “pollutant,” found within Sections 301(a) and 502(12)(A) of the CWA should be the language that gives context to words like “to” and “from” in the definition of a discharge. From the blanket ban on any discharge of any pollutant to Congress’s design of a program that allows exceptions to that ban through permitting, the statutory scheme lends itself to recognizing the importance of the term “pollutant.” Whether and the extent to which a pollutant maintains its integrity as it travels from a point source, through a conduit source, and into navigable water provides a durable limiting principle for how far NPDES jurisdiction should extend. Based on the CWA’s language, the de minimis transformation standard reflects an appropriate emphasis on the term “pollutant” for determining whether NPDES liability should attach to particular indirect discharges. Further, in the ostensibly uncontentious component of its rescinded guidance memo,<sup>247</sup> the EPA emphasized that regulators, in determining functional equivalence, should focus on the pollutant’s characteristics—guidance that can most effectively be carried out using the de minimis transformation standard.

This Note demonstrates the benefits of a de minimis transformation standard. In contrast to the Supreme Court’s test, the de minimis transformation standard may reduce the potential for arbitrary and inconsistent applications to which Justice Kennedy’s factor-based test is vulnerable—a vulnerability that has been further exposed by the district court’s ruling on remand in

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247. I say uncontentious because EPA in its later rescission memo only contested considering *facility* characteristics in a functional equivalence analysis, not *discharge* characteristics.

*Maui*. Furthermore, this Note proposes that regulators carry out the functional equivalent test by applying the de minimis transformation standard. In practice, regulators should further refine the functional equivalent test by focusing on the fifth and seventh factor of Justice Kennedy's test and ignoring the rest when determining whether an indirect discharge needs a NPDES permit. This may result in future challenges to how the test is applied. However, the de minimis transformation test rightfully respects the CWA's purposes and structure and is an appropriate method for implementing the functional equivalence standard set forth by the *Maui* opinion.

The de minimis transformation standard will help ensure that Section 402's equitable responsibility scheme is achieved; less obvious discharges should not be able to freeride off the mitigation that other more obvious point sources accomplish in regard to attaining applicable water quality standards. A de minimis transformation standard would more effectively balance competing policy concerns such as giving adequate notice to regulated entities and effectuating the CWA in our modern technologically advanced environment. This Note acknowledges trepidation to accept a more invasive federal program due to cooperative federalism values but justifies a more robust NPDES program in light of the advancements in technology, jurisprudence, and the support within the CWA itself.

