

Water Unsecured: Public Drinking Water Is Vulnerable to Terrorist Attack

In his 2002 State of the Union address, President Bush warned that U.S. soldiers fighting in Afghanistan found diagrams of U.S. public water facilities.¹ Later that year, federal officials arrested two suspects in Denver with documents describing how to poison U.S. water supplies.² One of those suspects pled guilty to aiding the Taliban and was released from federal prison in 2004 after providing what prosecutors called “substantial assistance to the government against substantial targets.”³

Few acts of sabotage could be more insidious than delivering poison into a family’s home through tap water. Yet threats to public health and safety are not the only dangers posed by attacks on the nation’s 170,000 public water systems. A disruption in the water supply could also mean that a fire department cannot fight a fire, or that crops would be ruined. In addition, manufacturing, energy generation and any number of other water-intensive industries could be devastated by physical or contaminant attacks on local or regional water systems. Water is a necessity of life, and perhaps the most basic and crucial of society’s public services.

The Bush administration is failing to give water security challenges the attention they deserve. The administration not only has failed to sufficiently fund municipal efforts to protect water supplies from attack, but also has neglected the backlog of infrastructure expansions and repairs demanded by aging and overstretched water and wastewater systems – a backlog that in and of itself poses a potential threat to public health and safety.

In fact, the administration is playing into the hands of huge international conglomerates seeking to choke off federal financial assistance for water and wastewater infrastructure, in the hopes that cash-strapped cities will be forced to turn to radical solutions such as water privatization. A privatized water system could be even less secure because corporate owners would almost certainly resist the implementation of a strong regulatory oversight regime.

The companies at the forefront of the privatization push – the French giants Suez and Veolia and the German conglomerate RWE – have been engaged in a feeding frenzy of acquisition and consolidation in recent years. All three companies have made a serious push to privatize water in the United States, primarily through the acquisition of formerly U.S.-owned companies such as United Water (Suez), USFilter (Veolia) and American Water Works (RWE).

Soft Targets: Water System Vulnerabilities

The water distribution network – the pumping stations, storage tanks and pipes that cover thousands of miles within a metropolitan area – provides countless opportunities to introduce biological, chemical or radiological contaminants and invites physical attacks that could interrupt water supply. The Government Accountability Office (GAO) surveyed a panel of more than 40 nationally recognized experts on water system security. Those experts identified distribution systems as the element in city water system most vulnerable to attack. Experts noted that since the water in the distribution system has already been treated and is in the final stage of delivery to the consumer, introduction of harmful agents “would be virtually undetectable until it has affected consumers.”⁴

A community’s water may come from rivers, lakes, reservoirs, underground sources or any combination thereof, presenting ample opportunity for sabotage. Source waters can cover vast areas that are difficult to protect and defend. Intake transmission lines transferring water from sources to treatment plants are also vulnerable to attack.⁵

Increasingly, computers are used to monitor and operate water systems, rendering the systems vulnerable to cyber-terrorists. For instance, upon hacking into a community water system’s computers, assailants from a remote location could release harmful levels of water treatment chemicals into water prior to distribution to consumers.⁶

Community water and wastewater systems traditionally treat water with chemicals such as chlorine, chloramines or chlorine dioxide, to remove bacteria or other contaminants. An assault on stored chemicals, particularly gaseous chlorine, could release a cloud of toxic gas into a densely populated area. Indications of the seriousness of the threat include:

- As recently as 1999, at least 62 wastewater treatment plants alone reported “that a major chemical accident at their facility could affect 100,000 or more people.”⁷
- At each of five wastewater plants in the United States – Denver, Modesto, Calif., Detroit, Salt Lake City and Tampa – a major chemical accident could affect more than 900,000 people.⁸
- As of 2003, at eight water treatment plants – three within Southern California’s Metropolitan Water District, and one each in the metro areas of St. Paul, Houston, Nashville, New Orleans and Dallas-Fort Worth – a major chemical accident could affect more than 900,000 people.⁹

Chemicals added to water supplies pose an additional threat in that they could be altered or contaminated at the treatment plant, subsequently contaminating the water itself.¹⁰

The experts surveyed by the GAO identified two “overarching issues” affecting security of the nation’s drinking water systems. The first was the absence of back-up systems in light of the need for redundancy – the “linear” structure of many water systems means that an attack on a single point in the system could render the entire system contaminated or inoperable. Second, the experts observed that most utilities lack sufficient information to recognize and understand which vulnerabilities pose the greatest threat to individual water systems.¹¹

In the meantime, multiple, coordinated attacks on water systems in a number of cities – either a physical attack on facilities or an attack that contaminates water supplies – could inflict severe damage not only on the residents of individual communities, but on regional industries, with ripple effects that could harm the economy. For example, if a coordinated attack of bombings were to take down many reservoirs at once, “the economic impacts would be astronomical,” observed Jeffrey Danneels, a leading water security researcher at Sandia National Laboratories in New Mexico.¹²

Coming Up Short: The Department of Homeland Security’s Efforts to Contain the Threat

The Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (Bioterrorism Act) required communities in which drinking water systems serve more than 3,300 people to conduct assessments of their vulnerabilities to terrorism by June 30, 2004. Communities must provide those assessments to the Environmental Protection Agency (EPA) and prepare emergency response plans in accordance with the threats discovered.¹³ The Department of Homeland Security, pointing specifically to the vulnerability assessment requirements in the Bioterrorism Act, contends that cities have taken “great strides” toward protecting water resources from terrorism.¹⁴

Unfortunately, the mandates placed on the nation’s cities have not been accompanied with realistic financial support.

- The Bioterrorism Act authorized \$160 million for the vulnerability assessment program.¹⁵ The EPA ultimately provided \$113 million.¹⁶
- The American Water Works Association (AWWA), an organization of water supply and system professionals, estimates the cost of conducting vulnerability estimates nationwide at \$500 million.¹⁷
- The administration capped the maximum individual grant for vulnerability assessments at \$115,000.¹⁸ AWWA estimates the cost of conducting a vulnerability assessment of a large water system from a minimum of \$100,000 to “several million dollars.”¹⁹

AWWA estimates that the costs of merely first steps – fences, locks, lights and alarms – will run as high as \$1.6 billion nationally.²⁰

Water security experts surveyed by the GAO note that “the likelihood exists that Congress and the administration will be asked to provide much larger sums to go beyond *planning* for upgrading drinking water security to the *implementation* of security upgrades. By most accounts, it will cost billions of dollars to upgrade security for drinking water utilities.”²¹

That could be a problem. A “report card” recently released by members of a Senate Democratic task force on homeland security through the office of U.S. Sen. Charles Schumer (D-N.Y.) echoes the concerns raised by security experts – that cities have scrambled and scraped to complete vulnerability assessments and now must incur the additional costs to implement their findings. “However,” the Schumer report notes, “there is no federal funding mechanism in place to assist the ... public water systems nationwide [to pay] for security upgrades.”²²

Although the Bioterrorism Act requires communities to submit copies of vulnerability assessments to the EPA, it is by no means clear that the EPA is in a position to use these assessments to determine federal funding needs or priorities. In an effort to keep sensitive information from falling into the hands of terrorists, the Bioterrorism Act precludes the EPA from disclosing any information derived from the vulnerability assessments – effectively exempting the assessments from the Freedom of Information Act. As a result, according to the GAO study, the EPA “would have difficulty, for example, in citing vulnerability assessment findings to support decisions or recommendations on allocating security-related funds among utilities, as well as decisions concerning research priorities or guidance documents.”²³

Forty-six states and the District of Columbia have exempted water system security information from public disclosures under Freedom of Information Act requests.²⁴ But the impulse to protect sensitive information must not be an excuse for the EPA to tie itself up in knots to the point that vulnerability assessments are too secret to be considered when determining funding levels – as experts warned in the GAO report.

The Competing Agenda: Pressure From Private Water Industry Chokes Federal Money for Security and Safety

Adding insult to injury, while there remains no mechanism for providing direct grants to cities to upgrade water security – the funding method cited as the most effective by the experts surveyed by the GAO²⁵ – the Bush administration has consistently tried to cut funding of existing federal water infrastructure programs.²⁶ In three of the last four fiscal years, the administration has proposed cutting the budget for the Clean Water State Revolving Loan Fund to pay for wastewater system upgrades from \$1.35 billion annually to \$850 million.²⁷ The administration resisted calls to raise the Safe Drinking Water Revolving Loan Fund, which provides assistance for water system upgrades.²⁸ Administration officials have even testified that the president is opposed to increasing federal funding for water infrastructure.²⁹

Core infrastructure funding is in and of itself a security concern. The EPA has estimated there will be an enormous gap, perhaps as much as \$500 billion or more, between what is expected to be spent on infrastructure maintenance and what must be spent upgrading plants, pipes and other components that deliver safe water to taps and remove waste from homes and businesses over the next two decades.³⁰ As a 2002 report by the National Academy of Sciences (NAS) noted, “It makes little sense to improve the security of our water system against terrorism without addressing the history of deferred maintenance of the water infrastructure. One of the best and most cost-effective ways to make the water infrastructure more robust against malicious threats is to return its physical condition to a satisfactory level of repair.”³¹

So why has the administration tried time and again to slash funding for existing water upgrade programs? If new monitoring technologies, filtration components or even modernized pumps and storage facilities not only would make systems safer from a public health standpoint but, as the NAS report notes, reduce a system’s vulnerability to attack, why has the administration fought to curtail federal spending on water and wastewater systems?

One answer may be that the transnational private water corporations such as Veolia, Suez and RWE, along with U.S. firms such as Aqua America (formerly Philadelphia Suburban), Southwest Water, OMI, and numerous affiliates and smaller companies, would like to gut federal funding for water systems.

The private water companies view water as a commodity from which to derive profits, rather than a public resource to be managed in the public interest, and have lobbied Congress to curtail federal assistance, which the companies view as an unfair advantage that keeps cities from turning to privatization. As the executive director of the companies’ lobbying arm, the National Association of Water Companies (NAWC), puts it: “We do not see why drinking water and the wastewater utility services should be substantially subsidized by the federal government.”³² From 1997 through 2003, the NAWC has spent more than \$2.3 million lobbying Congress and the federal government.³³

That investment appears to have paid off.

- Administration-backed language in legislation to reauthorize existing federal water funding assistance programs would require cities to consider water privatization before they could receive federal funding.³⁴
- In lockstep with private industry’s goals, the EPA is increasingly playing down the role of federal financial assistance while actively encouraging communities to pay for system upgrades by raising rates to consumers³⁵ – exactly the strategy the industry hopes will drive cash-strapped and embattled local politicians to opt for the false promise of privatization.

The U.S. Conference of Mayors' (USCM) Urban Water Council, which is heavily sponsored by private water companies (USCM's Web site has long been sponsored by Veolia's U.S. arm), also lobbies Congress to curtail federal assistance. Testifying before a congressional committee in April, the Urban Water Council skimmed over the federal role in helping cities meet infrastructure upgrade needs, focusing instead on the industry's desire for regulatory changes that would allow more local public funding of private water companies.³⁶ The industry opposes federal assistance to cities but welcomes public subsidies to companies.

If industry is successful in securing favorable regulatory, tax and legislative initiatives that promote privatization, water systems will in all likelihood be less secure. Privatization introduces "new uncertainties" with regard to water system security, according to a 2002 report by the National Academies of Science. In particular, heightened security requirements raise questions about "the willingness of the private sector to assume the attendant risks under today's laws and insurance markets."³⁷

The Department of Homeland Security's most decisive step with regard to protection of privately owned and operated critical infrastructure systems may be the department's information sharing system. Yet even this is optional, as companies are asked "to *voluntarily* submit infrastructure information to the Federal government to assist the Nation in reducing its vulnerability to terrorist attacks."³⁸ (Emphasis added.)

Water Safety and Security Are Inextricably Intertwined

The professionals who operate the nation's water and wastewater facilities, along with security experts who have analyzed those facilities, have identified many steps that, with appropriate support from the administration and Congress, would protect the public from the threats posed by acts of terrorism against water or wastewater facilities.

For instance, many communities have switched their water and wastewater systems to safer chemicals and technologies such as sodium hypochlorite (liquid chlorine) and ultraviolet light, eliminating the threat posed by chlorine gas. Of the 62 wastewater facilities reporting in 1999 that a chemical accident could affect 100,000 people or more, at least 12 have eliminated the use of chlorine gas. And seven of those – in Baltimore, New Jersey, Washington, D.C., Atlanta, the Detroit area, and two plants in Philadelphia – were among the largest wastewater treatment facilities in the nation, each with more than 1 million people living within a vulnerable vicinity.³⁹

Federal legislation that would address this problem has been blocked by the Bush administration and the chemical industry. Known as the "Chemical Security Act" and sponsored by U.S. Sen. Jon Corzine (D-N.J.), it would require all facilities using large quantities of dangerous chemicals, including water and wastewater plants, to shift to safer chemicals and technologies, when a shift is cost effective.⁴⁰

In the meantime, technologies are being developed to provide near real-time monitoring of chemical, biological or radiological contaminants. The monitors can be

placed at various points throughout the distribution system or even at the “point of service,” alerting consumers directly.

The majority of experts surveyed by the GAO agreed that expansion of research and development of real-time monitoring technologies is the highest-priority water security upgrade in the nation. “Significantly, almost 70 percent of the experts rated this activity as warranting the highest priority for federal funding – far surpassing the rating of any other category,” the GAO reported, adding, “Most of these experts indicated that smaller utilities would be unable to use these technologies without federal support.”⁴¹

Other recommendations from the experts surveyed in the GAO report include:⁴²

- Increasing the capacity of laboratories to test for a full range of contaminants. The GAO report noted that a study from the National Academies of Science raised similar concerns, concluding that a “dearth of laboratory capacity poses a serious limitation to our ability to respond to a contamination attack on the water system.”
- Hardening assets and completing other physical improvements such as fences, locks and surveillance equipment.
- Establishing engineering building concepts geared more toward security and protection.
- Mandating “backflow protections” to block contaminated water from flowing back into the distribution system and making its way to more consumers.
- Additional testing and beefed-up security on computer systems.
- Developing computer models of terrorist attacks to better understand the nature of the threats and gauge the distribution system’s performance in the event of an attack.
- Establishing accurate baseline measurements of concentrations of certain chemicals typically found in a drinking water system.
- More research on membranes, filters and other treatment technologies to better treat potential chemical or biological agents.
- The experts surveyed by the GAO noted the need for additional education and training, and enhanced coordination and communication between water systems and each other, as well as between water systems and public health and safety officials.

The Water Industry's Campaign Contributions to Bush

As industries go, the private water utility industry is a small player in the Washington money game, mostly likely because it's a fledgling industry. Remarkably, 92 percent of the contributions to Bush's campaign efforts from the privatized water utility industry have come from one company: American Water Works Co. In fact, nearly all of the industry's support for Bush can be traced to Bush Pioneer Marilyn Ware, former chairwoman of American Water Works, and her immediate family.

The National Association of Water Companies (NAWC), the industry's main trade association, boasts 20 active members. That membership is composed of three large international conglomerates – Aqua America, Suez and RWE, which bought American Water Works in 2003, their subsidiaries and 11 independent companies. Seven water utilities and their employees made campaign contributions to the Bush campaign or the Republican National Committee during the past three election cycles, giving nearly \$879,000. [See Figure 1.]

The water utility industry also includes companies outside the NAWC, such as French giant Veolia and C2HM Hill, owner of OMI, which has given \$35,000 to the RNC since 2000. [For a complete list of campaign contributions by company, see Figure 1.]

Figure 1
Water Utility Industry Contributions to Bush Campaign & RNC
2000-2004

Company / Organization (Parent Company)	Election Cycle						Total
	2000		2002		2004		
	Bush	RNC	Inaugural	RNC	Bush	RNC	
American Water Works (RWE)	\$1,000	\$398,300	\$50,000	\$306,064	\$4,000	\$50,225	\$809,589
Aqua America	--	--	--	--	\$750	--	\$750
California Water Service Company	\$2,000	--	--	--	\$2000	--	\$4,000
Citizens Communication Company	--	--	--	--	\$500	--	\$500
OMI (CH2M Hill)	--	\$15,000	--	\$20,000	--	--	\$35,000
US Filter	\$1,000	--	--	--	--	--	\$1,000
United Water (Suez)	\$7,250	\$1,000	--	\$17,775	\$225	\$1,700	\$27,950
Total	\$11,250	\$414,300	\$50,000	\$323,839	\$7,475	\$71,925	\$878,789

Source: Public Citizen analysis of data provided by the Center for Responsive Politics. Totals include contributions from political action committees and individual members or employees of an organization, as well as unrestricted "soft money" donations from individuals and corporate treasuries before the 2004 election cycle (when such donations became illegal). Contribution data are as of Oct. 1, 2004.

Prominent Water Executive is Bush Pioneer and Partisan Political Player

Marilyn Ware was named a Bush Pioneer after raising at least \$100,000 for Bush's 2004 campaign. But she and members of her family have contributed nearly \$810,000 to Bush, the RNC and the Bush-Cheney Inaugural Committee since the 2000 election cycle.⁴³

Ware also serves on the board of Progress for America (PFA), a Section 527 group dedicated to running ads in support of Bush's re-election.⁴⁴ Progress for America claims to have raised more than \$35 million, chiefly from five major funders who are each Rangers or Pioneers.⁴⁵ The group was founded by Tony Feather, the political director of Bush's 2000 campaign and a consultant for Bush's 2004 campaign.⁴⁶ PFA has been represented by Benjamin Ginsberg, who was counsel to Bush's 2004 campaign until it was revealed that he was also serving as counsel to Swift Boat Veterans for Truth, another Section 527 group, which ran highly controversial and misleading ads blasting

Sen. John Kerry's service in Vietnam.⁴⁷ Those ads have run in Nevada, New Mexico, Wisconsin and Iowa, and were planned for Missouri, Minnesota and Ohio.⁴⁸

Ware was chairwoman of American Water Works from 1988 until it was bought by Germany's RWE for \$8.6 billion in 2003.⁴⁹ At the time, Ware possessed nearly 5 million shares in American Water Works – which RWE bought at \$46 a share.⁵⁰ She remains an adviser to the company,⁵¹ which has benefited from Bush administration policies encouraging water privatization. Ware has been able to help shape those policies on the National Infrastructure Advisory Committee (NIAC), to which Bush appointed her in 2002. The NIAC makes recommendations to the president on national security aspects of the country's infrastructure.⁵²

Water Industry Lobbies for Private Sector Access to Funds

In 2002, when the water utility industry did most of its federal lobbying, the Bush administration opposed increases in funding to state revolving funds, which provide money for local water system infrastructure, in favor of shifting infrastructure responsibilities to the private sector. At the same time, the NAWC was pushing for private sector access to the existing funds, which were dedicated to public water systems. The administration blocked increases in the state funds, but the private companies have not yet gained access to them.⁵³

The water utility industry's lobbying efforts after 9/11 focused on homeland security bills that appropriated money to secure the water infrastructure. The water utility industry spent more than \$1.2 million on efforts to influence the federal government from January 2002 to July 2004, the most recent data available. [See Figure 2.]

The NAWC led the industry's lobbying efforts, spending \$880,000 during the past three years to lobby Congress and the Environmental Protection Agency on water infrastructure and security issues. RWE, CH2M Hill, and United Water, a subsidiary of Suez, also lobbied on water infrastructure issues. [See Figure 2.]

**Figure 2
Water Utility Industry Lobbying by Company and Overall
2002-2004**

Company / Organization (Parent Company)	2002	2003	2004*	Total
American Water Works (RWE)	\$260,000	--	--	\$260,000
CH2M Hill	\$40,000	\$20,000	--	\$60,000
National Association of Water Companies (NAWC)	\$400,000	\$400,000	\$80,000	\$880,000
United Water (Suez)	\$40,000	--	--	\$40,000
Total	\$740,000	\$420,000	\$80,000	\$1,240,000

Source: Public Citizen analysis of lobby disclosure reports filed with the Secretary of the Senate and Clerk of the House, 2002-2004. Dollar amounts reflect the total federal lobbying expenditures by companies and organizations during reporting periods in which they lobbied on water infrastructure and security issues. Lobby disclosure reports do not itemize expenditures for specific lobbying issues or bills.

*Totals include lobbying through June 30, 2004. As of October 1, mid-year 2004 lobby disclosure forms were unavailable for some firms that lobbied in prior years.

Conclusion

An administration that values public health and safety should recognize that there are ways to protect people from assaults on that most basic and necessary of public services – water. But taking the necessary steps will require acting in the interest of people, rather than corporations that aim to control water for profit. A decades-long national commitment to safe and clean water had been allowed to wane well before politicians began referring to the nation as the “homeland” and vowing to secure it. Now, more than ever, a security-conscious president should lead the nation to reaffirm that public – not private – commitment.

Leading Experts on Water System Security:

Jeff Danneels, Sandia National Laboratories
 Kevin Bennett, Federal Bureau of Investigation National Infrastructure Protection Center
 Dennis Juranek, Centers for Disease Control and Prevention
 Michael Keegan, National Rural Water Association

Appendix A of the Government Accountability Office report, “Drinking Water: Experts’ Views on How Future Federal Funding Can Best Be Spent to Improve Security,” lists the experts who participated in the GAO survey.

Endnotes

- ¹ President George W. Bush, State of the Union Address, Jan. 29, 2002, available at <http://www.whitehouse.gov/news/releases/2002/01/20020129-11.html>.
- ² Carl Cameron, "Feds Arrest Al Qaeda Suspects With Plans to Poison Water Supplies," Fox News, July 30, 2002, available at <http://www.foxnews.com/story/0,2933,59055,00.html>.
- ³ "'Unusually light' prison sentence given to Ujaama," *Seattle Times*, Feb. 14, 2004.
- ⁴ U.S. Government Accountability Office, *Drinking Water: Experts' Views on How Future Federal Funding Can Best Be Spent to Improve Security*, report to the Senate Committee on Environment and Public Works, October 2003, p. 24.
- ⁵ *Ibid.*, p. 25.
- ⁶ *Ibid.*, p. 26.
- ⁷ Carol Andress et al., *Eliminating Hometown Hazards: Cutting Chemical Risks at Wastewater Treatment Facilities*, Environmental Defense, 2003.
- ⁸ *Ibid.*
- ⁹ Environmental Defense, "Drinking Water Facilities Over 1 Mile," spreadsheet prepared from risk management plans.
- ¹⁰ U.S. Government Accountability Office, *Drinking Water: Experts' Views on How Future Federal Funding Can Best Be Spent to Improve Security*, report to the Senate Committee on Environment and Public Works, October 2003, p. 27.
- ¹¹ *Ibid.*, pp. 28-29.
- ¹² John Bebow, "Nation's Water is an Easy Target," *The Detroit News*, Aug. 4, 2002.
- ¹³ 42 USC 401 (Bioterrorism Act).
- ¹⁴ Department of Homeland Security, *National Strategy for the Physical Protection of Critical Infrastructures and Key Assets*, February 2003, available at http://www.dhs.gov/interweb/assetlibrary/Physical_Strategy.pdf.
- ¹⁵ 42 USC 401.
- ¹⁶ Office of Sen. Charles Schumer, D-NY, "New Schumer Homeland Security Report Card: 3 Years Later, Feds' Efforts Still Leave New York Dangerously Unprotected," Sept. 12, 2004.
- ¹⁷ American Water Works Association, *Protecting Our Water: Drinking Water Security in America After 9/11*, available at <http://www.awwa.org/advocacy/Water%20Security%20in%20America%20Final.pdf>.
- ¹⁸ "Three years Later: Is the Federal Government Doing Enough to Protect the Nation? Grading the Homeland Security Effort," Office of Sen. Charles Schumer (D-N.Y.), Sept. 14, 2004.
- ¹⁹ *Ibid.*
- ²⁰ *Ibid.*
- ²¹ U.S. Government Accountability Office, *Drinking Water: Experts' Views on How Future Federal Funding Can Best Be Spent to Improve Security*, report to the Senate Committee on Environment and Public Works, October 2003, p. 19.
- ²² Office of Sen. Charles Schumer, D-NY, "New Schumer Homeland Security Report Card: 3 Years Later, Feds' Efforts Still Leave New York Dangerously Unprotected," Sept. 12, 2004.
- ²³ U.S. Government Accountability Office, *Drinking Water: Experts' Views on How Future Federal Funding Can Best Be Spent to Improve Security*, report to the Senate Committee on Environment and Public Works, October 2003, p. 34.
- ²⁴ Cathy Atkins and Larry Morandi, *Protecting Water Security System Information*, National Conference of State Legislatures, September 2003.
- ²⁵ *Ibid.*, p. 38.
- ²⁶ Darren Samuelsohn, "Senate Panel Bumps EPA Budget up to \$8.5 Billion, Restores CWSRF Funding," *Energy and Environment Daily*, Sept. 22, 2004.
- ²⁷ "Standing at the Crossroads: The Bush Administration and the Anniversary of the Clean Water Act," report prepared by the Democratic staff of the House Committee on Transportation and Infrastructure, Oct. 18, 2003.
- ²⁸ "Senate panel bumps EPA up to \$8.5 billion, restores CWSRF funding," *Energy and Environment Daily*, Sept. 22, 2004.
- ²⁹ Benjamin Grumbles, Deputy Assistant Administrator of EPA's Office of Water, testimony before the Subcommittee on Water Resources and Environment, March 13, 2002.

-
- ³⁰ Environmental Protection Agency Office of Water, *The Clean Water and Drinking Water Infrastructure Gap Analysis*, September 2002.
- ³¹ The National Research Council of the National Academies, *Making the Nation Safer: The Role of Science and Technology in Countering Terrorism*, 2003, p. 248.
- ³² “Outlook for the Water Industry,” *The Wall Street Transcript*, June 7, 2004, p. 51.
- ³³ Center for Responsive Politics lobbying reports for the years 1997-2000 and NAWC lobbying disclosure forms filed with the Secretary of the Senate for 2001-2003.
- ³⁴ H.R. 1560, Sec. 302.
- ³⁵ Environmental Protection Agency, “Sustainable Water Infrastructure for the 21st Century,” available at <http://www.epa.gov/water/infrastructure/index.htm>.
- ³⁶ Mayor David G. Wallace, testimony before the House Subcommittee on Water Resources and the Environment, April 28, 2004.
- ³⁷ The National Research Council of the National Academies, *Making the Nation Safer: The Role of Science and Technology in Countering Terrorism*, 2003, p. 252.
- ³⁸ Department of Homeland Security, “DHS Launches Protected Critical Infrastructure Information Program to Enhance Homeland Security, Facilitate Information Sharing,” Department of Homeland Security press release, Feb. 18, 2004, available at <http://www.dhs.gov/dhspublic/display?theme=31&content=3249>.
- ³⁹ Carol Andress et al., *Eliminating Hometown Hazards: Cutting Chemical Risks at Wastewater Treatment Facilities*, Environmental Defense, 2003. Baltimore has switched from chlorine gas since publication of the ED report, according to Carole Andress, the report’s author.
- ⁴⁰ Ibid.
- ⁴¹ U.S. Government Accountability Office, *Drinking Water: Experts’ Views on How Future Federal Funding Can Best Be Spent to Improve Security*, report to the Senate Committee on Environment and Public Works, October 2003, pp. 44-45.
- ⁴² Ibid, pp. 47-65.
- ⁴³ Public Citizen analysis of data provided by the Center for Responsible Politics, available at <http://www.opensecrets.org>.
- ⁴⁴ Thomas Edsall, “GOP Creating Own ‘527’ Groups,” *Washington Post*, May 25, 2004.
- ⁴⁵ Jeanne Cummings, “Republicans Tap Rich Donors to Form Group Targeting Kerry,” *Wall Street Journal*, Aug. 25, 2004.
- ⁴⁶ Peter Stone, “Republican 527s: Full Steam Ahead,” *National Journal*, May 29, 2004.
- ⁴⁷ Dan Balz and Thomas Edsall, “Lawyer Quits Bush-Cheney Organization,” *Washington Post*, Aug. 26, 2004.
- ⁴⁸ Jeanne Cummings, “Republicans Tap Rich Donors to Form Group Targeting Kerry,” *Wall Street Journal*, Aug. 25, 2004.
- ⁴⁹ Biography of Marilyn Ware and profile of American Water Works, *The Center for Public Integrity*, available at <http://www.publicintegrity.org>, accessed October 11, 2004. See also “German Giant Taking Over American Water Supply,” Associated Press, Feb. 11, 2003.
- ⁵⁰ American Water Works reported in its last proxy statement, available at <http://www.sec.gov/Archives/edgar/data/318819/000095010902001715/ddef14a.htm>, that Ware possessed 4,914,260 company shares. When the company was acquired by RWE, AWW shareholders were paid \$46 per share according to an AWW press release on January 17, 2002, available at <http://www.waternunc.com/gb/awwc14.htm>, accessed October 11, 2004.
- ⁵¹ American Water Works press release, October 3, 2002, available at <http://64.233.167.104/search?q=cache:ERz-tOv-pj4J:www.amwater.com/awpr/news/news1959.html+%22Economic+Advisory+Board%22+RWE+%22marilyn+ware%22&hl=en&start=3>, accessed October 11, 2004.
- ⁵² American Water Works, “American Water Works Chairman Appointed by President Bush to Serve on Key Infrastructure Advisory Committee,” press release Sept. 20, 2002, available at <http://www.amwater.com/awpr/news/news1891.html>, accessed October 11, 2004.
- ⁵³ “EPA Stands Out as Opposed To Water Infrastructure Bill,” *Clean Water Report* (Business Publishers Inc.), March 11, 2002.