

Safe Drinking Water Act Overview

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Since passage of the Safe Drinking Water Act (SDWA) in 1974, localities struggle to meet federal mandates that do not make sense in all drinking water systems. The U.S. Environmental Protection Agency (EPA) has based many of its rules on weak science, leading to needlessly onerous federal standards. As a result, localities are forced to spend limited resources on misguided federal priorities. Small systems are particularly hard hit, paying for standards that provide no verifiable benefits while diverting resources from legitimate needs (e.g., infrastructure upgrades and repairs, expansion of the water supply system). Unfortunately, 1996 amendments to the law failed to fix these fundamental flaws. Congress should focus on ways to give states and localities more power in setting priorities. After all, each locality has a better grasp of its particular needs and can better

express preferences about how the community wants to expend limited resources.

Statutory Scheme

The SDWA regulates about 54,000 existing public and private “public water systems.” These systems provide piped drinking water for 60 or more days a year to at least 25 individuals or to at least 15 service connections.¹ Approximately 15 million Americans draw water from unregulated “nonpublic water systems,” such as private wells.²

1. U.S. Environmental Protection Agency, *Drinking Water Infrastructure Needs Survey: Third Report to Congress* (Washington, DC: EPA, 2005), 1, <http://www.epa.gov/safewater/needssurvey>.

2. *Ibid.*

The EPA regulates more than 80 drinking water contaminants that might be found in the water of public water systems. For each regulated contaminant, the EPA usually specifies a maximum contaminant level goal (MCLG), which represents the level of a contaminant that the EPA ideally wants to allow in drinking water. The EPA uses the MCLG as a guide in setting the enforceable standard, the maximum contaminant level (MCL). The MCL represents the amount of that contaminant that systems may legally allow in tap water. For example, the EPA allows systems to provide only drinking water that contains no more than 0.005 milligrams of benzene per liter of water. When the EPA determines that it is technically or economically infeasible to monitor for a contaminant, it is directed by Congress to promulgate mandatory “treatment techniques,” such as mandatory installation of filtration devices.

History

Many fear that returning drinking water regulatory authority to the states will create more waterborne-related illnesses. However, history shows that states and localities were doing a commendable job long before federal involvement began. Local government and private industry created the drinking water supply system that we have today; the federal government did not get involved until well after the infrastructure and treatment technology had produced enormous health benefits.³ Long before the adoption of the SDWA, localities and private industry made much progress.

3. Michael J. LaNier, “Historical Development of Municipal Water Systems in the United States, 1876–1976,” *Journal of the American Water Works Association* 68, no. 4 (1976): 173–80.

Localities and the private sector had developed and used sand and carbon filtration; advanced water purification technologies (such as coagulation, rapid filtration, and chlorination); and copper sulfate additives (to improve taste and odor).

Deaths related to waterborne illnesses in the United States dropped from 75 to 100 per 100,000 people at the turn of the 20th century to fewer than 0.1 deaths per 100,000 annually by 1950, a result of local governments and industry having introduced chlorination in the 1880s.⁴ In the late 1960s and early 1970s, political pressure began to mount for the passage of enforceable federal standards. The federal government and others issued a number of studies indicating that drinking water quality was less than perfect. While Washington was debating the issue in 1973, a Gallup public opinion poll sponsored by the American Water Works Association (AWWA) indicated that 70 percent of those polled were happy with the quality of their drinking water.⁵ Some contend that public apathy began to change after the League of Women Voters, Ralph Nader groups, and even the AWWA worked to raise public “awareness” (i.e., fears).⁶ Despite the hype that led up to the passage of the SDWA in 1974, it appears that drinking water was not necessarily any worse than it had been in the past. Data from the EPA and the Centers for Disease Control and Prevention indicate that, overall, waterborne illnesses had most likely remained

4. *Ibid.*, 177.

5. “Water Quality and Public Opinion,” *Journal of the American Water Works Association* 65, no. 8 (1973): 513–19.

6. Peter N. Kyros, “Legislative History of the Safe Drinking Water Act,” *Journal of the American Water Works Association* 66, no. 10 (1974): 566–69.

level since 1920.⁷ And in some categories, serious outbreaks of waterborne illnesses such as typhoid fever declined.

In recent history, the largest and most serious outbreaks (in Milwaukee in 1993 and in Las Vegas in 1994) arose within large systems that regularly meet standards, indicating that federal regulation is inadequate for predicting and preventing new challenges. Unfortunately, such events occur without warning. But history indicates that drinking water suppliers have always been better than federal regulators at dealing with and eventually solving such problems.

Welfare Costs of Uniform Federal Standards

Giving states and localities greater authority in setting drinking water standards would allow them to spend their limited resources in a way that maximizes public health and well-being. Indeed, the circumstances facing the 200,000 public water systems around the nation vary tremendously. The U.S. Congressional Budget Office (CBO) notes that a system that allows localities flexibility would reduce costs.⁸ Currently, the financial resources involved are considerable:

- According to the CBO, the overall annual cost to comply with the SDWA ranges from \$1.4 billion to more than \$4 billion.⁹ How-

ever, recent estimates from the EPA indicate that the costs are likely much higher.

- Furthermore, the EPA estimates additional funds are necessary to upgrade infrastructure to meet drinking water needs, both for basic infrastructure and to meet regulatory costs. According to the agency, water supply systems will need a total of \$278.8 billion for infrastructure upgrades over the next 20 years.¹⁰ This estimate—which is 60 percent higher than EPA estimates in two earlier reports—indicates that infrastructure costs are growing faster than anticipated.¹¹
- EPA notes that \$45.1 billion of the 20-year costs may be “directly attributable” to regulatory mandates.¹² Of that amount, water systems need \$35.2 billion immediately to meet existing standards, and they will need an additional \$9.9 billion to cover the costs of recently promulgated regulations.¹³
- According to a 1999 report by the U.S. General Accounting Office (now the Government Accountability Office), compliance with current regulations costs about \$20 a year per household (about \$145 a year for systems serving 25 to 100 people).¹⁴ However, costs have increased substantially since this report came out, and they will continue to multiply many times over as new regulations come on line.

7. Gunther F. Craun, “Waterborne Disease Outbreaks in the United States of America: Causes and Prevention,” *World Health Statistics Quarterly* 45, no. 2–3 (1992) 192–95.

8. CBO, *Federalism and Environmental Protection: Case Studies for Drinking Water and Ground-Level Ozone* (Washington, DC: CBO, 1997), 18, <http://www.cbo.gov/ftpdoc.cfm?index=250&ctype=0&sequence=0>.

9. *Ibid.*, 17.

10. EPA, *Drinking Water Infrastructure Needs Survey*, 15.

11. *Ibid.*, 5.

12. *Ibid.*, 29.

13. *Ibid.* These estimates cover the disinfection byproducts phase I rule, the radon rule, the arsenic rule, and others.

14. U.S. General Accounting Office, *Safe Drinking Water Act: Progress and Future Challenges in Implementing the 1996 Amendments*, GAO.RCED-99-31 (Washington, DC: U.S. General Accounting Office, January 1999), 7.

Drinking Water and Cancer

In addition to addressing acute drinking water illnesses, the SDWA was designed to reduce cancer risks. But are cancer risks really significant, and can EPA actually eliminate them?¹⁵ Consider some facts:

- Using very conservative estimates, the EPA estimated in *Unfinished Business* that drinking water contamination causes between 400 and 1,000 annual cancer cases.¹⁶ However, it is important to note that the EPA numbers are largely based on cancer risks as determined by rodent studies that may be seriously flawed.
- Using the EPA's estimates, which likely overstate the risks, scientist Michael Gough converted those estimates into actual cancer deaths, because not all cancers result in death, and came out with 240 to 591 possible annual drinking water deaths.¹⁷
- Using the U.S. Food and Drug Administration's (FDA) process for assessing risks, Gough found that annual cancer deaths caused by drinking water contamination might range somewhere between 56 and 407 a year.¹⁸ These estimates indicate that cancer risks from drinking water are extremely small and difficult to address through regulation.
- In their landmark study on cancer, scientists Richard Doll and Richard Peto noted "with

15. See also "Chemical Risk" in *The Environmental Source*.

16. U.S. Environmental Protection Agency, *Unfinished Business: A Comparative Assessment of Environmental Problems—Overview Report* (Washington, DC: EPA, February 1987), 30.

17. Michael Gough, "How Much Cancer Can EPA Regulate Anyway?" *Risk Analysis* 10, no. 1 (1990): 5.

18. *Ibid.*

the possible exception of asbestos in a few water supplies, we know of no established human carcinogen that is ever present in sufficient quantities in large U.S. water supplies to account for any material percentage of the total risk of cancer."¹⁹

The Worst Is Yet to Come

Many of the contaminants regulated in the past—most of which were industrial chemicals that accidentally entered water supplies—did not appear in most water supplies. Hence, although these contaminants carry with them expensive monitoring mandates, they did not all trigger the need to invest in expensive infrastructure. But several upcoming regulations will soon demand astronomical investments. Many of these rules address naturally occurring contaminants,²⁰ which are more prevalent in drinking water systems nationwide and will require very expensive efforts to eliminate. To add insult to injury, localities may reap no benefits from these rules because the EPA science underlying them is seriously flawed. Three such cases are detailed in these briefs: the disinfection byproduct rule, the radon rule, and the arsenic rule.

Legislative Solutions

The best solution would be to return full authority for standard setting to the states and to allow states to work with localities to meet

19. Richard Doll and Richard Peto, "The Causes of Cancer: Quantitative Estimates of Avoidable Risks of Cancer in the United States Today," *Journal of the National Cancer Institute* 66, no. 6 (June 1981): 1249.

20. These contaminants are largely byproducts of nature, such as radon, which is radiation that results from the decomposition of radium and uranium present in soil and rock.

their specific needs. However, if the federal government remains involved, there are ways to help empower localities within a federal framework. Congress should engage in greater congressional review of safe drinking water rules to ensure that the EPA has indeed used the “best available science,” as demanded under

the law. If large questions remain over science and standards are likely to impose considerable costs, Congress should preempt the overly stringent standard. Congress also could amend the drinking water law to grant states discretion on how they regulate naturally occurring contaminants, such as radon and arsenic.

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