

“Federal and State Laws Regarding Bottled Water –
An Overview and Recommendations for Reform”

Written Statement of Noah D. Hall
Assistant Professor of Law
Wayne State University Law School
nhall@wayne.edu
734-646-1400

Testimony Before the United State House of Representatives
Oversight and Government Reform Committee
Domestic Policy Subcommittee

Hearing on “Assessing the Environmental Risks
of the Water Bottling Industry’s Extraction of Groundwater”

December 12, 2007
Rayburn House Office Building, Room 2154.

This written testimony is being provided in response to an invitation to appear before the United States House of Representatives Oversight and Government Reform Committee, Domestic Policy Subcommittee’s hearing on “Assessing the Environmental Risks of the Water Bottling Industry’s Extraction of Groundwater.” The Chairman has requested that my testimony describe “the existing state and federal regulatory schemes that apply to groundwater and spring water extraction by the water bottling industry” and evaluate “the adequacy of these regulatory regimes.”

Pursuant to House Rule XI, 2(g)(4), I state that I am appearing in a nongovernmental capacity and am not representing any other persons or entities. I further state that I have not received any federal grants or contracts during the current fiscal year or either of the two previous fiscal years. Finally, pursuant to the above House Rule, my curriculum vitae is attached to this written testimony as Appendix A.

This testimony provides an overview of the federal and state laws pertaining to groundwater and spring water extraction by the water bottling industry. It also provides several recommendations for new policies and legal reform to address environmental concerns relating to water extraction and bottling.

I. Introduction and Summary

Water bottling is big business and getting bigger, growing by about ten percent annually over the past five years. This raises numerous environmental concerns regarding the quality of bottled water, the waste and pollution associated with manufacturing, shipping, and disposing of plastic water bottles, and social concerns regarding water privatization and commoditization. The most important environmental concerns from a legal and regulatory perspective relate to the impact of water extraction to fill the billions of bottles Americans purchase every year. While water bottling has almost no impact on the total national freshwater supply, the majority of bottled water comes from groundwater which has a direct hydrologic connection to springs and other vulnerable surface waters. Thus, even relatively small water withdrawals for bottled water can produce significant impacts at the local scale on other water users and the environment.

Bottled water is regulated by the federal government as a food product by the Food and Drug Administration (FDA). FDA regulations provide for source identity labeling of bottled water. Consumer preferences seem to favor bottled water labeled as “spring water” over bottled water from other sources, including municipal supply. This has inadvertently led to increased pressures on vulnerable spring resources. The FDA should immediately begin a process to review and revise its source identity rule to consider the impact of bottled water withdrawals on springs and other vulnerable water resources. Further, the federal government should increase support for the United States Geological Survey to provide additional data collection, research, and investigation regarding groundwater resources and use nationwide, a role that is critically important to both water users and managers.

While federal environmental laws may incidentally apply to some bottled water operations, water withdrawals and use are generally the domain of state law. State law governs groundwater withdrawals with a mix of common law rules and more modern regulatory schemes. Most states have adopted some form of correlative rights for competing groundwater uses, under which property owners have a right to the use of groundwater below their property, subject to interference with neighboring property owners’ reasonable use of the groundwater. More recently the correlative rights approach has been applied to groundwater withdrawals that impact surface waters. Still, litigation under the common law is not an ideal system for protecting water resources from withdrawals and extractions. Many states have already adopted or are currently considering regulatory systems that proactively ensure that water withdrawals (both surface water and groundwater) do not harm other users or the environment. The most significant example is the proposed Great Lakes-St. Lawrence River Basin Water Resources Compact, which would protect and manage all freshwater within the Great Lakes basin pursuant to minimum standards administered primarily under the authority of individual states and provinces. The proposed compact standards represent numerous advances in the development of water use law, including uniform treatment for ground and surface water withdrawals, water conservation, return flow, and prevention of environmental impacts. Examples such as this should be developed and implemented at the state and regional level nationwide.

II. Background on Bottled Water

A. *The Bottled Water Industry*

Bottled water is a tremendous growth industry. According to the Beverage Marketing Corporation, bottled water became the second largest commercial beverage category by volume in the United States in 2003, second only to carbonated soft drinks.¹ Americans buy more bottled water than beer, milk, or juice. In 2006, Americans consumed 8.25 billion gallons of bottled water, nearly ten percent more than the previous year.² This total consumption equates an average of 27.6 gallons of bottled water per person per year.³ In 2007, total consumption of bottled water is expected to increase another ten percent and go over 9 billion gallons.⁴ This is typical for the industry. In the past five years, bottled water consumption has almost doubled, averaging nearly ten percent annual growth.⁵

The tremendous growth in consumption has correlated with similar growth in bottled water producer revenues. In 2005, bottled water sales in the United States surpassed ten billion dollars (\$10,000,000,000).⁶ With revenues increasing by nearly ten percent annually over the past two years, 2007 sales of bottled water are expected to approach twelve billion dollars.⁷ Just one example of the size and value of the bottled water industry is that Whole Foods, the nation's leading organic upscale food retailer, sells more bottled water than any other item.⁸

The vast majority (over 95% the past two years) of bottled water consumed in the United States is domestically produced non-sparkling water.⁹ The largest producer of bottled water in the United States is Nestlé Waters North America, with a 2006 market share of 32.4% of the bottled water sales.¹⁰ Nestlé Waters North America focuses on “spring water” (defined and discussed more below), and markets its bottled water under different brand names by region. Its leading brands are “Poland Spring” (Northeast), “Arrowhead”

¹ Beverage Marketing Corporation 2006 Statistics, *available at* http://www.bottledwater.org/public/Stats_2006.doc.

² *Id.*

³ *Id.*

⁴ *Id.*

⁵ *See id.*

⁶ *Id.*

⁷ *Id.* The Beverage Marketing Corporation projects 2007 sales of bottled water to be \$11,905,000,000.

⁸ Charles Fishman, *Message in a Bottle*, FAST COMPANY, Issue 117, at 110 (July 2007), *available at* <http://www.fastcompany.com/magazine/117/features-message-in-a-bottle.html>.

⁹ *See* Beverage Marketing Corporation 2006 Statistics, *supra* note 1. In 2005, Americans consumed 7,171.4 millions of gallons of domestic, non-sparkling water and 7,537.1 millions of gallons of total bottled water (including imported products and sparkling water). In 2006, the quantities were 7,899.9 millions of gallons and 8,253.6 millions of gallons, respectively. In 2007, the projected quantities are 8,7000.0 millions of gallons and 9,075.0 millions of gallons, respectively.

¹⁰ *See* Nestlé Waters North America Performance, *available at* <http://www.nestle-watersna.com/Menu/AboutUs/Performance.htm>. In 2006, Nestlé Waters North America had bottled water sales of \$3.846 billion. *Id.*

(West), “Deer Park” (Mid-Atlantic), “Ice Mountain” (Midwest), “Ozarka” (Texas), and “Zephyrhills” (Florida), as well as the national brand “Nestlé Pure Life.”¹¹ The other leading bottled water companies are Coke, which sells the brand name “Dasani” and distributes “Evian,” and Pepsi, which sells the brand name “Aquafina.”¹² Both Coke’s Dasani and Pepsi’s Aquafina are purified municipal water from many sources around the country.¹³

B. Environmental Concerns Relating to Bottled Water

Bottled water has come under increasing scrutiny for its environmental impacts. The environmental concerns regarding bottled water are varied and diverse. For purposes of this analysis, environmental concerns and opposition to bottled water can be organized into four categories, each of which is discussed in more detail below:

1. Quality of bottled water, especially in comparison to municipal tap water
2. Pollution and waste resulting from the manufacturing, shipping, and disposal of plastic water bottles
3. The privatization and commoditization of water through bottling and sale of water
4. Impacts of water bottlers’ groundwater and spring water extraction on other water users and dependent natural resources

I understand that the Subcommittee’s hearing is focused on the fourth category of environmental concerns – the impacts of water bottlers’ groundwater and spring water extraction on other water users and dependent natural resources – and thus my testimony focuses on these impacts. However, it is important to consider these impacts in the context of other environmental concerns which often play a part in disputes over bottled water.

1. Concerns regarding the quality of bottled water, especially in comparison to municipal tap water

While bottled water is often perceived as being of higher quality than tap water, at least one prominent environmental organization has directly attacked this perception. The Natural Resources Defense Council (NRDC) issued a report in 1999, entitled “Bottled Water: Pure Drink or Pure Hype?”¹⁴ In the report, NRDC warned the public that “[n]o

¹¹ See Nestlé Waters North America Share of Category, *available at* <http://www.nestle-watersna.com/Menu/AboutUs/Performance/Nestlé+Waters+North+America+Share+of+Category.htm>.

¹² See Fishman, *supra* note 8.

¹³ *Id.*

¹⁴ See Natural Resources Defense Council, BOTTLED WATER: PURE DRINK OR PURE HYPE? (1999), *available at* <http://www.nrdc.org/water/drinking/bw/bwinx.asp>.

one should assume that just because he or she purchases water in a bottle that it is necessarily any better regulated, purer, or safer than most tap water.”¹⁵ NRDC performed “‘snapshot’ testing of more than 1,000 bottles of 103 brands of water by three independent labs [and] found that most bottled water tested was of good quality, but some brands’ quality was spotty.”¹⁶

Not surprisingly, the bottled water industry disputes NRDC’s findings and conclusions. An analysis of the NRDC report by the Drinking Water Research Foundation concludes:

Throughout all of their analysis, NRDC found not one instance of contamination that would raise a legitimate health concern. Indeed, the survey could find only four results where federal health standards were exceeded. Closer inspection reveals that the two results charged by the NRDC Report to exceed total coliform standards, were in fact quite likely false positives because they could not be replicated in subsequent tests as required by federal standards. The other two exceedances were for a fluoride standard so narrow, and with such limited application, as to be irrelevant to public health. In fact, the levels found in the bottled water are below the EPA health-based fluoride standard for public water systems.¹⁷

It should also be noted that NRDC has subsequently determined that many municipal water supplies also have exceedances of drinking water standards.¹⁸ For purposes of this analysis, it is fair to conclude that concerns remain regarding drinking water quality standards (from both bottles and tap), and environmental groups such as NRDC would advocate stronger standards and more enforcement to protect public health from all drinking water sources.

2. Concerns regarding pollution and waste resulting from the manufacturing, shipping, and disposal of plastic water bottles

If bottled water had no water in it, and consumers simply purchased empty bottles, the environmental impact of the bottled water industry would still be significant. The pollution and waste resulting from the manufacturing, shipping, and disposal of plastic water bottles strikes many people as simply wasteful. Most water bottles are made from the plastic polyethylene terephthalate (PET), which is derived from crude oil. The Earth Policy Institute originally estimated that the manufacture of water bottles for United States consumption required more than 1.5 million barrels of oil annually, and later updated the estimate to 10 million barrels of oil annually.¹⁹

¹⁵ *Id.*, Executive Summary.

¹⁶ *Id.*

¹⁷ Drinking Water Research Foundation, Analysis of the February, 1999 Natural Resources Defense Council Report on Bottled Water, *available at* http://www.dwrf.info/nrdc_bottled_water.htm.

¹⁸ *See generally* Natural Resources Defense Council, WHAT’S ON TAP? GRADING DRINKING WATER IN U.S. CITIES (2003), *available at* <http://www.nrdc.org/water/drinking/uscities/contents.asp>.

¹⁹ Earth Policy Institute, BOTTLED WATER: POURING RESOURCES DOWN THE DRAIN (2006), *available at* <http://www.earth-policy.org/Updates/2006/Update51.htm>.

Manufacturing is only the first step in an energy intensive process of distributing water in plastic water bottles. As noted by the Earth Policy Institute, “[i]n contrast to tap water, which is distributed through an energy-efficient infrastructure, transporting bottled water long distances involves burning massive quantities of fossil fuels.”²⁰ Then, after drinking the bottled water, the bottle is generally thrown out. While PET plastic can be recycled (and the bottled water industry strongly encourages recycling²¹), 86% of plastic water bottles used in the United States become garbage or litter.²²

The environmental concerns regarding the manufacturing, shipping, and disposal of plastic water bottles motivated the United States Conference of Mayors to recently pass a resolution to study the environmental impact of bottled water.²³ The Conference of Mayors resolution noted:

bottled water must travel many miles from the source, resulting in the burning of massive amounts of fossil fuels, releasing CO₂ and other pollution into the atmosphere; ... plastic water bottles are one of the fastest growing sources of municipal waste; and ... in the U.S. the plastic bottles produced for water require 1.5 million barrels of oil per year, enough to generate electricity for 250,000 homes or fuel 100,000 cars for a year.²⁴

While the bottled water industry does not seem to dispute the statistics regarding the pollution and waste impacts relating to the manufacturing, shipping, and disposal of plastic water bottles, it may not be fair to compare these impacts to tap water. In an recent article on the subject, the CEO of Whole Foods Market made the argument that water bottles are simply substituting for other plastic beverage bottles in the marketplace: “It’s unfair to say bottled water is causing extra plastic in landfills, and it’s using energy transporting it. There’s a substitution effect – it’s substituting for juices and Coke and Pepsi.”²⁵

The substitution argument notwithstanding, the waste associated with bottled water seems to have caught the public’s attention. A recent New York Times article quoted a San Francisco citizen as saying that “fellow Bay Area residents act as if ‘you just killed their puppy’ if you dare throw a bottle in the garbage.”²⁶ Yet despite the attention, people still buy bottled water. While many consumers probably don’t consider the

²⁰ *Id.*

²¹ See International Bottled Water Association Recycling Resource Guide *available at* http://www.bottledwater.org/public/05_IBWA_Recycle_Guide_1.pdf.

²² Earth Policy Institute, *supra* note 19.

²³ United States Conference of Mayors, Resolution regarding Importance of Municipal Water (2007), *available at* http://www.usmayors.org/uscm/resolutions/75th_conference/environment_02.asp.

²⁴ *Id.*

²⁵ See Fishman, *supra* note 8 (quoting John Mackey, CEO of Whole Foods Market).

²⁶ Alex Williams, *Water, Water Everywhere, but Guilt by the Bottleful*, THE NEW YORK TIMES (August 12, 2007).

environmental impacts of energy and waste, a Seattle citizen admitted in the same New York Times article that she still buys bottled water as a “guilty pleasure.”²⁷

3. Concerns regarding the privatization and commoditization of water through bottling and sale of water

Water privatization and commoditization is a complex and contentious issue well beyond the scope of this testimony. However, as the issue often motivates bottled water opposition (even when the legal issues litigated relate to other concerns), it is important to at least understand these concerns. The fundamental concern is articulated by the Sierra Club’s Water Commodification and Corporate Privatization of Municipal Water/Sewer Services Policy, stating that “water is a public resource, not a commodity” and a basic right for all people.²⁸ The bottling and sale of water is often seen as a clear example of water privatization and commodification, with other examples including private control of water distribution systems and schemes for the bulk export and trade of water at a global scale.²⁹ It may not be fair to characterize these concerns as “environmental,” since they are more fundamentally about social justice, human rights, and public governance. Nonetheless, the concerns often are at the heart of environmental opposition.

4. Concerns regarding impacts of water bottlers’ groundwater and spring water extraction on other water users and dependent natural resources

Litigation over bottled water typically involves concerns regarding the impacts of water bottlers’ groundwater and spring water extraction on other water users and dependent natural resources. To understand these impacts, it is important to first explain the applicable source and scale of bottled water withdrawals.

Most bottled water products come from one of two major sources. The majority of bottled water is sold under the “spring water” label (discussed below in the section on FDA regulation) and comes from groundwater connected to springs (the leading examples are the Nestlé regional brands). The second leading source for bottled water is municipal water supply (examples include Coke’s Dasani brand and Pepsi’s Aquafina brand). Bottling municipal water almost never raises environmental concerns regarding the water withdrawal, since the water bottling is often using surplus municipal withdrawal and distribution capacity. Thus, this discussion will focus on the environmental impact of groundwater and spring water extraction for water bottling.

On a macro-national scale, water bottling results in an insignificant amount of overall groundwater extraction. Groundwater withdrawals for bottled water production represent well less than one-tenth of one percent (less than 0.03%) of the total groundwater

²⁷ *Id.*

²⁸ Sierra Club Water Commodification and Corporate Privatization of Municipal Water/Sewer Services Policy, available at <http://www.sierraclub.org/policy/conservation/commodification.asp>.

²⁹ See, e.g., Public Citizen, Water Privatization Overview, available at <http://www.citizen.org/cmep/Water/general/>.

withdrawals in the United States. As detailed above, total annual bottled water production is approaching ten billion gallons (not all of which comes from groundwater). The United States Geological Survey estimates that total annual groundwater withdrawals in the United States in 2000 were 30,305 billion gallons.³⁰ Of this total, agricultural use of groundwater for irrigation comprises over 68% (20,769 billion gallons) of the total groundwater withdrawals.³¹ Of course, water bottling results in a very high consumption of the water withdrawn, with essentially no water returning to the ground. However, agricultural irrigation also has very high consumptive use rates, with estimates ranging from seventy to ninety percent (70-90%),³² so the resulting impact on total groundwater supplies is still tremendously disproportionate.

While water bottling has essentially no impact on the total national supply of groundwater, it can have significant impacts on local groundwater supplies. Groundwater extraction may affect the quantity and quality of the groundwater aquifer. Significant groundwater pumping can cause a temporary or permanent lowering of the water table, increased concentration of contaminants, and in some regions salt water intrusion into the aquifer. This affects other groundwater users whose wells go dry or stop producing potable water.³³

Moreover, groundwater is often hydrologically connected to fresh surface waters such as rivers, streams, and lakes (and groundwater that is bottled and sold as “spring water” is by definition hydrologically connected to natural springs, as discussed more below in the section on FDA regulation). Pumping groundwater can take water from these surface water systems. The basic hydrology was succinctly described in a recent report commissioned by the Michigan Legislature in the wake of the Nestlé bottled water litigation in that state (discussed in more detail below):

Over time, the dominant source of water to a well, particularly a well completed in an unconfined aquifer, changes to streams. This water may either be decreased groundwater discharge to the stream or increased recharge to the groundwater system from the stream. In either case, streamflow reduction occurs and is often referred to as streamflow capture. In the long term, the cumulative streamflow capture from a groundwater system can approach the total amount of water being pumped from that system.³⁴

³⁰ United States Geological Survey, Estimated Use of Water in the United States in 2000, Table 4, *available at* <http://pubs.usgs.gov/circ/2004/circ1268/htdocs/table04.html>.

³¹ *Id.*

³² *See* to seventy to ninety percent for agricultural irrigation. *See* GREAT LAKES COMMISSION, TOWARD A WATER RESOURCES MANAGEMENT DECISION SUPPORT SYSTEM FOR THE GREAT LAKES-ST. LAWRENCE RIVER BASIN 60 (2003), *available at* <http://www.glc.org/wateruse/wrmdss/finalreport/pdf/WR-ExSum-2003.pdf>.

³³ For a more thorough discussion of these impacts, *see* Robert Glennon, WATER FOLLIES: GROUNDWATER PUMPING AND THE FATE OF AMERICA'S FRESH WATERS (2002).

³⁴ Groundwater Conservation Advisory Council, FINAL REPORT TO THE MICHIGAN LEGISLATURE IN RESPONSE TO PUBLIC ACT 148 OF 2003 (February 6, 2006), *available at* <http://www.deq.state.mi.us/documents/deq-gwcac-legislature.pdf>

Thus, groundwater pumping can directly impact surface water users, both consumptive water users and people who use the surface water for recreation and aesthetics. Further, when groundwater is hydrologically connected to surface water, a wide range of natural resources, including fisheries, wetlands, and aquatic invertebrates, often rely on the groundwater input to the surface water for their existence and health. The report commissioned by the Michigan legislature determined that “about 80 percent of the annual streamflow in [Michigan’s] Lower Peninsula results from groundwater discharge.”³⁵ Further, “[m]any lakes and wetlands do not have streams flowing into them, and groundwater, therefore, is the only inflow besides precipitation on the surface of the lake or wetland.”³⁶ The report concluded that “[m]ost aquatic ecosystems in Michigan are dependent upon the discharge of groundwater into surface water.”³⁷

As discussed in the following sections, the impacts of groundwater withdrawals on other groundwater users and connected surface water systems are most often the legal bases for opposition to bottled water proposals.

III. Federal Laws Applicable to Groundwater Extraction and Water Bottling

As a general matter, the federal government does not regulate water withdrawals and water use from surface waters or groundwater for bottled water or any other purpose. Water law is primarily state-based law, as discussed in the next section. However, because bottled water is considered a food product under the Federal Food, Drug and Cosmetic Act,³⁸ the Food and Drug Administration (FDA) regulates bottled water for drinking water quality and labeling accuracy. Further, several federal environmental laws may incidentally apply to a specific water bottling project based on the specific facts of the project. Finally, while not regulatory, the United States Geological Survey provides critically important data collection, research, and investigations that assist federal, state, and local decision-makers in groundwater management.

A. Food and Drug Administration Regulation of Bottled Water as a Food Product

Because bottled water is considered a food product under the Federal Food, Drug and Cosmetic Act,³⁹ the Food and Drug Administration (FDA) regulates bottled water for drinking water quality and labeling accuracy. The quality of other drinking water supplies, including municipal tap water, is regulated by the U.S. Environmental Protection Agency (EPA) pursuant to the Safe Drinking Water Act.⁴⁰ While bottled water is not subject to the EPA’s Safe Drinking Water Act regulation, the FDA is required to ensure that bottled water quality standards are compatible with EPA drinking

³⁵ *Id.*

³⁶ *Id.*

³⁷ *Id.*

³⁸ 21 U.S.C. §§ 301-321(f).

³⁹ 21 U.S.C. §§ 301-321(f).

⁴⁰ 42 U.S.C. § 300(f) (1974), amended by Pub. L. No. 104-182, 110 Stat. 1613 (1996).

water quality standards.⁴¹ Further, whenever the EPA revises its drinking water standards, the FDA must also set a similar level for bottled water or report in the Federal Register why it is not doing so.⁴²

In addition to its water quality protection regulations, the FDA regulates “identity” labeling of bottled water.⁴³ The identity regulations describe the different types of bottled water by source and treatment process. In addition to simply labeling a product as “bottled water” or “drinking water,” producers obtaining water from certain sources or meeting specified treatment standards can use numerous other labels, including “artesian water,” “ground water,” “mineral water,” “purified water,” “distilled water,” “sparkling bottled water,” “sterilized water,” and “well water.”⁴⁴ Further, bottled water must be labeled as “from a community water system” or “from a municipal source” unless the bottled water has met certain treatment standards.⁴⁵

Most relevant to this hearing is the labeling requirements for “spring water,” which seems to be the identity that consumers prefer. The FDA regulations provide:

The name of water derived from an underground formation from which water flows naturally to the surface of the earth may be “spring water.” Spring water shall be collected only at the spring or through a bore hole tapping the underground formation feeding the spring. There shall be a natural force causing the water to flow to the surface through a natural orifice. The location of the spring shall be identified. Spring water collected with the use of an external force shall be from the same underground stratum as the spring, as shown by a measurable hydraulic connection using a hydrogeologically valid method between the bore hole and the natural spring, and shall have all the physical properties, before treatment, and be of the same composition and quality, as the water that flows naturally to the surface of the earth. If spring water is collected with the use of an external force, water must continue to flow naturally to the surface of the earth through the spring’s natural orifice. Plants shall demonstrate, on request, to appropriate regulatory officials, using a hydrogeologically valid method, that an appropriate hydraulic connection exists between the natural orifice of the spring and the bore hole.⁴⁶

The FDA thus requires that in order to produce bottled water with the consumer-desired label of “spring water,” a bottled water producer must draw water either directly from a spring or from groundwater that has a direct hydrological connection to a surface spring. This regulation has had the unintended consequence of putting tremendous demand and

⁴¹ See Tara Boldt-Van Rooy, “*Bottling Up*” *Our Natural Resources: The Fight Over Bottled Water Extraction in the United States*, 18 J. LAND USE & ENVTL. L. 267, 275 (2003).

⁴² 21 U.S.C. § 349.

⁴³ 21 C.F.R. § 165.110(a).

⁴⁴ 21 C.F.R. § 165.110(a)(2).

⁴⁵ 21 C.F.R. § 165.110(a)(3)(ii).

⁴⁶ 21 C.F.R. § 165.110(a)(2)(vi).

pressure on springs, which are typically some of the most fragile and vulnerable water resources.

B. Federal Environmental Laws Applicable to Groundwater Extraction and Water Bottling

While water withdrawals and extraction are not generally regulated under federal law, but are rather left to state law, several federal environmental laws may incidentally apply to a specific water bottling project.

1. The Federal Water Pollution Control Act (Clean Water Act)

Section 404 of the Federal Water Pollution Control Act⁴⁷ (known more commonly as the Clean Water Act) authorizes the U.S. Army Corps of Engineers to “issue permits, after notice and opportunity for public hearings for the discharge of dredged or fill material into the navigable waters.”⁴⁸ Section 404 is a “modern supplement”⁴⁹ to section 10 of the Rivers and Harbors Act of 1899,⁵⁰ which similarly made it unlawful to excavate or fill in navigable waters without authorization from the U.S. Army Corps of Engineers. The term “navigable waters” is defined by the Clean Water Act as “waters of the United States.”⁵¹ The scope of this definition was the subject of a recent Supreme Court opinion, *Rapanos v. United States*.⁵² While a complete discussion of the meaning of the term “navigable waters” after the *Rapanos* decision is beyond the scope of this testimony, it is now clear that most lower courts and commentators have recognized that Justice Kennedy’s concurring opinion offers the controlling analysis and test:

[T]he Corps’ jurisdiction over wetlands depends upon the existence of a significant nexus between the wetlands in question and navigable waters in the traditional sense. The required nexus must be assessed in terms of the statute’s goals and purposes. . . . With respect to wetlands, the rationale for Clean Water Act regulation is, as the Corps has recognized, that wetlands can perform critical functions related to the integrity of other waters – functions such as pollutant trapping, flood control, and runoff storage. 33 C.F.R. §320.4(b)(2). Accordingly, wetlands possess the requisite nexus, and thus come within the statutory phrase “navigable waters,” if the wetlands, either alone or in combination with similarly situated lands in the region, significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as “navigable.” When, in contrast, wetlands’ effects on water quality are speculative or insubstantial, they fall outside the zone fairly encompassed by the statutory term “navigable waters.”⁵³

⁴⁷ 33 U.S.C. § 1344.

⁴⁸ 33 U.S.C. § 1344(a).

⁴⁹ JOSEPH L. SAX ET AL., LEGAL CONTROL OF WATER RESOURCES 639 (3d ed. 2000).

⁵⁰ 30 Stat. 1151, 33 U.S.C. § 403.

⁵¹ 33 U.S.C. § 1362(7).

⁵² 126 S.Ct. 2208 (2006)

⁵³ *Rapanos v. United States*, 126 S.Ct. 2208, 2248 (Kennedy, J., concurring) (2006).

The Corps' thus has jurisdiction over many waters and wetlands, yet section 404 only applies to the "discharge" of dredged or fill materials.⁵⁴ While groundwater and spring water extraction, for water bottling or any other purpose, may drain water from hydrologically connected surface waters and wetlands, the draining of water from surface waters and wetlands is not regulated by the Clean Water Act. A water bottling operation only needs a section 404 permit if it results in filling wetlands incidentally to the water extraction.

2. Wild and Scenic Rivers Act

The federal Wild and Scenic Rivers Act of 1968⁵⁵ provides that certain rivers "shall be preserved in free-flowing condition."⁵⁶ The act seeks to accomplish this goal by forbidding any "department or agency of the United States [from] recommending authorization of any water resources project that would have a direct and adverse effect on the values for which such river was established."⁵⁷ However, the act faces two obvious limitations.

First, the Wild and Scenic Rivers Act only applies to river segments designated as National Wild and Scenic Rivers. The National Wild and Scenic Rivers system has only 11,409 river miles in it, which represents merely one-quarter of one percent of the nation's rivers.⁵⁸ Second, the act only expressly applies to federal actions, not private water withdrawals made pursuant to state law. It has not been settled through litigation how a conflict between the goals of the federal act and a water withdrawal made pursuant to state law would be resolved. Section 13 of the act provides:

(b) Compensation for water rights

The jurisdiction of the States and the United States over waters of any stream included in a national wild, scenic or recreational river area shall be determined by established principles of law. Under the provisions of this chapter, any taking by the United States of a water right which is vested under either State or Federal law at the time such river is included in the national wild and scenic rivers system shall entitle the owner thereof to just compensation. Nothing in this chapter shall constitute an express or implied claim or denial on the part of the Federal Government as to exemption from State water laws.

(d) State jurisdiction over included streams

The jurisdiction of the States over waters of any stream included in a national wild, scenic or recreational river area shall be unaffected by this

⁵⁴ 33 U.S.C. § 1344(a).

⁵⁵ 16 U.S.C. §§1271-1287.

⁵⁶ 16 U.S.C. § 1271.

⁵⁷ 16 U.S.C. § 1278(a).

⁵⁸ National Wild and Scenic Rivers System, River and Water Facts, *available at* <http://www.rivers.gov/waterfacts.html>.

chapter to the extent that such jurisdiction may be exercised without impairing the purposes of this chapter or its administration.⁵⁹

However, section 10 of the Act seems to provide authority to limit new water withdrawals that impact a designated river:

Each component of the national wild and scenic rivers system shall be administered in such manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based on the special attributes of the area.⁶⁰

3. The National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969⁶¹ was intended to “promote environmentally sensitive decision-making without prescribing any substantive standards.”⁶² It accomplishes this goal by requiring information exchange and public processes. NEPA “guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decision making process and the implementation of that decision.”⁶³ NEPA’s central legal requirement is that federal agencies prepare an Environmental Impact Statement (“EIS”) whenever a proposed major federal action will significantly affect the quality of the human environment.⁶⁴ Again, however, the major limitation of NEPA is that it only applies to federal actions. As water withdrawals are made pursuant to state law, NEPA does not generally apply. In some instances, such as when a federal permit is incidentally required (such as a Clean Water Act section 404 permit, discussed above), NEPA may be triggered.

4. The Endangered Species Act

The Endangered Species Act (ESA)⁶⁵ is a powerful regulatory law intended to prevent the extinction of endangered species. The ESA requires the Secretary of the Interior to determine animal and plant species that are endangered or threatened based on the best scientific and commercial data available, and to list such species and designate their critical habitat. Once a species is listed, federal agencies must insure that their actions are not likely to jeopardize the listed species’ continued existence or harm their critical

⁵⁹ 16 U.S.C. § 1284(b),(d).

⁶⁰ 16 U.S.C. § 1281(a).

⁶¹ Pub. L. No. 91-190, 83 Stat. 852 (codified as amended at 42 U.S.C. § 4321–4347 (2000)).

⁶² *Anderson v. Evans*, 314 F.3d 1006, 1016 (9th Cir. 2002).

⁶³ *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

⁶⁴ *Sierra Club v. Peterson*, 717 F.2d 1409, 1412 (D.C.Cir.1983); *see also* 42 U.S.C. § 4332(2)(C).

⁶⁵ 16 U.S.C. §§ 1531-1544.

habitat.⁶⁶ The ESA also prohibits any person from “tak[ing]” a listed species, which includes disturbance of habitat.⁶⁷

The ESA can be implicated in water withdrawals when additional instream flows are required for an endangered species but water is already in use by private parties with state water rights. Similarly, a new water withdrawal that would diminish the instream flows and aquatic habitat of an endangered species would conflict with the ESA. This application has never affected a water bottler, although it has affected other private water users with considerable controversy.

5. The 1986 Water Resources and Development Act

It has been argued that bottled water withdrawals within the Great Lakes basin (which includes portions of Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Pennsylvania, and New York) are subject to the section 1109 of the 1986 Water Resources Development Act (typically referred to as 1986 WRDA).⁶⁸ The statute provides:

No water shall be diverted or exported from any portion of the Great Lakes within the United States, or from any tributary within the United States of any of the Great Lakes, for use outside the Great Lakes basin unless such diversion or export is approved by the Governor of each of the Great Lake [sic] States.⁶⁹

Thus, any of the Great Lakes governors can veto a proposed diversion of Great Lakes water out of the basin. This essentially gives the Great Lakes states authority that they would otherwise not have pursuant to the Constitution’s dormant commerce clause.⁷⁰

It is still not a settled question whether the ban on diversions applies to bottles of water leaving the Great Lakes basin. The one lawsuit attempting to use 1986 WRDA to stop a proposed bottled water operation was dismissed because the law does not provide a private right of action to enforce compliance.⁷¹ Further, 1986 WRDA lacks any standards for the governors’ collective approval and may not apply to groundwater.⁷² Thus, it does not provide a solid basis for addressing bottled water withdrawals.

⁶⁶ 16 U.S.C. § 1536(a).

⁶⁷ See 16 U.S.C. § 1538(a)(1)(B); *Babbitt v. Sweet Home Chapter*, 515 U.S. 687 (1995).

⁶⁸ Pub. L. No. 99-662, § 1109, 100 Stat. 4082, 4230 (codified as amended at 42 U.S.C. § 1962d-20 (2000)).

⁶⁹ 42 U.S.C. § 1962d-20(d) (2000). This section only applies to new diversions; diversions authorized before 1986 are not covered by the veto. *Id.* § 1962d-20(f).

⁷⁰ 1986 WRDA was enacted only a few years after the Supreme Court’s decision in *Sporhase v. Nebraska ex rel. Douglas*, 458 U.S. 941 (1982), which limited a state’s ability to restrict export of groundwater under the dormant commerce clause.

⁷¹ See *Little Traverse Bay Bands of Odawa Indians v. Great Spring Waters of Am., Inc.*, 203 F.Supp.2d 853 (W.D. Mich. 2002). For additional commentary on the lack of a private right of action under 1986 WRDA, see Charles F. Glass, Jr., Note, *Enforcing Great Lakes Water Export Restrictions Under the Water Resources Development Act of 1986*, 103 COLUM. L. REV. 1503 (2003).

⁷² See Noah D. Hall, *Toward A New Horizontal Federalism: Interstate Water Management in the Great Lakes Region*, 77 COLORADO L. REV. 405, 429-31 (2006).

C. The United States Geological Survey

The United States Geological Survey (USGS) does not regulate water use in any way. However, it provides an arguably more important function, supplying important data collection, research, and investigations that assist federal, state, and local decision-makers in groundwater management. USGS investigations and reports have informed many policy efforts and provided unbiased information to resolve groundwater disputes, including disputes involving bottled water extraction.⁷³ Unfortunately, the agency has suffered from a lack of funding that has limited its ability to assist water managers and users nationwide.

IV. State Laws Applicable to Groundwater Extraction and Water Bottling

State law is the primary authority for water withdrawal and management, including groundwater extraction for water bottling. A detailed and comprehensive survey of state laws applicable to water bottling would be massive undertaking and is beyond the scope of this analysis. Instead, this section will provide a succinct overview of groundwater withdrawal law in some sample states that represent both the general principles and diversity of state law.

A. Correlative Property Rights for the Use of Underlying Groundwater – Background Principles from Ohio

The common law regarding competing groundwater rights and use varies by state, but most states follow some form of correlative rights (a notable exception is Texas, discussed below). Essentially, property owners have a right to the use of groundwater below their property, subject to interference with neighboring property owners' reasonable use of the groundwater. The origins and applications of this principle were explained in a recent case decided by the Ohio Supreme Court.⁷⁴ The issue came to the Supreme Court of Ohio as a certified question from the United States Sixth Circuit Court of Appeals,⁷⁵ so the facts are not particularly important and the case provides an excellent summary of the law itself (the case did not involve bottled water). The certified question asked the Supreme Court of Ohio: "Does an Ohio homeowner have a property interest in so much of the groundwater located beneath the land owner's property as is necessary to the use and enjoyment of the owner's home?"

The Supreme Court of Ohio first reviewed its prior decisions on groundwater rights and liability for groundwater well interference. In the mid-nineteenth century, Ohio adopted a rule of capture for groundwater, holding that groundwater "is to be regarded as part of the land itself, to be enjoyed absolutely by the proprietor within whose territory it lies."⁷⁶

⁷³ For examples of the work that USGS does regarding groundwater, see USGS Ground Water Information Pages, available at <http://water.usgs.gov/ogw/>.

⁷⁴ *McNamara v. City of Rittman*, 838 N.E.2d 640 (2005).

⁷⁵ *Hensley v. City of Columbus*, 433 F.3d 494 (6th Cir. 2006).

⁷⁶ *Frazier v. Brown*, 12 Ohio St. 294, 308 (1861).

Under this holding, Ohio refused to recognize any rule requiring the sharing of water among landowners overlying a common aquifer. Thus, any owner of property was entitled to use all the groundwater he could, without regard to how that use affected neighboring landowners. The Supreme Court of Ohio set forth two public policy justifications for its holding:

1. Because the existence, origin, movement and course of such waters, and the causes which govern and direct their movements, are so secret, occult and concealed, that an attempt to administer any set of legal rules in respect to them would be involved in hopeless uncertainty, and would be, therefore, practically impossible.⁷⁷
2. Because any such recognition of correlative rights, would interfere, to the material detriment of the common wealth, with drainage and agriculture, mining, the construction of highways and railroads, with sanitary regulations, building and the general progress of improvement in works of embellishment and utility.⁷⁸

This holding stood for over one hundred years, until the Supreme Court of Ohio adopted the Restatement (Second) of Torts § 858 correlative rights “reasonable use” doctrine for groundwater.⁷⁹ The Restatement (Second) of Torts § 858 established, which has been widely adopted by state courts, provides that landowners have property rights with respect to groundwater, specifically the right to be free from unreasonable harm through lowering the water table and diminishing a water supply. The Ohio court concluded that the century of science since the rule of capture enabled courts to determine the effect of one landowner’s water use on another landowner’s property. The court essentially adopted the same property and liability rules for landowners in groundwater disputes as had been used for riparians in surface water disputes, giving legal protection to a landowner’s groundwater supply.

In addressing the certified question, the Supreme Court of Ohio held that this right of reasonable use amounts to a property right: “That right [to use groundwater below one’s property] is one of the fundamental attributes of property ownership and an essential stick in the bundle of rights that is part of title to property.”⁸⁰ The court further stated: “[Groundwater] rights are appurtenant to title in real property.... By way of analogy, a riparian landowner does not own the water in a stream that runs along his property, but he does own the right to the reasonable use of the stream as a part of the title to his real estate.”⁸¹ The court concluded:

The well-being of Ohio homeowners, the stability of Ohio’s economy, and the reliability of real estate transfers require the protection of groundwater

⁷⁷ *Id.* at 311.

⁷⁸ *Id.*

⁷⁹ *Cline v. Am. Aggregates Corp.*, 474 N.E.2d 324 (1984)

⁸⁰ *McNamara*, 838 N.E.2d at 645.

⁸¹ *Id.*

rights. We therefore hold that Ohio landowners have a property interest in the groundwater underlying their land”⁸²

The Supreme Court of Ohio’s decision is representative of the general correlative rights approach to groundwater disputes, giving landowners a right of use subject to interference with their neighbors’ rights. The decision provides a clear rebuke of the outdated rule of capture for those with the greatest pumping capacity.

B. The Exception – The Rule of Capture Is Still the Law in Texas

Various versions of correlative rights for groundwater use are the common law in most states, but it is worth briefly mentioning the notable exception of Texas. In *Sipriano v. Great Spring Waters of America, Inc.*,⁸³ the Texas Supreme Court bucked the trend displayed by Ohio and most other states and held fast to the rule of capture, which is basically no legal rule for groundwater extraction at all.

The dispute began when Nestlé sought a new source for its Ozarka “spring water” brand. Nestlé initially began pumping a relatively modest 90,000 gallons of water per day from Rohr Springs in Big Rock, Texas.⁸⁴ Only four days after the pumping started, Bart Sipriano and several other local homeowners experienced decreases in their well water supply and brought suit against the water bottler.⁸⁵ The plaintiffs’ suit was predicated on an attempt to reform the common law in Texas from a rule of capture to the more modern correlative rights approach.

In short, the plaintiffs failed. The Texas Supreme Court upheld the state’s common law rule of capture, which had been in place for almost a century. As explained by the court, the “rule of capture essentially allows ... a landowner to pump as much groundwater as the landowner chooses, without liability to neighbors who claim that the pumping has depleted their wells.”⁸⁶ In a separate concurrence, Texas Supreme Court Justice Hecht noted that Texas is the only western state out of eighteen to still follow the outdated rule of capture, but chose to leave to the state legislature the task of modernizing Texas groundwater law.⁸⁷

C. Correlative Rights for Groundwater Uses that Impact Surface Waters – A Michigan Case Study

While some version of common law correlative rights for competing groundwater uses have been long established in most states, water bottling disputes often involve groundwater withdrawals that impact surface waters. Recently, state courts have begun to expand the correlative rights approach to these disputes.

⁸² McNamara, 838 N.E.2d at 646.

⁸³ 1 S.W.3d 75 (Tex. 1999).

⁸⁴ *Sipriano v. Great Spring Waters of America, Inc.*, 1 S.W.3d at 75-76.

⁸⁵ *Id.*

⁸⁶ *Id.* at 75.

⁸⁷ *Id.* at 81-83.

In *Michigan Citizens for Water Conservation v. Nestlé Waters North America Inc.*,⁸⁸ defendant Nestlé sought to pump approximately 400 gallons per minute (gpm) of groundwater from four wells located on a site called Sanctuary Springs in northern Michigan. The wells would supply Nestlé’s “Ice Mountain” bottled water production facility twelve miles from the Sanctuary Springs site. Nestlé selected the Sanctuary Springs location because the groundwater would meet the Food and Drug Administration’s requirements to be marketed as “spring water” pursuant to 21 C.F.R. § 165.110(a)(2)(vi) (discussed above).

The plaintiffs were riparians along several nearby waterbodies, notably the unfortunately named Dead Stream. In challenging Nestlé’s groundwater pumping, plaintiffs raised three principal legal issues. First, plaintiffs alleged that Nestlé’s groundwater pumping would diminish hydrologically connected surface waters (including the Dead Stream), violating plaintiffs’ riparian rights in the recreational use and enjoyment of such surface waters. Second, the plaintiffs claimed that the groundwater pumping violates the Michigan Environmental Protection Act (MEPA),⁸⁹ which allows “any person” to bring an action “for the protection of the air, water, and other natural resources and the public trust in these resources from pollution, impairment, or destruction.” Third, plaintiffs argued that Nestlé’s bottling and selling of groundwater outside of the source watershed violated the public trust.

After a lengthy bench trial, the trial court found that Nestlé’s groundwater pumping would diminish the base flow of the hydrologically connected Dead Stream by 24%. Because Nestlé was pumping the groundwater for bottling off-tract, and eventual sale and distribution outside of the source watershed, the trial court found Nestlé’s water use to be unreasonable. Further, the trial court found that Nestlé violated MEPA, relying primarily on another Michigan statute, the Inland Lakes and Streams Act (ILSA),⁹⁰ which prohibits “diminishment” of an inland lake or stream without a state permit (which Nestlé did not obtain). However, the trial court dismissed the plaintiffs’ public trust claim, ruling that Michigan law does extend public trust protections for navigable waters to groundwater.

The Court of Appeals first affirmed the trial court’s findings of fact, most importantly that Nestlé’s groundwater pumping would diminish the base flow of the Dead Stream by 24%. The court’s opinion then focused on the common law rules for surface water and groundwater use in Michigan. As an eastern state, Michigan generally follows riparian reasonable use rules for surface water use, which allow some diminishment of a surface water by one riparian, as long as the water use and potential harms to other riparians are reasonable. However, the rules in Michigan for groundwater use are less clear. Michigan had already rejected an absolute rule of capture (discussed below) for groundwater use, but had never before considered the problem of groundwater use measurably affecting a hydrologically connected surface water.

⁸⁸ 709 N.W.2d 174 (Mich. App. 2005), *portions rev’d on other grounds*, 737 N.W.2d 447 (Mich. 2007).

⁸⁹ Mich. Comp. Laws § 324.1701 *et seq.*

⁹⁰ Mich. Comp. Laws § 324.30101 *et seq.*

To address this issue, the court adopted a correlative rights approach for the competing ground and surface water rights. Under this approach, a court would look to the same reasonable use factors employed for balancing competing riparian rights to a surface water. The balancing test is based on three principles. First, the law will strive to ensure “fair participation” in the water use, preserving as many beneficial uses of the common resource as possible. Second, the law will only protect uses that are reasonable. Third, the law will only redress unreasonable harms to other water users. Numerous factors are then used on a case-by-case basis. For example, “natural” uses which are necessary for drinking and household needs have priority over “artificial” uses “which merely increase one’s comfort and prosperity and do not rank as essential to his existence, such as commercial profit and recreation.” Other factors include the suitability of the water use to the location, the extent of harm, the benefits of the use, and the necessity of the use.

In applying these factors to the present dispute, the court first noted that both competing uses (Nestlé’s water bottling and the plaintiffs’ recreational and aesthetic enjoyment of the Dead Stream) are reasonable and beneficial, and that neither use was so preferable or necessary such that it prevails on that basis alone. Instead, the court looked to the amount of pumping, the suitability of the water body for Nestlé’s use, and the extent of the harm. In this case, Nestlé did not need to pump 400 gpm from this location to meet its commercial needs. Further, the rate of pumping would cause an unreasonable harm to the Dead Stream. Therefore, the court ruled that Nestlé’s pumping of 400 gpm was unreasonable, enjoined future pumping at that rate, and remanded the case to the trial court to determine what rate of pumping would be reasonable under this analysis.

The court further held that Nestlé’s failure to obtain a permit under ILSA does not establish a *per se* prima facie case under MEPA. Instead, the court remanded the statutory MEPA claim to the trial court to allow both the plaintiffs and defendant to present their arguments on the substantive MEPA violation. The remand was in part subsequently mooted by the Michigan Supreme Court, which held that the plaintiffs lacked standing to bring a MEPA claim for impacts to certain resources.⁹¹ The court also affirmed the trial court’s ruling that the public trust protections for water in Michigan only apply to navigable waters, thus Nestlé’s groundwater pumping does not give rise to a public trust violation.

This case received tremendous public attention, including coverage in national media outlets such as USA Today.⁹² Much of the public attention was focused on bottled water, and the controversies surrounding diversion and sale of water in Michigan. However, the court’s opinion did not focus on the bottling and sale of water, but instead on the competing legal rights of surface and groundwater users. The Michigan court, as is typical, did not treat the water bottler any different than other commercial water users.

⁹¹ *Michigan Citizens for Water Conservation v. Nestlé Waters North America Inc.*, 737 N.W.2d 447 (Mich. 2007).

⁹² Debbie Howlett, *Water Battle Dredges Up Acrimony*, USA TODAY, June 23, 2003, at 3A.

D. State Statutory Reform – the Wake of the Michigan Nestlé Case

The cases decided by state courts under the common law and older state resource protection statutes may not be the final chapter in a bottled water dispute. Often, the litigation motivates statutory reform sought by both water bottlers and opponents. An excellent example is the ongoing effort to reform water withdrawal regulation in Michigan in the wake of the Nestlé case.

Even before the Michigan court of appeals handed down its decision in the Nestlé case, the Michigan legislature made some modest reforms in groundwater law. In 2003, Michigan enacted a groundwater dispute resolution program. The program provides a simple process for small quantity well owners to “submit a complaint alleging a potential groundwater dispute if the small quantity well has failed to furnish the well’s normal supply of water and the owner has credible reason to believe the well’s problems have been caused by a high capacity well.”⁹³ Small quantity wells are defined as wells with less than 100,000 gallons per day of pumping capacity; high capacity wells are defined as wells with capacity greater than 100,000 gallons per day.⁹⁴ Essentially, the statute provides a far cheaper and simpler mechanism than private litigation to protect the groundwater use rights of individuals and small businesses harmed by larger groundwater extractions.

After the Nestlé decision, the Michigan legislature made far more significant reforms. Statutes enacted in 2006 require any person that develops new or increased water withdrawal capacity of over 2 million gallons per day (gpd) from an inland water source (including groundwater) or 5 million gpd from the Great Lakes to obtain a water withdrawal permit.⁹⁵ For withdrawals from inland waters and groundwater, the sole standard for issuance of a permit is whether or not the withdrawal is “likely to cause an adverse resource impact.”⁹⁶ An “adverse resource impact” is defined as decreasing either the flow of a stream or the level of a body of surface water such that the water body’s “ability to support characteristic fish populations is functionally impaired.”⁹⁷ Permit terms are not specified, but the state may revoke a permit if it “determines following a hearing, based upon clear and convincing scientific evidence, that the withdrawal is causing an adverse resource impact.”⁹⁸ The permit process and appeals are subject to the Michigan Administrative Procedures Act.⁹⁹

Water bottlers are not subject to the above provisions, since they are regulated under Michigan’s Safe Drinking Water Act. However, the state Safe Drinking Water Act was also amended by the legislation to subject those water withdrawals to essentially the same standards.¹⁰⁰ The legislation gives municipal water suppliers the additional benefit of

⁹³ Mich. Comp. Laws § 324.31702(1).

⁹⁴ Mich. Comp. Laws § 324.31701(j) and (q).

⁹⁵ Mich. Comp. Laws § 324.32723(1).

⁹⁶ Mich. Comp. Laws § 324.32723(5).

⁹⁷ Mich. Comp. Laws § 324.32701(a).

⁹⁸ Mich. Comp. Laws § 324.32723(8).

⁹⁹ Mich. Comp. Laws § 324.32723(9).

¹⁰⁰ Mich. Comp. Laws § 324.32723(10), § 325.1004(3),(4).

being allowed to withdraw water even if the above standards have not been met, if “there is no feasible and prudent alternative location for the withdrawal” *and* “conditions related to depth, pumping capacity, rate of flow, and ultimate use ... ensure that the environmental impact of the withdrawal is balanced by the public benefit of the withdrawal related to public health, safety, and welfare.”¹⁰¹

Beyond the general reforms to water withdrawal law, the Michigan statute subjects bottled water producers to many additional standards and requirements. Water bottlers must be permitted at a far lower permit threshold (new or increased withdrawal of 250,000 gpd) and meet the following standards:

- The proposed use is not likely to have an adverse resource impact.
- The proposed use is reasonable under common law principles of water law in Michigan.
- The withdrawal will be conducted in such a manner as to protect riparian rights as defined by Michigan common law.
- The person will undertake activities, if needed, to address hydrologic impacts commensurate with the nature and extent of the withdrawal. These activities may include those related to the stream flow regime, water quality, and aquifer protection.
- Advance consultation with local government officials and interested community members.
- Advance public notice and an opportunity for public comment.¹⁰²

The statute also makes clear that water packaged in containers of 5.7 gallons (20 liters) or less is not considered a prohibited diversion under Michigan law.¹⁰³ Since 1985, Michigan law has prohibited diversion of water out of the Great Lakes watershed, effectively prohibiting almost any bulk diversion of water from the state.¹⁰⁴ However, because there has been some reason for concern about the Constitutionality of this blanket prohibition, the new statute expressly provides that if the prohibition is determined to be invalid, then new diversions are subject to the approval of the legislature’s public trust duties.¹⁰⁵

It is worth noting that almost all of the state’s leading business, municipal, agricultural, and environmental organizations (including the bottled water industry) supported the passage of the legislation. The general consensus was that both water users and environmentalists would be better served by a proactive permitting system than common law litigation over water rights. Whether this will prove to be correct remains to be seen.

¹⁰¹ Mich. Comp. Laws § 325.1004(4).

¹⁰² See Mich. Comp. Laws § 325.1017(3)-(5).

¹⁰³ Mich. Comp. Laws § 324.32701(e).

¹⁰⁴ Mich. Comp. Laws § 324.32703.

¹⁰⁵ See Mich. Comp. Laws § 324.32703a.

E. The Proposed Great Lakes Compact – A Major Advance in Water Protection

The eight Great Lakes states¹⁰⁶ have recently proposed and begun adopting the Great Lakes-St. Lawrence River Basin Water Resources Compact.¹⁰⁷ The Great Lakes are the world's largest freshwater resource, containing ninety-five percent of the fresh surface water in the United States and twenty percent of the world's supply.¹⁰⁸ The proposed Great Lakes compact would protect and manage all freshwater (groundwater and surface water) within the basin pursuant to minimum standards administered primarily under the authority of individual states. The proposed compact puts common law correlative water use rules and environmental protection standards into a proactive public law regime. The standards represent numerous advances in the development of water use law, including uniform treatment for ground and surface water withdrawals, water conservation, return flow, and prevention of environmental impacts. Building on 1986 WRDA (discussed above), the compact bans diversions of water out of the basin, but leaves it to individual states to decide whether to treat bottled water as a diversion subject to the ban.¹⁰⁹

V. Recommendations

This review and analysis of laws applicable to groundwater and spring water extraction by the water bottling industry highlights several problems with the status quo and opportunities for reform. As a general matter, because bottled water withdrawals impact groundwater systems at the local level, federal regulation does not seem appropriate. However, there are two specific actions that the federal government can and should take to address the problem and assist state governments and local communities. First, the FDA should revise its bottled water identity labeling regulations which have inadvertently caused water bottlers to seek extractions from springs – one of the most vulnerable freshwater resources. Second, the federal government should increase funding for data collection, research, and investigation regarding groundwater resources and use nationwide, a role that is critically important to both water users and managers.

At the state level, the continued evolution towards protective regulatory laws is a welcomed development. Most significant is the proposed Great Lakes compact, which would implement uniform protections for groundwater and surface water withdrawals, water conservation, return flow, and prevention of environmental impacts in eight states. The states have made passage of the proposed Great Lakes compact a priority, and Congress should ratify the compact immediately after it is passed by the states.

¹⁰⁶ Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Pennsylvania, New York, Ontario, and Quebec.

¹⁰⁷ Great Lakes-St. Lawrence River Basin Water Resources Compact, Dec. 13, 2005, *available at* http://www.cglg.org/projects/water/docs/12-13-05/Great_Lakes-St_Lawrence_River_Basin_Water_Resources_Compact.pdf [hereinafter Proposed Compact].

¹⁰⁸ See GREAT LAKES COMMISSION, TOWARD A WATER RESOURCES MANAGEMENT DECISION SUPPORT SYSTEM FOR THE GREAT LAKES-ST. LAWRENCE RIVER BASIN 9 (2003), *available at* <http://www.glc.org/wateruse/wrmdss/finalreport/pdf/WR-ExSum-2003.pdf>

¹⁰⁹ For a more thorough discussion of the proposed Great Lakes compact, see Noah D. Hall, *Toward A New Horizontal Federalism: Interstate Water Management in the Great Lakes Region*, 77 COLORADO L. REV. 405 (2006) (and discussion of the compact's treatment of bottled water at pages 443-44).

Appendix A – C.V.

Noah D. Hall

1402 Culver Road
Ann Arbor, Michigan 48013

(734) 646-1400
noahhall@umich.edu

Academic Appointments

University of Michigan Law School, Ann Arbor, MI

Visiting Professor, Winter 2008

Teaching: Water Law

Wayne State University Law School, Detroit, MI

Assistant Professor of Law, 2005 – present

Teaching: Environmental Law, Water Law, Administrative Law, International
Environmental Law, Advanced Topics in Environmental Law

University of Michigan Law School, Ann Arbor, MI

Adjunct Clinical Professor, Winter 2005

Teaching: Environmental Law Practicum

Education

University of Michigan Law School, Ann Arbor, MI, J.D., 1998

University of Michigan School of Natural Resources & Environment, Ann Arbor, MI,
B.S., *with distinction* 1995 (graduated in three years with concentration in Environmental
Policy and Behavior)

Publications – Books

ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY (with Zygmunt J.B.
Plater, Robert H. Abrams, Robert L. Graham, Lisa Heinzerling, and David A. Wirth) (4th
ed., Aspen Publishers, forthcoming 2009)

Publications - Articles

*Political Externalities, Federalism, and a Proposal for an Interstate Environmental
Impact Assessment Policy*, 32 HARVARD ENVIRONMENTAL LAW REVIEW __ (forthcoming,
2008)

(available at <http://ssrn.com/abstract=982929> and <http://works.bepress.com/noahhall/>)

Climate Change and Freshwater Resources (with Bret B. Stuntz, and Robert H. Abrams),
22 NATURAL RESOURCES & ENVIRONMENT __ (forthcoming, Winter 2008)

Transboundary Pollution: Harmonizing International and Domestic Law, 40 U. MICH.
J.L. REFORM 681 (2007) (lead symposium article)

The Evolving Role of Citizens in United States-Canadian International Environmental Law Compliance, 24 PACE ENVTL. L. REV. 131 (2007) (symposium article based on previously published work, presented at the IUCN Academy of Environmental Law, 4th Worldwide Colloquium, will also be published in abbreviated form by Cambridge University Press)

Toward A New Horizontal Federalism: Interstate Water Management in the Great Lakes Region, 77 COLORADO LAW REVIEW 405 (2006)

Bilateral Breakdown: U.S.-Canada Pollution Disputes, 21 NATURAL RESOURCES & ENVIRONMENT 18 (Summer 2006)

Publications - Book Chapters

“North American Transboundary Waters” in *THE EVOLUTION OF THE LAW AND POLITICS OF WATER*, Joseph W. Dellapenna & Joyeeta Gupta Eds. (forthcoming 2009)

Publications - Reports

“Climate Change and Great Lakes Water Resources” (with Bret B. Stuntz) prepared for the National Wildlife Federation (2007), available at <http://works.bepress.com/noahhall/>

Publications - Editorial Positions and Other Contributions

Editorial Board Member, *EASTERN WATER LAW & POLICY REPORTER* (2006)

Contributing Editor, 2006 *YEAR IN REVIEW* (published jointly by *ENERGY LAW JOURNAL* and American Bar Association Section of Environment, Energy and Resources, wrote section on Great Lakes water resources)

Contributing Editor, 2005 *YEAR IN REVIEW* (published jointly by *ENERGY LAW JOURNAL* and American Bar Association Section of Environment, Energy and Resources, wrote section on Great Lakes water resources)

Midwest Reporter, American Bar Association Water Resources Committee

Previous Legal Employment

National Wildlife Federation, Ann Arbor, MI

Senior Manager, Water Resources Program, 2003 – 2005

Developed new water resource policies for the Great Lakes region, working directly with governors and state legislatures to draft legislation and a proposed interstate compact/binational water management agreement for the Great Lakes

Minnesota Center for Environmental Advocacy, St. Paul, MN

Assistant Director, 2001 – 2003

Successfully litigated numerous matters involving wetland protection, environmental review, energy policy, and administrative law in state and federal trial and appellate courts

Leonard, Street and Deinard, Minneapolis, MN

Associate Attorney, 1999 – 2001

Practice focused on environmental and energy litigation for both private and non-profit clients

Clerkship

Minnesota Supreme Court, St. Paul, MN

Judicial Clerk, 1998 – 1999

Served as judicial clerk for the Honorable Kathleen A. Blatz, Chief Justice of the Minnesota Supreme Court

Litigation Accomplishments and Published Decisions

Fednav, Ltd. v. Chester, 505 F.Supp.2d 381 (E.D.Mich. 2007) – successfully represented *amici* bipartisan group of state lawmakers in a Constitutional challenge to a state law intended to prevent biological pollution in the Great Lakes

Glass v. Goeckel, 703 N.W.2d 58 (Mich. 2005) – successfully represented *amici* conservation organizations in nationally-recognized decision holding that the Great Lakes shorelines and beaches are protected by the public trust doctrine and open to recreational access

Michigan Citizens for Water Conservation v. Nestlé Waters North America Inc., 709 N.W.2d 174 (Mich.App. 2005) – successfully represented *amici* conservation organizations in precedent-setting decision unifying legal rules and protections between groundwater and surface water users

Mid States Coalition for Progress v. Surface Transp. Bd., 345 F.3d 520 (8th Cir. 2003) – successfully represented environmental organization in NEPA challenge to proposed coal train based on expected increases in national carbon dioxide (CO²) emissions

Minnesota Center for Environmental Advocacy v. Big Stone County Bd. of Com'rs, 638 N.W.2d 198 (Minn. Ct. App. 2002) – successfully represented environmental organizations in challenge to drainage practices, setting new precedent for applicability of environmental review and wetland protection laws to agricultural drainage activities

Associated Contract Loggers, Inc. v. U.S. Forest Service, 84 F.Supp.2d 1029 (D.Minn. 2000) – successfully defended environmental organization in SLAPP suit alleging interference with logging contracts and alleged establishment of religion of “deep ecology” in the United States Forest Service practices

Selected Invited Presentations

University of Toledo College of Law – Great Lakes Water Conference
(Toledo, OH, November 16, 2007)
Invasive Species in the Great Lakes

Michigan Senate, Environment and Natural Resources Committee
(Lansing, MI, November 14, 2007)
The Great Lakes Compact and Public Trust Doctrine

The Chicago Humanities Festival – Climate of Concern
(Loyola University, Chicago IL, November 10, 2007)
Governing the Great Lakes

The Property and Environment Research Center 2007 Conference – Fresh Water
(Big Sky, Montana, September 29, 2007)
Protecting Regional Water Resources

Great Lakes Legislative Caucus Annual Meeting
(Traverse City, Michigan, August 25, 2007)
Federal Litigation and the Battle Over Invasive Species

Harvard Law School, Environmental Law Faculty Workshop
(Cambridge, Massachusetts, June 13, 2007)
Political Externalities, Federalism, and a Proposal for an Interstate Environmental Impact Assessment Policy

University of Windsor (Canada) Faculty of Law – 2007 Wayne/Windsor Forum Lecture
(Windsor, Ontario, January 15, 2007)
Bilateral Breakdown: Going to Court Over U.S.-Canada Pollution Disputes

Michigan State University College of Law, Institute for Trade in the Americas – The Great Lakes Water Basin: International Law and Policy Crossroads
(Chicago, IL, December 2, 2006)
Federalism and Interstate Environmental Management

Council of Great Lakes Industries – Building a Sustainable Great Lakes Water Quality Agreement (Ann Arbor, MI, November 16, 2006)
Elements of Sustainable Development and the Role of Government

International Union for the Conservation of Nature and Natural Resources Academy of Environmental Law – 4th Worldwide Colloquium (New York, October 18, 2006)
The Evolving Role of Citizens in United States-Canadian International Environmental Law Compliance

University of Michigan Law School – The Great Lakes: Reflecting the Landscape of Environmental Law Symposium (Ann Arbor, MI, September 29, 2006)
Transboundary Pollution: Harmonizing International and Domestic Law

Government of Canada Policy Research Initiative – Freshwater for the Future (Ottawa, Ontario/Gatineau, Quebec, May 8-9, 2006)
Boundary Waters: Implementing an Ecosystem Approach / Managing Conflicting Interests

Canadian Bar Association – Annual National Environmental, Energy and Resources Law Summit: Canada-U.S. Cross-Border Issues (Toronto, Ontario, April 28, 2006)
Waterways, Waterwars: The Protection, Taking and Use of Water

International Joint Commission – The State of Groundwater in the Great Lakes Basin (Lansing, MI, March 9, 2006)
Reforming Public and Private Rights in Groundwater

Michigan Bar Association – Environmental Section Conference (Ann Arbor, MI, February 4, 2006)
Federal Jurisdiction for Wetlands Protection: The Clean Water Act in the Supreme Court

University of Toledo College of Law – The National Water Crises: Energy and Access for All (Toledo, OH, November 18, 2005)
New Legal Approaches to Controlling Access to Great Lakes Water

University of Michigan Law School – The World Today: Multi-Disciplinary Perspectives on Climate Change (Ann Arbor, MI, March 15, 2005)
Climate Change Litigation Strategies

Society of Environmental Journalists – 14th Annual Conference (Pittsburgh, PA, October 22, 2004)
Great Lakes Water Law and Policy

Selected Media Appearances

Detroit News – quoted in Jim Lynch, *Lansing Moves to Protect Lakes* (December 6, 2007)

Cleveland Plain Dealer – quoted in editorial, *Protecting Great Lakes Water is a Clear Necessity* (December 2, 2007)

Toledo Blade – quoted in Tom Henry, *Global Warming Predictions Rouse Great Lakes Lobbying* (November 28, 2007)

Milwaukee Journal Sentinel – quoted in Dan Egan, *Protect Waters Before It's Too Late* (November 28, 2007)

Buffalo News – quoted in Jerry Zremski, *Great Lakes Face Trouble on 2 Fronts* (November 28, 2007)

Chicago Tribune – quoted in Tim Jones, *Great Lakes Key Front in Water Wars* (October 28, 2007)

Milwaukee Journal Sentinel – quoted in Dan Egan, *A Water Query from Out West* (October 5, 2007)

Milwaukee Journal Sentinel – quoted in Dan Egan, *BP Backpedals on Increasing Lake Pollution* (August 23, 2007)

Windsor Star (Canada) – quoted in *Great Lakes Divide Slows Water Deal* (March 31, 2007)

Law Times (Canada) – profiled extensively and research quoted in Ron Stang, *Domestic Courts Used to Fight Environmental Cases* (Feb. 19, 2007)

Windsor Star (Ontario, Canada) – quoted extensively in *Prof Raps Pollution Laws* (January 16, 2007)

Michigan Public Radio – invited studio guest to provide commentary on water privatization disputes (December 18, 2006)

Michigan Public Radio – invited studio guest to provide commentary on *Massachusetts v. EPA* case argued before the U.S. Supreme Court (November 29, 2006)

Chicago Tribune – quoted in John Flesher, *Book Predicts Great Lakes Water Battles Will Intensify* (September 8, 2006) (this article also ran in numerous other newspapers, including the Detroit News and the Detroit Free Press)

Milwaukee Journal Sentinel – quoted in Dan Egan, *Who Should Be Able to Tap Great Lakes?* (July 16, 2006)

Milwaukee Journal Sentinel – quoted in Dan Egan and Darryl Enriquez, *Michigan Shuts Tap to Lake New Berlin Blocked in Request to Divert Water* (June 30, 2006)

Detroit News – quoted in Alison Bethel, *Michigan Cases Key to Wetlands* (February 21, 2006)

Michigan Public Radio – invited studio guest on “Points North” show to discuss Great Lakes water law (December 2, 2005)

Michigan Public Radio – provided commentary on *Glass v. Goeckel* case decided by the Michigan Supreme Court (September 2, 2005)

Awards for Teaching

Donald Gordon Award and Honorarium for Teaching Excellence (2007)

Izumi Family Fund/Pedagogical Innovations Grant Award (2006)

Consistently one of the highest rated faculty members based on Student Teaching Evaluations

Academic Service

Wayne State University Law School

Faculty Appointments Committee: member (2007-2008)

Institute for Continuing Legal Education: Executive Committee member (2005-2007)

Student Affairs Committee: chairperson (2006-2007), member (2005-2006)

Faculty advisor, Moot Court Program (2006-2007)

Faculty advisor, National Environmental Law Moot Court Competition (2005-2008)

Professional Memberships

American Bar Association (Section of Environment, Energy and Resources)

Michigan Bar Association (Environmental Section)

Association of American Law Schools (section on Environmental Law)

Bar Admissions

Michigan, 2003

Minnesota, 1998 (inactive)

Also admitted to Federal District Court for the District of Minnesota, Eastern District of Michigan, and Eighth Circuit Court of Appeals