Legal Issues Associated with Safe Drinking Water in Washington, D.C.

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INTRODUCTION

In August 1996, the United States Congress enacted the Safe Drinking Water Act Amendments of 1996 ("SDWA Amendments"). In Section 306 of the SDWA Amendments, the U.S. Congress encouraged and authorized Washington, D.C., Arlington County, Virginia; and the city of Falls Church, Virginia, to create a public water system to own and operate the Washington Aqueduct, which has provided Washington, D.C. with drinking water since 1859.

Relative to thousands of public water systems throughout the United States, which are generally owned and operated by municipal agencies, the Washington Aqueduct is unique in one critical respect. The Washington Aqueduct is owned and operated not by a municipal public water system but by the United States Army Corps of Engineers ("Corps"). Section 306 of the SDWA Amendments, however, contemplated the transfer of the Washington Aqueduct from the Corps to a local, non-federal, municipal system. Congress passed the statute, in part, as a response

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5 42 U.S.C. § 306(c)-(d).
to a 1995 Corps recommendation that the Washington Aqueduct be transferred to a non-federal public water system.6

Despite Section 306, the Washington Aqueduct, a decade after the enactment of the SDWA Amendments, is still owned and operated by the Corps. Several recent controversies associated with D.C. drinking water, however, suggest the need for a reconsideration of the proposal to transfer the Washington Aqueduct to a local, non-federal, public water system.

First, the Washington Aqueduct is adjacent to Spring Valley, a residential neighborhood in northwest Washington, D.C. that is home to American University.7 The University sits on the site of a U.S. Army base used for the development of chemical munitions during World War I.8 In 1993, a cache of chemical munitions unearthed in Spring Valley precipitated a controversial environmental remediation of the neighborhood, which is expected to continue through 2010.9 That remediation, under the federal Defense Environmental Restoration Program,10 is the job of the Corps.11 The recent detection of perchlorate, a suspected toxin associated with explosives and munitions, near the Washington Aqueduct could require an expansion of the Spring Valley environmental remediation to include measures for the protection of the Washington Aqueduct.12 The need for those measures could pose a conflict of interest for the Corps.

Second, since January 2004, the local media have alarmed the residents of Washington, D.C. with reports of elevated concentrations of lead in D.C. drinking water.13 The reports prompted independent investigations, congressional hearings, and D.C. Council hearings.14 The problem, which for the most part is confined to Washington, D.C. ("the District"), is attributed not to the Corps but to the Washington, D.C. Water and Sewer Authority ("WASA"). The problem, it seems, involves the distribution

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6 See infra Part II.
8 Id.
9 Id. at 958.
12 Id.
13 See infra note 388 and accompanying text.
14 See infra note 389 and accompanying text.
pipes owned and maintained by WASA. Nonetheless, the public debate on lead in D.C. drinking water has implicated the issue of Washington Aqueduct ownership.

Third, the treatment and purification of water drawn from the Potomac River generates a considerable amount of waste. In the past, the Washington Aqueduct discharged this waste back into the Potomac River. The U.S. Environmental Protection Agency ("EPA") authorized these discharges under a permit issued pursuant to the Federal Water Pollution Control Act of 1972 ("Clean Water Act"). In April 2003, however, EPA amended the permit to reduce the amount of waste that the Washington Aqueduct may discharge back into the river. As a result, the Washington Aqueduct engaged in a multi-year evaluation of alternatives for the disposal of waste generated through water purification. Some of the alternatives examined implicated the issue of Washington Aqueduct ownership.

Part I of this Article will discuss the Washington Aqueduct, which processes and purifies water drawn from the Potomac River for sale to the District, Arlington County and Falls Church. This Part will describe WASA, which purchases drinking water from the Washington Aqueduct for distribution and sale to D.C. residents. Part I also describes and discusses the SDWA.

Part II of this Article will analyze the political and legal considerations behind the enactment of Section 306 of the SDWA Amendments. This Part examines the responses of the District, Arlington County and Falls Church to the statute.

Part III of this Article will describe the environmental remediation of Spring Valley by the Corps as well as the potential contamination of the Washington Aqueduct with perchlorate.

Part IV of this Article will explore the Corps’ and WASA’s responses to elevated concentrations of lead detected in D.C. drinking water.

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15 See infra note 424 and accompanying text.
16 See Water and Sewer Systems, supra note 4, at 24-25 (statement of Michael McCabe, Director, Region III, Environmental Protection Agency).
17 See infra notes 474-75 and accompanying text.
19 See infra notes 489-522 and accompanying text.
20 The Blue Plains Alternative (Alternative C), discussed infra Part V, is the most prominent example.
Finally, Part V of this Article will cover the environmental impact of the Corps’ discharges of wastes, generated through water purification, into the Potomac River. Part V also will explain the Water Treatment Residuals Management Process proposed by the Corps in May 2004.

This Article concludes that the potential contamination of the Washington Aqueduct with perchlorate and the conflict of interest that would arise if environmental remediation is required, combined with the elevated concentrations of lead detected in D.C. drinking water and the environmental impact of the Corps’ discharges of water purification wastes, suggest the need to act on the decade-old proposal to transfer the Washington Aqueduct to a local, non-federal, public water system.

I. BACKGROUND

A. The Washington Aqueduct

The Washington Aqueduct owns and operates the infrastructure required for the treatment and purification of water drawn from the Potomac River to provide the Washington metropolitan area with safe drinking water.

This infrastructure consists of two filtration plants as well as dams, conduits, reservoirs, pumping stations and transmission mains.

“The mission of the Washington Aqueduct is the collection, purification, and transmission to distribution systems of an adequate supply of water” for the District, Arlington County, and Falls Church, and for several federal facilities in the area, such as the Pentagon, the Defense Mapping Agency, and Fort Myer.

A water intake located at Great Falls, Maryland, ten miles northwest of Washington, and a water intake located at Little Falls, Maryland, one mile northwest of Washington, provide the Washington Aqueduct with up to 775 million gallons per day (“mgd”) of untreated Potomac River.


22 Id.

23 Id.
The untreated water from the Great Falls intake flows downward through two pipelines to the Dalecarlia Reservoir and the Georgetown Reservoir. The untreated water from the Little Falls intake is pumped through a tunnel to the Dalecarlia Reservoir.

The Dalecarlia Reservoir is a forty-six-acre settling and storage reservoir for the Dalecarlia Water Treatment Plant. The Georgetown Reservoir is a forty-two-acre settling and storage reservoir for the McMillan Water Treatment Plant. The Washington City Water Tunnel, a four-mile tunnel, connects the Georgetown Reservoir to the McMillan Reservoir, a thirty-eight-acre storage reservoir for the McMillan Water Treatment Plant. The Dalecarlia plant is a rapid-sand filter plant that can treat up to 250 mgd. The McMillan plant, which is also a rapid-sand filter plant, can treat up to 180 mgd. In contrast to the Dalecarlia plant, the McMillan plant includes a computerized central process control system.

The treatment and purification of water drawn from the Potomac River involves a four-step process. First, the water is allowed to settle in the reservoirs for up to thirty-six hours. This natural pre-sedmentation assists with the removal of suspended particles in the untreated water. Second, the water is pumped from the reservoirs into concrete sedimentation basins inside the water treatment plants, where aluminum sulfate is added to assist with sedimentation. This sedimentation process lasts four to six hours. Third, the water is disinfected with chlorine and sent through rapid sand filter beds comprised of gravel, sand, and crushed anthracite coal. Each filter bed can treat up to six mgd. Finally, the

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24 Id. The Little Falls, Maryland intake includes a 1,500-foot diversion dam, and a pumping station. Id.
25 Id. at 122. The two pipelines between Great Falls and the Dalecarlia Reservoir were constructed in 1863 (the Old Conduit) and in 1926 (the New Conduit). Id.
26 Id. The Dalecarlia Reservoir can store up to forty-one million gallons of untreated water. Id.
27 Id. The Georgetown Reservoir can store up to fifty-five million gallons of untreated water. Id.
28 Id. The McMillan Reservoir can store up to 180 million gallons of untreated water. Id.
29 Id.
30 Id. at 123.
31 Id.
32 Id. at 122.
33 Id.
34 Id. at 122. The addition of aluminum sulfate, which coagulates with suspended particles in the water, results in flocculation, i.e., the removal of suspended particles. Id.
35 Id. at 123. The sedimentation basins are flushed out three or four times each year. Id.
36 Id.
37 Id. The filter beds are cleaned with filtered water on a routine basis. Id.
water may be treated with additional chlorine, and powdered and activated carbon to moderate the taste and odor of the water, fluoride for dental health, and quick lime to minimize the corrosion of distribution system pipes.\textsuperscript{38}

Throughout the treatment and purification of Potomac River water, the Washington Aqueduct tests and analyzes the water.\textsuperscript{39} "[T]he Washington Aqueduct performs over 300,000 lab analyses yearly from sample points in the distribution systems, treatment plant finished water, treatment plant process control and the Potomac River."\textsuperscript{40} The Aqueduct tests for twenty-three different metals (e.g., arsenic); 140 organic compounds (e.g., pesticides); and twenty-four inorganic compounds.\textsuperscript{41} In addition, the Aqueduct analyzes the turbidity levels of untreated and treated water.\textsuperscript{42}

Although the Corps owns and operates the Washington Aqueduct, the operation and maintenance of the Aqueduct is funded through the D.C. government.\textsuperscript{43} The Aqueduct sells water to the District, Arlington County and Falls Church.\textsuperscript{44} The Aqueduct deposits receipts from those sales, over $6 million per year, into the D.C. Water and Sewer Enterprise Fund ("Fund").\textsuperscript{45} The D.C. government reimburses the Aqueduct for operation and maintenance expenses through an annual appropriation from the Fund, which is included in the D.C. budget that is submitted to Congress each year for approval.\textsuperscript{46} For example, in 2004, Congress approved an appropriation of $48 million for the Washington Aqueduct.\textsuperscript{47}

B. The Water and Sewer Authority

The Washington Aqueduct is responsible for the treatment and purification of drinking water for Washington, D.C., Arlington County,
and Falls Church, while the Water and Sewer Authority ("WASA") is responsible for the distribution of drinking water in Washington, D.C.\textsuperscript{48} WASA, thus, cares for the infrastructure, particularly the distribution pipes, associated with the distribution of drinking water throughout the District.\textsuperscript{49} WASA, as well as the Washington Aqueduct, therefore, is subject to the SDWA. In addition, WASA treats all sewage in the District; Montgomery County, Maryland; Prince George's County, Maryland; Fairfax County, Virginia; and Loudoun County, Virginia.\textsuperscript{50} In this second duty, WASA owns and operates the Blue Plains Wastewater Treatment Plant ("Blue Plains"), which is the largest modern wastewater treatment plant in the world.\textsuperscript{51}

The D.C. Council created WASA in January 1996 under the Water and Sewer Authority Establishment and Department of Public Works Reorganization Act of 1996 ("WASA Act").\textsuperscript{52} The D.C. Council established WASA to "facilitate the efficient and economical operation of water distribution and sewage collection, disposal, and treatment systems in the District and surrounding jurisdictions."\textsuperscript{53} The D.C. Council created WASA "during the District's fiscal crisis, and the water and sewer system had suffered from decades of insufficient maintenance and a poor reputation among its customers."\textsuperscript{54}

\begin{itemize}
\item \textsuperscript{49} \textit{Id.} “Our Department of Water Services oversees the entire water distribution system serving the District.” \textit{Id.}
\item \textsuperscript{50} \textit{Id.} at 12. "This adds up to a service area covering approximately 725 square miles.” \textit{Id.} at 12-13.
\item \textsuperscript{51} \textit{Id.} at 13. “First and foremost, our wastewater treatment system—Blue Plains—is the District's single most valuable public asset.” \textit{Blue Plains Wastewater Treatment Plant: Hearing Before the Subcomm. on the District of Columbia of the H. Comm. on Government Reform and Oversight, 104th Cong. 13} (1996) (written statement of Michael C. Rogers, City Administrator for the District of Columbia).
\item \textsuperscript{52} D.C. SESS. LAW § 11-111, 43 D.C. Reg. 548 (Apr. 18, 1996). \textit{See also} Highway Trust Fund Establishment Act and the Water and Sewer Authority Amendment Act of 1996, D.C. SESS. LAW 11-184, 43 D.C. Reg. 4265 (Apr. 25, 1997).
\item \textsuperscript{53} D.C. CODE § 34-2201.01(7)(A) (2007).
\item \textsuperscript{54} WASA ANNUAL REPORT 2000/2001, supra note 48, at 2.
\end{itemize}
Violations of the SDWA also forced the D.C. Council to respond by establishing WASA.\(^{55}\) In July 1996, poor maintenance of the water distribution system contributed to bacteria-contaminated drinking water causing SDWA violations.\(^{56}\) The violations resulted in an EPA SDWA enforcement order in July 1996.\(^{57}\) In a consent agreement associated with the order, the District "promised to produce a long-term plan to repair and upgrade its pipes and storage reservoirs to prevent future problems."\(^{58}\) The District agreed to a remediation plan in March 1997.\(^{59}\)

WASA is independent of the D.C. government and "has a separate legal existence."\(^{60}\) Thus, the WASA Act established the Water and Sewer Enterprise Fund to separate WASA revenues and expenditures from D.C. revenues and expenditures.\(^{61}\) In addition, WASA is authorized to finance the operation and maintenance of the infrastructure for water distribution and sewage treatment through the issuance of revenue bonds.\(^{62}\) An eleven-person board appointed by the mayor of the District governs WASA.\(^{63}\) In 2001, the net income of WASA was $21 million.\(^{64}\)

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\(^{59}\) Status of WASA, supra note 55, at 43-44.

\(^{60}\) D.C. CODE § 34-2202.02(a) (2007).

\(^{61}\) Id. § 34-2202.07(a).


\(^{63}\) D.C. CODE § 34-2202.04(a)(1). Six individuals are appointed by the mayor with the advice and consent of the D.C. Council. Id. § 34-2202.04(a)(2). Five individuals are appointed by
The WASA Act directed the WASA board to "assess the feasibility, including the financial benefits, if any, of engaging a private entity" to own and operate the Blue Plains plant. In addition, the WASA Act directed the WASA board to "determine the feasibility of establishing the [WASA] as an independent regional authority . . . "

WASA provides safe drinking water to over 500,000 homes, businesses, and government offices in the District. WASA operates and maintains a water distribution system that consists of "almost 1,300 miles of pipes and mains ranging from 4 to 78 inches in diameter. . . . Quality is assured through [a] rigorous testing program, and continuous quality checks—an average of 200 water samples are gathered monthly from various sites around the District."

Soon after the D.C. Council created WASA, the Authority initiated an ambitious ten-year, $1.6 billion capital improvement program to rebuild and modernize the water distribution and sewage treatment systems of the District. The program includes $500 million for improvements and upgrades to the D.C. water distribution system. "The lion's share of the [program] is earmarked for improvement projects and upgrades at Blue Plains."

In November 1997, Montgomery County and Prince George's County complained to the Subcommittee on the District of Columbia of the House Committee on Government Reform ("D.C. Subcommittee") that the independent WASA was still subject to D.C. government oversight.
EPA reported to the D.C. Subcommittee, however, that “there have been no violations of drinking water standards and no significant violations of the [Blue Plains] waste water permit since [WASA] officially opened its doors on October 1, 1996.”73

In December 2000, the Privatization and Regionalization Committee of the WASA board issued a report,74 required by the WASA Act, to assess “the feasibility of establishing [WASA] as an independent regional authority . . . .”75 Prepared with help from the staff of the Metropolitan Washington Council of Governments, WASA concluded that an interstate compact could be used to regionalize WASA.76 Although WASA found no precedent in the U.S. for an interstate compact that established a public water system,77 the Privatization and Regionalization Committee examined the interstate compact that established the Washington Metropolitan Area Transit Authority (“WMATA”) as well as the interstate compact that established the Metropolitan Washington Airports Authority (“MWAA”).78 Despite the successful WMATA and MWAA precedents,79 WASA recommended that WASA not be regionalized through an interstate compact and that the current structure of WASA be retained.80 The WASA board approved the recommendation in January 2001.81

73 Id. at 41 (written statement of Michael McCabe, Regional Administrator, Region III, Environmental Protection Agency).
76 REGIONALIZATION STUDY, supra note 74, at 2.
77 Id. See also PHASE I REPORT, supra note 74, at 6.
79 REGIONALIZATION STUDY, supra note 74, at 2; PHASE I STUDY, supra note 74, at 5.
80 REGIONALIZATION STUDY, supra note 74, at 7. In support of this recommendation, the Privatization and Regionalization Committee concluded, inter alia, that (i) the creation of a regional WASA would be time and resource intensive, (ii) a regional WASA could create a “significant burden” for the D.C. government, and (iii) the “DC-WASA Is Still Young and Continues to Evolve.” Id. at 6-7.
81 District of Columbia Water and Sewer Authority Board of Directors, Res. No. 01-05 (Jan. 4, 2001) (on file with author). See also Letter From the District of Columbia Water and Sewer Authority to the Honorable Anthony A. Williams, Mayor, District of Columbia, Transmittal of Regionalization Study Report by the District of Columbia Water and Sewer Authority Pursuant to District of Columbia Code Section 43-1677(g) (Feb. 1, 2001) (on file with author).
C. The Safe Drinking Water Act

Congress enacted the Safe Drinking Water Act in 1974, and amended the statute in 1986 and in 1996. The SDWA is Title XIV of the Public Health Service Act. EPA has implemented the statute with over 500 pages of regulations. The SDWA allows the regulation of public water systems, and also authorizes the regulation of underground sources of drinking water. In the event of safe drinking water emergencies, EPA is authorized to "take such actions as [it] may deem necessary in order to protect" the public health. EPA engages in research on safe drinking water and provides grants for state safe drinking water programs. Finally, the SDWA includes several additional requirements for the regulation of drinking water.

The regulation of public water systems contemplates the promulgation of national drinking water regulations. For each contaminant that may adversely impact public health and that may occur in a public water system, EPA will adopt a maximum contaminant level goal and a national primary drinking water regulation. The national primary drinking water regulation for each contaminant will establish a maximum level of the contaminant in safe drinking water or a treatment technique that will reduce the concentration of the contaminant in safe drinking water.

86 See generally 42 U.S.C. §§ 300g to 300g-9 (2007) (regulating public water systems). A public water system "has at least fifteen service connections or regularly serves at least twenty-five individuals." Id. § 300f(4)(A).
87 See generally 42 U.S.C. §§ 300h to 300h-8 (providing for the protection of underground sources of drinking water). The regulation of underground sources of drinking water is effected through underground injection control programs. See id. § 300h. Underground injection is the subsurface emplacement of fluids (e.g., wastes) by well injection. § 300h(d)(1). See generally 40 C.F.R. pts. 144-48 (2007) (underground injection regulations).
88 42 U.S.C. § 300i(a). In addition, it is a federal crime to tamper with a public water system. See id. § 300h to 300i-1.
90 See generally id. §§ 300j-21 to 300j-26 (specifying the additional requirements).
91 See id. § 300g-1.
92 Id. § 300g-1(b)(1)(A)(i)-(ii).
93 Id. § 300g-1(b)(1)(A). EPA shall also maintain a list of contaminants for which there are no primary drinking water regulation (unregulated contaminants) and determine on a periodic basis if those contaminants should be regulated and subject to primary drinking water regulation. Id. § 300g-1(b)(1)(B).
water. The national primary drinking water regulations ("NPDWR") are published in Part 141 of the EPA regulations.

The NPDWR are promulgated on the basis of "the best available, peer-reviewed science and supporting studies conducted in accordance with sound and objective scientific practices." In addition, each national primary drinking water regulation that establishes a maximum level must include a cost-benefit analysis. Finally, each regulation is reviewed on a six-year cycle.

In addition to the NPDWS, the SDWA requires EPA to promulgate secondary drinking water regulations. The secondary drinking water regulation for a contaminant will establish a maximum level of the contaminant in safe drinking water "requisite to protect the public welfare." EPA may promulgate secondary regulation to address the appearance or odor of otherwise safe drinking water that may vary with geographic or other circumstances.

Congress delegated enforcement of the NPDWS to states that have adopted drinking water regulations "no less stringent than" the NPDWS. In addition to states that are qualified to enforce the NPDWS,
EPA can also enforce the regulations. The statute authorizes EPA to issue administrative orders and to institute civil actions for compliance with the NPDWS. The SDWA authorizes a state with enforcement powers or EPA to issue variances from the NPDWS. The SDWA also allows a state with enforcement powers or EPA to issue exemptions from the NPDWS “due to compelling factors.”

A public water system that violates a national primary drinking water standard is required to advise the public served by the system of the violation. The SDWA details the form and manner in which the public water system advises the public. A state with enforcement powers must issue an annual report to EPA on violations of NPDWS for the past year. Each public water system regulated under the SDWA must publish an annual report on the actual concentration of contaminants in the drinking water purveyed by the system.

A national primary drinking water regulation that establishes a maximum level for a contaminant will include “accepted methods for quality control and testing procedures to insure [sic] compliance with such levels . . . .” The SDWA, however, authorizes a state with enforcement powers or EPA to permit alternative testing requirements for regulated contaminants, if certain conditions are met.

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103 42 U.S.C. § 300g-3. EPA also can enforce the regulations in states that are not qualified to enforce the NPDWS. Id. § 300g-3(a)(2). See generally 40 C.F.R. §§ 142.30-.34 (2007) (providing for federal enforcement).

104 42 U.S.C. § 300g-3(a)(1)(B). EPA also is authorized to assess civil penalties for NPDWS violations of $25,000 per day per violation. Id. § 300g-3(g).

105 Id. § 300g-4. For example, a variance may be issued if a public water system is unable to meet a national primary drinking water standard “because of characteristics of the raw water sources which are reasonably available . . . .” Id. § 300g-4(a)(1)(A). See generally 40 C.F.R. §§ 142.20-.24 (review of state-issued variances and exemptions); 40 C.F.R. §§ 142.40-.46 (variances issued by EPA).

106 42 U.S.C. § 300g-5(a)(1). An exemption may be granted if the exemption “will not result in an unreasonable risk to [public] health.” Id. § 300g-5(a)(3). See generally 40 C.F.R. §§ 142.20-.24 (review of state-issued variances and exemptions); 40 C.F.R. §§ 142.50-.57 (exemptions issued by EPA).

107 42 U.S.C. § 300g-3(c)(1).

108 Id. § 300g-3(c)(2). See also 40 C.F.R. §§ 141.201-.210 (detailing public notification requirement for drinking water violations).

109 42 U.S.C. § 300g-3(c)(3).

110 Id. § 300g-3(c)(4). The requirement is applicable to public water systems with fifteen or more service connections or that serve twenty-five or more year-round residents. Id. § 300f(15) (defining a community water system). See generally 40 C.F.R. §§ 141.151-141.156 (providing for consumer confidence reports).

111 42 U.S.C. § 300f(1)(D).
chemical contaminants.\textsuperscript{112} Finally, the SDWA provisions on the regulation of public water systems prohibit the use of lead pipes and lead solder in regulated public water systems.\textsuperscript{113} The SDWA Amendments specifically outlawed the sale of pipes and plumbing fixtures that are not lead free.\textsuperscript{114}

Under the general provision of the statute, EPA researches safe drinking water.\textsuperscript{115} EPA also provides grants to states with enforcement powers for state safe drinking water programs and for the enforcement of the NPDWS.\textsuperscript{116} In addition, the SDWA Amendments authorized EPA to provide grants for state revolving loan programs,\textsuperscript{117} which offer low-interest loans to public water systems for NPDWS compliance assistance.\textsuperscript{118} The SDWA Amendments also direct EPA to provide technical and financial assistance "for the construction, rehabilitation, and improvement of water supply systems."\textsuperscript{119}

Finally, the Lead Contamination Control Act of 1988 ("LCCA") created additional requirements.\textsuperscript{120} The LCCA directed the Consumer Product Safety Commission ("CPSC") to order the repair, replacement or recall of water coolers with lead-lined tanks.\textsuperscript{121} The statute also authorized criminal and civil penalties for the interstate sale of water coolers that are not lead free.\textsuperscript{122} The LCCA directed EPA to provide guidance "to assist schools in determining the source and degree of lead contamination in school drinking water supplies and in remedying such contamination."\textsuperscript{123} The statute also required each state to establish a program "to assist local educational agencies in testing for, and remedying, lead contamination in drinking water from coolers and from other sources of lead

\textsuperscript{112} Id. § 300g-7(b)(1). A state may not permit an alternative testing requirement for a regulated microbiological contaminants. Id.

\textsuperscript{113} Id. § 300g-6(a)(1)(A)(i).

\textsuperscript{114} Id. § 300g-6(a)(3)(A).

\textsuperscript{115} Id. § 300j-1(a)(1).

\textsuperscript{116} Id. § 300j-2. See also id. § 300j-3 (special project grants and guaranteed loans); id. § 300j-3a (grants to public sector agencies).

\textsuperscript{117} Id. § 300j-12.

\textsuperscript{118} Id. § 300j-12(a)(2).

\textsuperscript{119} Id. § 300j-3c(a). See generally id. § 300j-3c.


\textsuperscript{122} See generally 42 U.S.C. § 300j-23.

\textsuperscript{123} Id. § 300j-24(b).
contamination at schools under the jurisdiction of such agencies." EPA was authorized to provide grants to states for those programs. In 1996, however, the U.S. Court of Appeals for the Fifth Circuit ruled that the requirement for state programs was unconstitutional under the Tenth Amendment.

The NPDWS include maximum contaminant levels for inorganic chemicals, for trihalomethanes, and for turbidity, which is a measurement of "cloudiness" in untreated source water.

In 1991, EPA, in accordance with the SDWA, promulgated a national primary drinking water regulation for lead and copper. The thirty-page Lead and Copper Rule is applicable to public water systems with fifteen or more service connections or that serve twenty-five or more year-round residents. The national primary drinking water regulation for lead, in lieu of a maximum contaminant level, prescribes a treatment technique to reduce the concentration of the contaminant in safe drinking water. In addition, the rule establishes an "action level" for lead of fifteen parts per billion ("ppb") in more than ten percent of the tests for lead, and an "action level" for copper of 1300 ppb in more than ten percent of the tests for copper. The Lead and Copper Rule otherwise has four general requirements, which differentiate among large public water systems that serve more than 50,000 people, medium public water systems, and small public water systems that serve less than 3,300 people.

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124 Id. § 300j-24(d)(1).
125 Id. § 300j-25(a).
128 Id. § 141.12.
129 Id. § 141.13.
130 Water Treatment Facilities, supra note 21, at 121.
132 40 C.F.R. § 141.80(a) (specifying the applicability of subpart I, "Control of Lead and Copper"). See also id. § 141.2 (defining a community water system).
133 Id.
134 Id. §§ 141.80(c)(1)-(2). See also id. § 141.2 (defining "action level").
135 Id. §§ 141.80-.91.
136 Id. § 141.81; see, e.g., id. § 141.81(a) (corrosion control requirements); id. § 141.87 (monitoring requirements for water quality parameters). Compare id. § 141.81(d) (treatment steps and deadlines for large systems), with id. § 141.81(e) (treatment steps and deadlines for small and medium-size systems).
First, a public water system must test for lead and copper in drinking water. If a large public water system must test for those contaminants from 100 different residences over a six-month period. If the system does not exceed the action level for two consecutive six-month periods, then the system may, with state or EPA approval, test for lead and copper from fifty different residences over a one-year period. Some tests for those contaminants may be invalidated. A large public water system must also measure several water quality parameters. The system must conduct lead and copper tests and the water quality measurements in accordance with the rule’s detailed analytical methods.

Second, a public water system must implement and maintain a corrosion control program, which will minimize the potential for lead and copper to leach from distribution pipes into drinking water. The Lead and Copper Rule requires an “optimal” corrosion control treatment for a large system, unless the system has an “optimized” corrosion control program. The Rule contemplates three treatment techniques for corrosion control: (i) an adjustment to pH; (ii) an adjustment to calcium hardness; and (iii) the addition of a phosphate or silicate based corrosion inhibiting agent. The state with enforcement powers selects an “optimal” corrosion control treatment, which is implemented by the public water

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137 See generally id. § 141.86 (specifying monitoring requirements for lead and copper in tap water).
138 Id. § 141.86(c)-(d). The residences must consist of homes with lead service lines or with copper pipes with lead solder. Id. § 141.86(a). A small public water system can be excepted from the requirement to test for lead and copper in drinking water. Id. § 141.86(g).
139 Id. § 141.86(d)(4).
140 Id. § 141.86(f).
141 Id. § 141.87 (monitoring requirements for water quality parameters). The system must measure for pH, alkaline, orthophosphate, silica, calcium, conductivity, and temperature. Id. § 141.87(b). The system must take measurements in drinking water and in untreated source water. Id. § 141.87(a)-(b).
142 See id. § 141.89 (detailing the analytical methods).
143 See generally id. § 141.80(d); id. § 141.81 (corrosion control treatment steps); id. § 141.82 (describing the corrosion control treatment requirements).
144 Id. § 141.81(a)(1); id. § 141.81(d) (treatment steps and deadlines for large systems).
145 Id. § 141.81(b)(3). A large public water system has an “optimized” corrosion control program if tests for lead in drinking water and tests for lead in untreated source water correspond to parameters set forth in the rule. Id. “Any system triggered into corrosion control because it is no longer deemed to have optimized corrosion control . . . shall implement corrosion control treatment . . .” Id. § 141.81(b)(3)(v).
146 Id. § 141.82(c)(1). “The water system shall evaluate the effect of the chemicals used for corrosion control treatment on other water quality treatment processes.” Id. § 141.82(c)(5).
147 Id. § 141.82(d).
system, reviewed by the state for water quality parameters, and maintained by the system.

Third, if a public water system exceeds an action level in tests for lead and copper in drinking water, then that system must test for lead and copper in untreated source water. The Lead and Copper Rule, in this regard, differentiates between ground water (e.g., from wells) and surface water (e.g., from rivers and lakes). In addition, if the system exceeds an action level, then the system must implement a source water treatment program. The rule contemplates four treatment techniques: (i) ion exchange, (ii) reverse osmosis, (iii) lime softening, or (iv) coagulation/filtration.

Fourth, and finally, if a public water system exceeds the action level in tests for lead in drinking water, then that system must initiate two additional remedial measures. In particular, the system must disclose the results of the tests to the public within sixty days. The public disclosure requirements of the Lead and Copper Rule are detailed. These requirements address: (i) the content of written materials, (ii) the content of broadcast materials, and (iii) the distribution of materials.

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148 Id. § 141.82(e).
149 Id. § 141.82(f).
150 Id. § 141.82(g).
151 See id. § 141.88 (monitoring requirements for lead and copper in source water). “Lead occurs in drinking water from two sources: (1) Lead in raw water supplies, i.e., source water or distributed water, and (2) corrosion of plumbing materials in the water distribution system (corrosion by-products). Most lead contamination is from corrosion by-products.” Drinking Water Regulations, 56 Fed. Reg. 26,463 (June 7, 1991) (emphasis added). “A system is not required to conduct source water sampling for lead and/or copper if the system meets the action level for the specific contaminant in tap water samples.” 40 C.F.R. § 141.88(d)(2).
152 See, e.g., 40 C.F.R. § 141.88(a)(1)(i)-(ii).
153 See id. § 141.83 (source water treatment requirements). “A system may recommend that no treatment be installed based upon a demonstration that source water treatment is not necessary to minimize lead and copper levels at users’ taps.” Id. § 141.83(b)(1).
154 Id. § 141.83(b)(2).
155 See id. § 141.84 (lead service line replacement requirements); id. § 141.85 (public education and supplemental monitoring requirements).
156 Id. § 141.85.
157 Id. § 141.85(a). The written materials distributed to the public if a public water system exceeds an action level in tests for lead or copper in drinking water must include, for example, a discussion of the health effects of lead. Id. § 141.85(a)(1)(ii). The materials must also detail the steps an individual can take in the home to minimize his or her exposure to lead. Id. § 141.85(a)(1)(iv).
158 Id. § 141.85(b).
159 Id. § 141.85(c).
In addition, if a public water system exceeds the action level in tests for lead in drinking water (after the implementation of a corrosion control program or the implementation of a source water treatment program), the public water system must initiate the replacement of lead service lines within its distribution system. "A water system shall replace annually at least 7 percent of the initial number of lead service lines in its distribution system." The public water system does not need to replace the entire lead service line. "A water system shall replace that portion of the lead service line that it owns." In addition, the water system does not need to replace a lead service line if the water system never exceeds the action level for lead in drinking water from that line.

In addition to these four general requirements, the Lead and Copper Rule includes reporting and record-keeping provisions.

II. LOCALIZATION OF THE WASHINGTON AQUEDUCT

On December 8, 1993, EPA issued a Boil-Water Notice for the Washington, D.C. metropolitan area. The Notice was issued after the Washington Aqueduct advised EPA that the Dalecarlia plant was in violation of EPA safe drinking water standards. EPA, which had issued a Boil-Water Notice on just one prior occasion, lifted the Notice on December 11, 1993.

160 Id. § 141.84.
161 Id. § 141.84(b).
162 Id. § 141.84(d). "Depending on State law or regulations, or local ordinances, some public water systems control and/or own connections up to the property line . . . ." Drinking Water Regulations, 56 Fed. Reg. 26,503 (June 7, 1991). The public water system must offer to replace the portion of a lead service line that it does not own at the expense of the individual that owns that portion. 40 C.F.R. § 141.84(d).
163 "A system is not required to replace an individual lead service line if the lead concentration in all service line samples from that line, taken pursuant to § 141.86(b)(3), is less than or equal to 0.015 mg/L." Id. § 141.84(c).
164 Id. §§ 141.90-.91.
The Notice triggered a congressional hearing on the operation of the Washington Aqueduct in general, and of the Dalecarlia plant in particular. The Notice precipitated a chain of events that contributed in no small measure to the enactment of Section 306 of the SDWA Amendments.

Within two weeks of the Boil Water Notice, the Subcommittee on Water Resources and Environment of the House Committee on Transportation and Infrastructure ("Water Resources Subcommittee") held a congressional hearing on the incident. A second hearing was held in June 1994. The first hearing focused "on the problems of the [Dalecarlia plant] that resulted in [the] EPA boil-water recommendation on December 8, 1993." The second hearing focused on changes in the operation of the Dalecarlia plant to decrease the prospect of a subsequent boil-water order.

In the first hearing, the Water Resources Subcommittee heard from the Corps and EPA. The Corps announced that it would conduct an independent comprehensive performance evaluation of the Dalecarlia and McMillan plants. The evaluation briefed the subcommittee on EPA regulation of safe drinking water and on EPA initiatives "to reduce the likelihood of a repeat of this incident in the metropolitan region."

The congressional hearing revealed that EPA had directed the Washington Aqueduct to contract with an independent consultant for a comprehensive performance evaluation of the Dalecarlia and McMillan

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169 See Water Treatment Facilities, supra note 21, at 1.
170 See id. at 195-295.
171 Id. at 1 (written statement of Rep. Eleanor Holmes Norton). "Today, we are embarking on the first oversight in memory of the Dalecarlia Water Treatment Plant." Id. at 2.
172 Id. at 187 (memorandum to Water Resources Subcomm.).
173 Id. at 120-29 (written statement of Major General Stanley G. Genega, Director of Civil Works, U.S. Army Corps of Engineers).
174 Id. at 132-39 (written statement of Stanley L. Laskowski, Acting Regional Administrator, Region III, Environmental Protection Agency).
175 Id. at 120-29 (written statement of Major General Stanley G. Genega, Director of Civil Works, U.S. Army Corps of Engineers).
176 Id. at 137. See also id. at 140-47 (prepared statement of Robert L. Mallett, City Administrator and Deputy Mayor for Operations, District of Columbia); id. at 130-31 (prepared statement of James B. Hunter, III, Chairman, Arlington County Board); id. at 115-19 (prepared statement of the Honorable Thomas M. Davis, III, Chairman, Fairfax County Board of Supervisors); id. at 101-14 (prepared statement of Ruth R. Crone, Executive Director, Metropolitan Washington Council of Governments); id. at 148-56 (prepared statement of Erik D. Olson, Senior Attorney, Natural Resources Defense Council).
plants prior to the Boil Water Notice.\textsuperscript{177} EPA expanded the scope of the evaluation in response to the boil water incident.\textsuperscript{178} The contract also contemplated the development of a conceptual design for the modernization of the Washington Aqueduct.\textsuperscript{179} EPA required the performance evaluation in response to a September 1993 and an October 1993 violation of the Total Coliform Rule, as well as a December 1993 violation of the Surface Water Treatment Rule ("SWTR") that resulted in the Boil Water Notice.\textsuperscript{180} The evaluation concluded that the Dalecarlia plant exceeded the 0.5 Nephelometric Turbidity Unit ("NTU") turbidity performance criteria of the SWTR as well as the 5 NTU maximum turbidity limit of the SWTR in December 1993.\textsuperscript{181}

In March 1994, the independent consultant released a comprehensive performance evaluation\textsuperscript{182} and a conceptual plan for the modernization of the Washington Aqueduct.\textsuperscript{183} The performance evaluation identified seven circumstances that contributed to the SWTR violation.\textsuperscript{184} The modernization plan (i) defined a "state-of-the-art" water treatment plant, (ii) considered the impact of current and anticipated SDWA requirements, (iii) identified the differences "between a state-of-the-art water treatment plant and the Dalecarlia and McMillan plants," and (iv) developed a plan of improvements to provide the Dalecarlia and McMillan plants with state-of-the-art water treatment systems.\textsuperscript{185} The modernization plan consisted of nine "first priority" improvements that would cost between $69 and $116 million,\textsuperscript{186} five "second priority" improvements that

\begin{footnotesize}
\textsuperscript{177} Id. at 63-65.
\textsuperscript{178} Id. at 66-69 (noting that the scope of work includes conducting a comprehensive performance evaluation).
\textsuperscript{179} Id. at 66-69 (noting that the scope of work includes conducting a comprehensive performance evaluation).
\textsuperscript{180} Id. at 66-69 (noting that the scope of work includes conducting a comprehensive performance evaluation).
\textsuperscript{181} See id; see also D'Vera Cohn, Problems Abound in Water Plants, WASH. POST, Mar. 31, 1994, at B8.
\textsuperscript{182} MALCOLM PIRNIE, INC., COMPREHENSIVE PERFORMANCE EVALUATION: FINAL REPORT, at ES-1, 1-2 (1994) [hereinafter PERFORMANCE EVALUATION].
\textsuperscript{183} Id. at ES-3, 2-10.
\textsuperscript{184} MALCOLM PIRNIE, INC., CONCEPTUAL PLAN FOR MODERNIZATION: FINAL REPORT (1994) [hereinafter MODERNIZATION PLAN].
\textsuperscript{185} Id. at ES-3 to ES-4, 2-10 to 2-11. For example, "[T]he arrangement of the alum[inum sulfate] lines resulted in inadequate dispersion of coagulant into the [untreated] water." Id. at ES-4, 2-11.
\textsuperscript{186} MODERNIZATION PLAN, supra note 183, at ES-1 to ES-2.
\textsuperscript{186} Id. at ES-3 to ES-4, 2-10 to 2-11. For example, "[T]he arrangement of the alum[inum sulfate] lines resulted in inadequate dispersion of coagulant into the [untreated] water." Id. at ES-4, 2-11.
\end{footnotesize}
would cost between $90 and $191 million, and three “third priority” improvements that would cost between $16 and $25 million.

The Water Resources Subcommittee held a second congressional hearing in June 2004 that focused on changes in the operation of the Dalecarlia plant, the independent comprehensive performance evaluation, and on the modernization of the Washington Aqueduct. After the first hearing, Congressman Jim Moran (D-VA), attempted to finance a modernization of the Washington Aqueduct by introducing a bill to authorize the Washington Aqueduct to borrow funds from the federal government in order to make capital improvement to the water system.

At the second hearing, the Water Resources Subcommittee again heard from the Corps, which discussed the results and recommendations of four separate investigations undertaken in response to the Boil Water Notice. The Committee also heard from EPA, which discussed the results of its investigation, and the March 1994 emergency order it issued under Section 1431 of the SDWA to require the Washington Aqueduct’s completion of an independent comprehensive performance evaluation. In the course of the hearing, the Water Resources Subcommittee also learned that the D.C. government was ineligible for primacy under the SDWA.

The 103rd Congress failed to act on Congressman Moran’s proposal to authorize the Washington Aqueduct to borrow funds from the federal government for capital improvements. Delegate Eleanor Holmes

187 For example, the plan recommended the use of chemical feed for zebra mussel control at the Great Falls and Little Falls intakes. Id. tbl.ES-3.
188 For example, the plan recommended the installation of pre-sedimentation basins. Id. tbl.ES-4.
189 See Water Treatment Facilities, supra note 21, at 195-295; see also D’Versa Cohn, Nine Blamed for Mistakes at Reservoir, WASH. POST, June 13, 1994, at D1.
192 See id. at 272-80 (written statement of Stanley L. Laskowski, Deputy Regional Administrator, Region III, Environmental Protection Agency). The deputy mayor, the chairman of the County Board, a member of the city council, and an associate from Malcolm Pirnie, Inc. also spoke about the investigation and resulting evaluation. See id. at 281-83 (written statement of Robert L. Mallett, City Administrator and Deputy Mayor for Operations, Government of the District of Columbia); id. at 293-95 (written statement of Mary Margaret Whipple, Chairman, Arlington County Board); id. at 291-92 (written statement of Robert R. Perry, Member, Falls Church City Council); id. at 284-90 (written statement of James P. Noonan, Senior Associate, Malcolm Pirnie, Inc.).
193 See, e.g., id. at 247-54 (describing correspondence between D.C. government and EPA).
Norton (D-D.C.) and Congressman Moran, however, drafted a provision, included in the District of Columbia Appropriations Act for Fiscal Year 1995, to require the Secretary of the Army to prepare a report on options available to the Corps to finance the Washington Aqueduct Capital Improvement Plan and a report on alternative ownership arrangements for the Washington Aqueduct. The report was to include "a recommendation on the advisability of establishing a non-Federal regional water authority and transferring ownership of and operating responsibility for the Washington Aqueduct facility from the Department of the Army to such regional authority." 

Consistent with the Appropriations Act, the Secretary of the Army issued a report on the Washington Aqueduct in February 1995. The sixteen-page report relied in large measure on the conceptual plan and discussed the need for capital improvements to the Washington Aqueduct. The report outlined three options for ownership of the Aqueduct: federal ownership, non-federal public ownership, and private ownership. For each ownership option, the report outlined two potential ways to finance the required improvements.

Under federal ownership, the first option, the improvements would be financed either by the federal government or through bonds issued by WASA, Arlington County and Falls Church. Under the second option, district appropriations for fiscal year 1995, Pub. L. No. 103-334, §§ 101-201, 108 Stat. 2576, 2576-98 (1994).


196 "District of Columbia Appropriations Act for Fiscal Year 1995 § 142(c), 108 Stat. at 2593.


198 "See also MODERNIZATION PLAN, supra note 183, WEST REPORT, supra note 197, at 5-7 (citing WASHINGTON AQUEDUCT DIV., BALTIMORE DIST., U.S. ARMY CORPS OF ENGINEERS, CURRENT CONDITIONS, COMPREHENSIVE PERFORMANCE EVALUATION AND CONCEPTUAL MODERNIZATION PLAN (1994)).

199 "WEST REPORT, supra note 197, at 8-13. The options were developed by the Corps with independent consultant Metcalf & Eddy, Inc. Id. at 8 (citing METCALF & EDDY, FINAL SUMMARY REPORT: STUDY OF FINANCING AND OWNERSHIP OPTIONS FOR THE WASHINGTON AQUEDUCT (1995); METCALF & EDDY, FINAL TECHNICAL REPORT: STUDY OF FINANCING AND OWNERSHIP OPTIONS FOR THE WASHINGTON AQUEDUCT (1994)).

200 WEST REPORT, supra note 197, at 8-13.

201 Id. at 8-10.
non-federal ownership, the improvements would be financed either by the federal government or through bonds issued by WASA, Arlington County, and Falls Church. Under private ownership, the third option, the improvements would be financed either by the federal government or through municipal or corporate bonds. Comments from the Secretary of the Army were included in the report. The Secretary recommended non-federal public ownership of the Aqueduct. In support of this recommendation, the Secretary observed that the "[o]peration of a local water supply facility is outside of the normal mission of the Corps of Engineers."

The D.C. Subcommittee shared a concern about safe drinking water in Washington, D.C. with the Water Resources Subcommittee, but had no jurisdiction over the Washington Aqueduct. Nonetheless, in February 1996, the D.C. Subcommittee of the 104th Congress addressed the operation of the Washington Aqueduct in a congressional hearing on water and sewer systems in Washington, D.C.

The Corps testified that, because the Washington Aqueduct was not empowered to borrow funds from the federal government for capital improvements, those improvements required a "pay-as-you-go" approach that could result in burdensome rate increases. EPA stressed the Secretary of the Army's recommendation to transfer the Washington Aqueduct to a non-federal public water system that "had the ability to raise the necessary capital" for improvements. Finally, the Natural Resources Defense Council testified that the modernization of the Washington Aqueduct could not be achieved "until the Corps is relieved of the

\[\text{202 Id.}\]
\[\text{203 Id. at 8-10.}\]
\[\text{204 Id. at 14.}\]
\[\text{205 Id.}\]
\[\text{206 Water and Sewer System, supra note 4, at 2 (statement of Rep. Thomas M. Davis, Chairman, District of Columbia Subcomm.).}\]
\[\text{207 See, e.g., id. at 82-86 (written statement of Thomas P. Jacobus, Chief, Washington Aqueduct Division, Baltimore District, U.S. Army Corps of Engineers).}\]
\[\text{208 Id. (written statement of Thomas P. Jacobus, Chief, Washington Aqueduct Division, Baltimore District, U.S. Army Corps of Engineers).}\]
\[\text{209 Id. at 26 (written statement of Michael McCabe, Regional Administrator, Region III, Environmental Protection Agency). EPA emphasized that “[t]his is the only drinking water system in the nation currently operated by the [Corps].” Id. at 22-23. Congressman Davis also emphasized that “[t]hese facilities are also unique in the United States in that they are the only public water treatment facilities operated by the Army Corps of Engineers.” Id. at 6 (statement of Rep. Thomas M. Davis, Chairman, District of Columbia Subcomm.).}\]
'pay as you go' requirement that all system capital improvements must be paid for... when they are performed.\textsuperscript{210}

Congress considered several proposals to reauthorize and amend the SDWA throughout the hearings on the Washington Aqueduct in the 103rd and 104th Congresses. The concerns raised in those congressional hearings contributed in no small measure to the eventual promulgation of a provision on the Washington Aqueduct in the SDWA Amendments. In the 103rd Congress, the House approved an SDWA reauthorization bill.\textsuperscript{211} The Senate also approved an SDWA reauthorization bill.\textsuperscript{212} Representative Jim Slattery (D-KS) introduced H.R. 3392 in October 1993.\textsuperscript{213} The bill made no mention of the Washington Aqueduct.\textsuperscript{214} On a vote of 43-1, The House Committee on Energy and Commerce approved the bill in September 1994.\textsuperscript{215} Soon thereafter, the entire House approved the bill on a voice vote.\textsuperscript{216} Although the House referred H.R. 3392 to the Senate, the senators failed to act on the reauthorization proposal.\textsuperscript{217}

Senator Max Baucus (D-MT) introduced S. 2019 in April 1994.\textsuperscript{218} The Senate Committee on Environment and Public Works had ordered

\textsuperscript{211} 140 CONG. REC. H9842 (daily ed. Sept. 27, 1994).
\textsuperscript{212} Id. at S13,579 (daily ed. Sept. 28, 1994).
\textsuperscript{213} Id. at S4334 (daily ed. Apr. 14, 1994).
the measure in lieu of S. 1547,219 a bill introduced by Senator Baucus in October 1993, on which the committee had held a hearing.220 The new bill, S. 2019, was approved upon introduction to the committee.221 In May 1994, the Senate approved the bill on a roll-call vote of 95-3.222 The House failed, however, to act on the referred S. 2019 proposal.223 The Senate bill would have authorized the Corps to borrow funds from the federal government for capital improvements to the Washington Aqueduct.224

In the 104th Congress, the House again approved a SDWA reauthorization bill: H.R. 3604.225 The Senate also approved an SDWA reauthorization bill: S. 1316.226 Representative Tom Bliley (R-VA) introduced H.R. 3604 in June 1996.227 On a vote of 42-0, the House Committee on Energy and Commerce approved the bill the next day.228 Soon thereafter, the House approved the bill on a voice vote.229 H.R. 3604, however, made no mention of the Aqueduct.230

Senator Dirk Kempthorne (R-ID) introduced S. 1316 in October 1995.231 This bill authorized the Corps to modernize the Washington Aqueduct.232 After a congressional hearing on the measure,233 the Senate
Committee on Environment and Public Works approved the bill by a vote of 16-0. In November, the Senate approved the bill in a roll-call vote of 99-0 and referred it to the House. One month after the House approved H.R. 3604, in July 1996, the House approved S. 1316 by a voice vote after the bill was amended to substitute the language of the House bill for the language of the Senate bill.

The House version of S. 1316 differed from the Senate version of S. 1316. Therefore, a conference committee convened in July to resolve the differences. The conference committee filed a report on a consensus bill on August 1, 1996, and the House approved the consensus bill on a roll-call vote of 392-30 the following day. The Senate simultaneously approved the measure on a roll-call vote of 98-0. President Clinton signed the SDWA Amendments into law on August 6, 1996.

Title I of the SDWA Amendments revised the SDWA, which is contained in Title XIV of the Public Health Service Act. First, Title I established an emphasis on the protection of source water for drinking water. Second, the SDWA Amendments augmented the public's right to know about safe drinking water. Third, the SDWA Amendments reformed the process for the promulgation of NPDWS, and also directed EPA to establish “a monitoring program for unregulated contaminants.” Fourth, the SDWA Amendments authorized EPA to provide grants for state revolving loan programs, which offer low-interest loans to public

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235 141 CONG. REC. S17,773 (daily ed. Nov. 29, 1995).
239 Id.
241 Id. at S9497-98 (daily ed. Aug. 2, 1996).
244 42 U.S.C. §§ 300f-300j.
245 Id. § 300j-13 to -14.
246 Id. § 300g-3(c)(1)-(4).
247 Id. § 300g-1(b)(3)(A)-(C).
248 Id. § 300j-4(a)(2)(A).
249 See generally id. § 300j-12.
water systems to assist with NPDWS compliance. Finally, the statute imposed the requirements of the SDWA on the Washington Aqueduct.

Title II of the SDWA Amendments authorized $26.5 million for safe drinking water research. Title II also directed EPA to develop a strategic plan for drinking water research and to forward the plan to the Senate Committee on Environment and Public Works and the House Committee on Commerce and Science. Finally, Title II authorized EPA to establish a partnership with the Robert S. Kerr Environmental Research Laboratory and the National Center for Ground Water Research.

Title III of the SDWA Amendments contained eight miscellaneous provisions on, for example, grants to Alaska for improved sanitation in rural and native villages, bottled drinking water standards, and grants to low-income communities along the U.S.-Mexican border for improved sanitation. Title III also included a provision on the Washington Aqueduct.

Section 306 of the SDWA Amendments first addressed, and on a short-term basis resolved, a concern raised before the Water Resources Subcommittee in December 1993 and June 1994 and before the D.C. Subcommittee in February 1996. In particular, the statute authorized the Corps to borrow from the federal government for funds in fiscal years 1997 through 1999 for capital improvements to the Washington Aqueduct. The Corps was authorized to borrow $29 million in fiscal year 1997, $24 million in fiscal year 1998, and $22 million in fiscal year 1999. The authorization required, however, a commitment on the part of the District, Arlington County, and Falls Church to pay a pro rata share of the principal and interest owed by the Corps to the federal government.

The authorization was not to "extend beyond fiscal year 1999."
In addition, Section 306 of the SDWA Amendments encouraged and authorized the District, Arlington County, and Falls Church to establish a public water system to own and operate the Washington Aqueduct:

(b) Regional Entity.—
(1) In general.—The Congress encourages and grants consent to [the District, Arlington County, and Falls Church] to establish a non-Federal public or private entity, or to enter into an agreement with an existing non-Federal public or private entity, to—
(A) receive title to the Washington Aqueduct; and
(B) operate, maintain, and manage the Washington Aqueduct in a manner that adequately represents all interests of its customers.
(2) Consideration.—If an entity receiving title to the Washington Aqueduct is not composed entirely of non-Federal public water supply customers, the entity shall consider the . . . historical provision of equity for the Aqueduct.
(3) Priority access.—[the District, Arlington County, and Falls Church] shall have priority access to any water produced by the Washington Aqueduct.
(4) Consent of the congress.—The Congress grants consent to the [District, Arlington County, and Falls Church] to enter into any interstate agreement or compact required to carry out this section.
(5) Statutory construction.—This section shall not preclude [the District, Arlington County, and Falls Church] from pursuing any option regarding ownership, operation, maintenance, and management of the Washington Aqueduct.\(^265\)

The statute required the Secretary of the Army to submit to Congress within one year a plan to establish a public water system to own and operate the Aqueduct.\(^266\) Section 306 also required the transfer of the Aqueduct, with the consent of the District, Arlington County, and Falls Church, to a non-federal public water system, approved by the Secretary of the Army, within three years.\(^267\)

\(^{265}\) Id. § 306(b), 110 Stat. at 1686.
\(^{266}\) Id. § 306(c), 110 Stat. at 1686.
\(^{267}\) Id. § 306(d), 110 Stat. at 1686-88.
(d) Transfer.—
(1) In general.—Subject to subsection (b)(2), the other provisions of this subsection, and any other terms and conditions the Secretary considers appropriate to protect the interests of the United States, the Secretary shall, not later than 3 years after the date of enactment of this Act and with the consent of a majority of [Washington, D.C., Arlington County, and Falls Church] and without consideration to the Federal Government, transfer all right, title, and interest of the United States in the Washington Aqueduct, and its real property, facilities, and personalty, to a non-Federal, public or private entity. Approval of such transfer shall not be unreasonably withheld by the Secretary.
(2) Adequate capabilities.—The Secretary shall transfer ownership of the Washington Aqueduct under paragraph (1) only if the Secretary determines, after opportunity for public input, that the entity to receive ownership of the Aqueduct has the technical, managerial, and financial capability to operate, maintain, and manage the Aqueduct.
(3) Responsibilities.—The Secretary shall not transfer title under this subsection unless the entity to receive title assumes full responsibility for performing and financing the operation, maintenance, repair, replacement, rehabilitation, and necessary capital improvements of the Washington Aqueduct so as to ensure the continued operation of the Washington Aqueduct consistent with the Aqueduct’s intended purpose of providing an uninterrupted supply of potable water sufficient to meet the current and future needs of the Aqueduct’s service area. 268

Finally, Section 306 of the SDWA Amendments directed EPA, prior to re-issuance of an NPDES permit for the Washington Aqueduct, to consult with the Secretary of the Army and with the District, Arlington County, and Falls Church on “opportunities for more efficient water facility configurations that might be achieved” through the transfer of the Aqueduct to a non-federal public water system. 269

268 Id.
269 Id. § 306(f), 110 Stat. at 1688.
Senator John Warner (R-VA) authored Section 306 of the SDWA Amendments and "wrote this section so that the customers of the Washington Aqueduct would have a reliable and safe source of drinkable water." Senator Warner drafted the statute to facilitate the capital improvements required for the continued safe and reliable operation of the Aqueduct.

Even prior to enactment of the SDWA Amendments, the Corps was exploring the possible transfer of the Aqueduct to a non-federal public water system. It had become apparent, by February 1995, that the Corps wanted to leave the public water system business. After the Secretary of the Army issued his recommendation for non-federal public ownership of the Aqueduct in February 1995, the Corps approached the Fairfax County Water Authority ("FCWA") with a proposal to transfer the ownership of the Aqueduct to the FCWA.

In 1995, the FCWA concluded that the transfer of the Aqueduct from the Corps to the FCWA would be feasible. The combination of the FCWA and the Washington Aqueduct would save an estimated $200 million in capital costs and in operation and maintenance costs. The District, however, opposed "suburban" ownership of the Aqueduct. The FCWA did not offer compensation for the Aqueduct and did not offer the District, Arlington County, or Falls Church seats on the FCWA board.

271 "To allow for these crucial improvements, Section 306 directs the Army Corps of Engineers to transfer the Washington Aqueduct, with the consent of a majority of the three customers, to a non-federal, public or private entity." Id.
272 The Water Resources Development Act of 1996: Hearing Before the Water Resources and Environment Subcomm. of the H. Comm. on Transportation and Infrastructure, 104th Cong. 601-20 (1996) [hereinafter WRDA of 1996 Hearing] (statement of Dr. John H. Zirschky, Principal Deputy Assistant Secretary of the Army for Civil Works). "We're the United States Army. And we would like to get out of the drinking water supply business." Id. at 602.
273 West Report, supra note 197, at 14.
274 WRDA of 1996 Hearing, supra note 272, at 599-600 (prepared statement of FCWA).
275 The studies show that it is both "technically and operationally feasible" for the Authority to accept the Aqueduct System. Id. at 600. See also D'Vera Cohn, Fairfax Seeks Control of Reservoirs, Wash. Post, Dec. 7, 1995, at J1; R.H. Melton, Davis Pushes Suburban Role in D.C. Services, Wash. Post, Feb. 9, 1996, at B1.
276 WRDA of 1996 Hearing, supra note 272, at 600.
277 "District officials strongly oppose transferring the Aqueduct to the Fairfax Authority for several reasons." Id. at 590 (statement of Rep. Eleanor Holmes Norton).
278 Id. at 590-91.
A possible deal for the FCWA to acquire the Washington Aqueduct collapsed in June 1997.\footnote{D’Vera Cohn, Offer to Run Waterworks Is Rejected, WASH. POST, June 12, 1997, at J1. See also Brooke A. Masters, New Agency May Run Aqueduct, WASH. POST, Aug. 21, 1997, at J1.} The Corps also received a proposal from American Water Works Company, owners and operators of private for-profit water systems, to operate the Aqueduct.\footnote{WRDA of 1996 Hearing, supra note 272, at 605-06 (statement of Edward W. Limbach, Vice President, American Water Works Company).} The proposal contemplated the creation of the Potomac American Aqueduct Company.\footnote{Id. at 606.} After the February 1995 release of the Corps recommendation on ownership of the Aqueduct, American Water Works Company discussed the proposal with the District, Arlington County, and Falls Church, as well as with the Corps.\footnote{“Over the past year, we have met with representatives of the user jurisdictions, members of Congress and staff, and we believe that our proposal addresses the issues that are of concern to different interests.” Id.} Despite the February 1995 recommendation of the Secretary of the Army,\footnote{“There is even a dispute over who should own the plants in Northwest Washington: Dalecarlia, on MacArthur Boulevard, and McMillan, near Howard University. They are now operated by the U.S. Army Corps of Engineers, which wants to get rid of them.” Eric Lipton & D’Vera Cohn, Costly Repairs Piling Up for Water System, WASH. POST, July 28, 1996, at B1 (emphasis added).} Section 306 of the SDWA Amendments, and the earnest proposals of the FCWA and the American Water Works Company, the Washington Aqueduct is still owned and operated by the Corps ten years after the enactment of the SDWA Amendments. In May 1998, the Corps executed a Memorandum of Understanding (“MOU”) with WASA, Arlington County, and Falls Church.\footnote{Memorandum of Understanding between the D.C. Water & Sewer Auth., Arlington County, Va., and the City of Falls Church, Va., and the Dep’t of the Army, Acting Through the Chief of Eng’rs (May 5, 1998) [hereinafter Memorandum of Understanding], available at http://www.arlingtonva.us/departments/EnvironmentalServices/uepd/aqueduct/EnvironmentalServicesCustbord.aspx.} Under the MOU, the Corps would maintain ownership and operation of the Aqueduct.\footnote{See, e.g., D’Vera Cohn, Will Water Agreement Stay Afloat? Two Virginia Cities Set to Vote on New Plan, WASH. POST, Apr. 2, 1998, at J1.} The MOU has governed the operation of the Aqueduct since that time.

The preamble to the MOU states that WASA, Arlington County, and Falls Church determined that, consistent with Section 306 of the SDWA Amendments, “a desirable option is for the ownership, operation, maintenance, and management of the Washington Aqueduct to remain...
with the U.S. Army Corps of Engineers."

The preamble, however, also states that this option for the ownership and operation of the Aqueduct should include the creation of a "stable and mutually beneficial partnership" between the Corps and WASA, Arlington County, and Falls Church.

The MOU establishes a Wholesale Customer Board ("Board"), comprised of WASA, Arlington County, and Falls Church, "to jointly relate to the Army on issues concerning, inter alia, the cost, quality, and availability of the water furnished by the Army from the Washington Aqueduct to wholesale water customers [i.e., WASA, Arlington County, and Falls Church] and the operation of the Washington Aqueduct, and other matters of mutual concern regarding the Washington Aqueduct." Under the MOU, "[t]he Army agrees to work closely in consultation and coordination with the Board . . . ." It is not apparent that the MOU fulfills the mandate and the intent of Section 306 of the SDWA Amendments. In Section 306(b)(1), the Congress encourages Washington, D.C., Arlington County, and Falls Church to establish a non-federal public or private water system. In Section 306(b)(4), Congress authorizes the District, Arlington County, and Falls Church to conclude "any interstate agreement or compact" to implement the statute. Finally, Section 306(b)(5) states that the statute shall not preclude the District, Arlington County, and Falls Church "from pursuing any option regarding ownership, operation, maintenance, and management of the Washington Aqueduct." It would thus appear that a transfer of the ownership of the Washington Aqueduct is contemplated and encouraged but is not required by Section 306.

Section 306(d) suggests an alternative inference. In particular, Section 306(d)(1) states that the Corps, within three years, shall transfer the ownership of the Washington Aqueduct to a public or private water system. Section 306(d)(2) states that the Corps shall transfer the ownership of the Aqueduct if the Corps determines that the public or private water system possesses the technical, managerial, and financial

286 Memorandum of Understanding, supra note 284, pmbl.
287 Id.
288 Id. art. II, § 1.
289 Id. art. III, § 1.
291 Id. § 306(b)(4), 110 Stat. at 1686.
292 Id. § 306(b)(5), 110 Stat. at 1686.
293 Id. § 306(d)(1), 110 Stat. at 1686.
whereithal to operate, maintain, and manage the Aqueduct. It would thus appear that a transfer of the ownership of the Washington Aqueduct is required before August 6, 1999.

This interpretation has found support in congressional hearings and on the floor of the Senate. In November 1997, EPA testified before the D.C. Subcommittee that "under a provision of the Safe Drinking Water Act Amendments of 1996, the U.S. Army Corps of Engineers is to turn over operation of the Aqueduct to a non-federal entity within two years." In June 1998, soon after the MOU was executed, Senator Warner, in remarks on the nomination of a new Secretary of the Army, opined that "[t]here are problems with the Corps remaining the owner of the Washington Aqueduct, besides that this seems inconsistent with existing law." Regardless of the interpretation, the Washington Aqueduct still is owned and operated by the Corps. Several recent controversies associated with D.C. drinking water, however, suggest the need for a reconsideration of the proposal to transfer the Washington Aqueduct to a public or private water system.

III. PERCHLORATE CONTAMINATION OF THE WASHINGTON AQUEDUCT

In October 2004, the local media in the District reported that a random chemical analysis in 2003 of groundwater near the Washington Aqueduct had revealed a dangerously elevated level of perchlorate. One month later, a chemical analysis of water in the Washington Aqueduct indicated the nominal presence of perchlorate. The concentration of perchlorate in the drinking water ranged between 1.2 and 1.8 parts per billion ("ppb").

Perchlorate is a suspected toxin with possible adverse health effects on the human thyroid gland that may result in developmental delays.

294 Id. §306(d)(2), 110 Stat. at 1686.
295 Status of WASA, supra note 55, at 45 (written statement of Michael McCabe, Regional Administrator, Region III, Environmental Protection Agency).
299 Id.
300 GAO, PERCHLORATE SYSTEM NEEDED, supra note 297, at 1.
"Since 1998, EPA and [the U.S. Department of Defense ("DOD")] have sponsored a number of studies on the health risks of perchlorate using experimental, field study, and data analysis methods."\(^{301}\) In 1998, EPA first published a draft risk assessment on exposure to perchlorate.\(^{302}\) A revised draft risk assessment was published in January 2002.\(^{303}\) The revised draft proposed a safe level of exposure to perchlorate of 1 ppb in drinking water (or 0.00003 milligrams per day per kilogram of body weight).\(^{304}\)

In January 2005, the National Academy of Sciences ("NAS") reviewed numerous studies on the health effects of perchlorate and concluded that the studies failed to establish an apparent relationship between exposure to perchlorate and developmental delays.\(^{305}\) The NAS recommended additional studies on the health effects of perchlorate on children and pregnant women.\(^{306}\) The NAS proposed a safe level of exposure to perchlorate of 0.0007 milligrams per day per kilogram of body weight.\(^{307}\) On the basis of this NAS recommendation, EPA proposed a revised safe level of exposure to perchlorate of 24.5 ppb in drinking water in February 2005.\(^{308}\)

There is no NPDWS for perchlorate because it is not regulated under the SDWA.\(^{309}\) Perchlorate may be regulated, however, under the Clean Water Act,\(^{310}\) the Comprehensive Environmental Response, Compensation,
and Liability Act ("CERCLA"),\textsuperscript{311} or the Resource Conservation and Recovery Act of 1976 ("RCRA").\textsuperscript{312} In addition, the SDWA authorizes EPA to respond to releases of contaminants into public water systems if there is an "imminent and substantial" threat to public health and if no state or local government has acted, even if the contaminant has no NPDWS under the SDWA.\textsuperscript{313}

Finally, perchlorate is monitored under the Unregulated Contaminant Monitoring Regulation ("UCMR") promulgated by EPA in 1999\textsuperscript{314} in accordance with the SDWA Amendments.\textsuperscript{315} The UCMR required large public water systems to test for, among other things, perchlorate from 2001 to 2003.\textsuperscript{316} The results of the tests, conducted in accordance with strict procedural requirements,\textsuperscript{317} were reported to EPA.\textsuperscript{318} EPA used those results


\textsuperscript{312} See generally Resource Conservation and Recovery Act of 1976, 42 U.S.C. §§ 6901-92k (2007). In general, CERCLA is applicable to inactive hazardous waste sites and RCRA is applicable to active waste sites. 42 U.S.C. §300i(a) (2007).

\textsuperscript{313} 42 U.S.C. § 300i(a). "Both EPA and state environmental agencies have used federal environmental laws, such as CERCLA, RCRA, and the NPDES provisions of the Clean Water Act, as authority to respond to releases of substances that may endanger public health or the environment, including perchlorate." GAO, PERCHLORATE SYSTEM NEEDED, supra note 2997 at 16.

\textsuperscript{314} See generally 40 C.F.R. § 141.40 (2007).


\textsuperscript{316} 40 C.F.R. § 141.40(a)(1)(ii)(A). The UCMR required large public water systems to test for 2, 4-dinitrotoluene, 2, 6-dinitrotoluene, DCPA mono-acid degradate, DCPA di-acid degradate, 4, 4'-DDE, EPTC, molinate, MTBE, nitrobenzene, terbacil, alachor ESA, and perchlorate. Id. § 141.40(a)(3) tbl.1.

\textsuperscript{317} See, e.g., id. § 141.40(a)(5)(ii)(A)-(G) (specifying procedural requirements for large public water systems). For data quality control requirements, see id. § 141.40 app.A.

\textsuperscript{318} Id. § 141.40(a)(4)(ii)(D). See also id. § 140.35 (addressing requirements for the reporting of unregulated contaminant monitoring results).
in the consideration of possible drinking water standards. The UCMR was revised in August 2005, but will also require large public water systems to test for perchlorate from 2007 to 2011.

The U.S. Government Accountability Office ("GAO") has identified almost 400 sites in thirty-five states—and in the District—with perchlorate contamination in drinking water, surface water, groundwater, and soil. On the basis of UCMR test results for perchlorate from 2001 to 2003, GAO has identified 153 public water systems with perchlorate contamination. Nonetheless, GAO reports that the full extent of perchlorate contamination in the U.S. is unknown.

Perchlorate is associated with explosives and munitions. The chemical "has been used for decades by the Department of Defense, the National Aeronautics and Space Administration (NASA), and the defense industry in the manufacturing, testing, and firing of rockets and missiles." "According to EPA and state environmental agency officials, a leading known cause of the perchlorate found was defense-related activities." Indeed, 110 of the 400 sites with perchlorate contamination are associated with DOD, NASA and defense-related activities. The DOD, in September 2003, adopted a policy statement on perchlorate contamination on DOD sites. The policy statement requires the DOD to test for

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319 The results were used "to support the Administrator's determination of whether or not to develop drinking water standards for a particular contaminant, and to develop standards for the contaminants that the Administrator selects." Revisions to the Unregulated Contaminant Monitoring Regulation for Public Water Systems, 64 Fed. Reg. 50,556 (Sept. 17, 1999).
321 GAO, PERCHLORATE SYSTEM NEEDED, supra note 297, at 10, 12 fig.1 (showing maximum perchlorate concentrations reported in any media and number of sites).
322 153 public water systems represented about four percent of the 3,722 public water systems that tested for perchlorate. Id. at 13-14.
323 Id. at 14.
324 Id. at 1.
325 Id. at 23.
326 Id. at 13 fig.2 (activities linked to perchlorate by site).
327 See Memorandum from Philip W. Grone, Principal Assistant Deputy Under Secretary of Defense (Installations and Environment) to Assistant Secretary of the Army (Installations and Environment) et al., Interim Policy on Perchlorate Sampling (Sept. 29, 2003) [hereinafter Interim Policy on Perchlorate Sampling], available at http://www.dodperchlorateinfo.et/efforts/policy/documents/perchlorlate_sampling_policy.pdf; see also Memorandum from Donald R. Schregardus, Deputy Assistant Secretary of the Navy (Environment) to Deputy Assistant Secretary of the Army (Environment, Safety, and Occupational Health) et al., Interim Guidance on Sampling and Testing for Perchlorate (Feb. 5, 2004),
perchlorate contamination when the presence of perchlorate is suspected on the basis of prior or current DOD activities and when there is a probable pathway for human exposure.\(^3\) However, DOD’s policy on perchlorate sampling does not address cleanup.\(^3\) Just fifty-one of almost four hundred sites in the U.S. with perchlorate contamination, according to the GAO, have some plan for environmental remediation.\(^3\)

GAO has identified two sites in the District with perchlorate contamination: the Washington Aqueduct and Spring Valley, a residential neighborhood in Northwest Washington, D.C.\(^3\) GAO neglected to mention, however, that the Washington Aqueduct is adjacent to Spring Valley. The neighborhood, which is almost 670 acres, is home to almost 1200 private residences, numerous commercial properties, and American University,\(^3\) which was the site of a U.S. Army base that was used during World War I for the development of chemical munitions.\(^3\)


328 Interim Policy on Perchlorate Sampling, supra note 327, at 2.


330 GAO, PERCHLORATE SYSTEM NEEDED, supra note 297, at 20.

331 Id. at 34 app.II (listing facilities and sites where perchlorate was found and concentration levels).


attributable to the toxic constituents of poisonous gases triggered a controversial environmental remediation of Spring Valley.\textsuperscript{335} The chemical munitions and related contamination also triggered several civil suits against the federal government, the U.S. Army, and American University, filed by Spring Valley residents.\textsuperscript{336}

The environmental remediation of Spring Valley is the job of the Corps. Under the Defense Environmental Restoration Program ("DERP"),\textsuperscript{337} DOD is responsible for the environmental restoration of active defense installations and of used defense sites.\textsuperscript{338} The program was established for the "identification, investigation, research and development, and cleanup of contamination from hazardous substances, pollutants, and contaminants."\textsuperscript{339} Under the DERP, DOD is responsible for the environmental restoration of active facilities and sites that are under their jurisdiction, as well as inactive facilities and sites that were under DOD jurisdiction prior to the enactment of SARA.\textsuperscript{340}

Consistent with this dual mandate, DOD has established a dedicated program for the environmental restoration of formerly used defense sites ("FUDS"), which include inactive facilities that were under DOD jurisdiction prior to the enactment of SARA.\textsuperscript{341} Most FUDS are relics of the Cold War, World War II, and World War I.\textsuperscript{342} Some FUDS, however, were used in the Civil War.\textsuperscript{343} DOD has identified over 9,500 properties


\textsuperscript{337} See generally 10 U.S.C. §§ 2700-10 (2007). The DERP was established by SARA.


\textsuperscript{339} 10 U.S.C. § 2701(a)(1).

\textsuperscript{340} Id. § 2701(b)(1).

\textsuperscript{341} Id. § 2701(c)(1)(A)-(B).


for possible environmental remediation under the FUDS program. In addition, DOD has estimated that the environmental restoration of FUDS properties will cost $15-20 billion over seventy years. The FUDS program is implemented by the Corps.

In response to the chemical munitions discovered in Spring Valley in January 1993, the Corps, in Operation Safe Removal, unearthed and removed over 140 shells and projectiles from the Spring Valley construction site by January 1993. Throughout the rest of 1993, the Army "undertook a major historical research effort." On the basis of the research, the Army then surveyed almost 500 properties in Spring Valley with metal detection and ultrasonic equipment. The detection of subsurface metal objects necessitated fifteen excavations for possible munitions in 1994. No additional significant quantities of chemical munitions were unearthed. In 1995, the Corps concluded that no additional World War II munitions remained.

CONTAMINATION: CORPS NEEDS TO REASSESS ITS DETERMINATIONS THAT MANY FORMER DEFENSE SITES DO NOT NEED CLEANUP 1 (2002) ("Many of these properties . . . were acquired or used by DOD more than 30 to 40 years ago and in some cases more than 100 years ago.").


Linda Wheeler, Army Ends Evacuations in Spring Valley; Last of 141 Shells Removed From NW Site; 2nd Phase of Cleanup Set, WASH. POST, Jan. 31, 1993, at B7. See also Hamil R. Harris, Army Locates Second Possible Munitions Site; Area Near Original Spring Valley Dig, WASH. POST, Feb. 3, 1993, at D5.


War I chemical munitions were buried in Spring Valley and that no additional environmental restoration in the neighborhood was required.352

In January 1999, the Corps returned to Spring Valley.353 Prodded by the D.C. Department of Health (“DOH”),354 the Corps reanalyzed historical and archival records, photographs, and maps and concluded that it may not have surveyed a possible disposal site for poisonous gases (mustard gas and Lewisite) in 1993-94.355 The overlooked burial pit was not on the campus of American University but in the backyard of a private Spring Valley residence, an excavation of which the Corps commenced in the Spring of 1999.356

By 1999, the Corps and the residents of Spring Valley, were concerned not just with chemical munitions but with contamination attributable to the toxic constituents of poisonous gases.357 Of particular concern to the Corps and EPA was arsenic, a naturally occurring substance and a component of Lewisite.358 Thus, the investigation that the Corps commenced in the Spring of 1999 searched for both chemical munitions and arsenic contamination.359

352 U.S. Army, Record of Decision for the Operation Safe Removal Formerly Used Defense Site (June 2, 1995), reprinted in 2001 Spring Valley Hearing, supra note 348, at 188.
354 See, e.g., 2001 Spring Valley Hearing, supra note 348, at 78-91 (written statement of Ivan C. A. Walks, M.D., Chief Health Officer, Department of Health).
355 Id. at 261-75 (written statement of Colonel Charles J. Fiala, Jr., Commander, Baltimore District, U.S. Army Corps of Engineers).
357 Steve Vogel, Army Unveils Plans for NW Chemical Dig; Residents Worried About Possible Contamination of Soil, WASH. POST, Feb. 5, 1999, at B08. See also Steve Vogel, Concerns Still Cloud WWI Mustard Gas Site, WASH. POST, Feb. 7, 1999, at V05.
358 “The fact is that up until roughly the late nineties—1997, 1996, 1997, 1998—this was a munition site and it was not an arsenic site. Arsenic wasn’t indicated to be a problem until the late nineties.” 2001 Spring Valley Hearing, supra note 348, at 125 (statement of Thomas C. Voltaggio, Acting Regional Administrator, Mid-Atlantic Region, Environmental Protection Agency).
359 “However, since early 1999, with the additional discovery of buried ordnance and elevated levels of arsenic-contaminated soil . . . the arsenic levels in the soil have become the primary focus of soil cleanup efforts.” 2002 Spring Valley Hearing, supra note 332, at 26-27 (prepared statement of David G. Wood, Director, Natural Resources and Environment, U.S. Government Accountability Office).
Over the course of fourteen months, the excavation in the back-
yard of the private Spring Valley residence uncovered 680 items associated
with chemical munitions in two separate burial pits. The excavation was
followed by chemical analysis of adjacent and nearby soil samples, which
confirmed the presence of widespread arsenic contamination. In addition, several additional excavations were commenced on nearby properties through 2001.

Over time, the Corps, with EPA assistance and DOH cooperation,
broadened the chemical analysis of Spring Valley soil to over 1100 residential

In May 2001, the Corps discovered a third burial pit in the back-
yard of a private Spring Valley residence that had previously been excavated in 1999. An excavation of the third burial pit uncovered almost 400 items associated with chemical munitions research and development.

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360 2001 Spring Valley Hearing, supra note 348, at 88-89 (written statement of Ivan C. A. Walks, M.D., Chief Health Officer, Department of Health).
361 Steve Vogel, Arsenic Found in Ambassador’s NW Yard; Army Excavation of WWI Munitions Also Unearths Poison at Neighbor’s Home, AU, WASH. POST, Jan. 27, 2000, at B03. The concentration of naturally occurring arsenic in the U.S. is 3-5 parts per million (“ppm”) but the concentrations of arsenic discovered in Spring Valley exceeded 1000 ppm.
362 2001 Spring Valley Hearing, supra note 348, at 87-88 (written statement of Ivan C. A. Walks, M.D., Chief Health Officer, Department of Health).
363 2002 Spring Valley Hearing, supra note 332, at 24 (written statement of David G. Wood, Director, Natural Resources and Environment, Government Accountability Office)
364 2001 Spring Valley Hearing, supra note 348, at 87-88 (written statement of Ivan C. A. Walks, M.D., Chief Health Officer, Department of Health).
369 The over 400 items included 11 pieces of ordnance with mustard gas or Lewisite. Id.
Thereafter, the Corps surveyed numerous additional Spring Valley properties for buried ordnance. The Corps also undertook the removal of arsenic-contaminated soil from seven Spring Valley residential properties and from the athletic fields of American University.

In the Spring of 2002, the Corps investigation of sites used for the development and disposal of chemical munitions, which was expanded in 2001 to include Catholic University in Northeast Washington, D.C., was again expanded to include several small sites in Maryland and Virginia. In June 2002, GAO reported that the total anticipated cost of the Spring Valley environmental restoration would be $125 million through 2007. This estimate assumed the need for the removal of arsenic-contaminated soil on 160 Spring Valley properties.

By the Summer of 2003, the Corps had completed a chemical analysis of ninety-six percent of the 1600 residential and nonresidential properties in Spring Valley, had removed the soil from twenty-two of 140 contaminated properties, and had completed the removal of several thousand tons of arsenic-contaminated soil from American University. The Corps also reported that "[b]esides arsenic, [an] extensive sampling effort has not identified any other chemicals of concern at the site." The D.C. DOH observed that "we have located more weapons of mass destruction in Spring Valley over the last four years than have been found in Iraq."

In November 2004, the Corps reported that the removal of arsenic-contaminated soil from the neighborhood would not be completed until 2010, and that a debris field on the campus of American University could be a fourth burial pit for waste associated with chemical munitions research and development. The Corps also reported that a chemical analysis of

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368 Id. at 26. See also id. at 71 (written statement of Thomas C. Voltaggio, Deputy Regional Administrator, Mid-Atlantic Region, Environmental Protection Agency).
369 Id. at 52-53 (prepared statement of Colonel Charles J. Fiala, Jr., Commander, Baltimore District, U.S. Army Corps of Engineers). See also Debbi Wilgoren, Spring Valley Excavation to Focus on 2 Sites; Army Scans Show Presence of Metal in WWI Test Area, WASH. POST, Aug. 8, 2002, at B3.
372 Id. at 59.
374 Id. at 3.
soil samples from 320 Spring Valley residential and non-residential properties had detected no other chemicals “of concern” and that a “comprehensive groundwater quality study” would be undertaken.377

In October 2005, the Corps reported that an analysis of groundwater samples, drawn from a network of test wells in Spring Valley “just east and south” of the Dalecarlia Reservoir, were indicative of low concentrations of perchlorate and arsenic.378 In February 2006, an analysis of additional groundwater samples also was indicative of perchlorate “at some of the highest levels detected to date.”379 One sample, drawn from a well about 1,000 feet south of the Dalecarlia Reservoir, indicated a concentration of forty-eight ppb.380

These findings precipitated a public hearing on Spring Valley and the Washington Aqueduct before the D.C. Council in April 2006.381 The General Manager of the Washington Aqueduct testified that “[w]e do not see the current situation as a risk to the drinking water.”382 The Corps testified that “the limited groundwater contamination” poses no threat to the Dalecarlia Reservoir or to D.C. drinking water.383

EPA confirmed the presence of perchlorate in Spring Valley groundwater samples but observed that “[s]ince no one drinks groundwater, consumption of the contaminated groundwater does not present a current risk.”384 Finally, the Department of Health confirmed the detection of

377 Id. at 3.
379 Susan Levine, Groundwater Toxin Found at Additional D.C. Sites; Officials Want to Know if Contaminant, Detected at High Levels, Could Reach Reservoir, WASH. POST, Feb. 18, 2006, at B2.
380 Between May 2005 and February 2006, the Corps had installed twenty-nine test wells throughout Spring Valley. Id.
383 Id. (written statement of Colonel Robert J. Davis, Commander, Baltimore District, U.S. Army Corps of Engineers). “[O]ur groundwater elevation data does suggest that some limited groundwater is likely seeping into the reservoir at specific locations. However, we expect this volume of groundwater to be minute compared to the Potomac River water entering the reservoir every day.” Id.
384 Id. (written statement of Steven R. Hirsh, Spring Valley FUDS Site Project Manager, Region III, Environmental Protection Agency).
perchlorate in Spring Valley groundwater that "is moving in the direction" of the Dalecarlia Reservoir.\footnote{Id. (written statement of Hamid Karimi, Interim Chief, Bureau of Hazardous Material and Toxic Substances, Environmental Health Administration, Department of Health). See also id. (written statement of Erik D. Olson, Senior Attorney, Natural Resources Defense Council); Id. (written statement of James Collier); Id. (written statement of Kent Slowinski).}

Running from 1993 to 1995, and resumed in the spring of 1999, the environmental restoration of Spring Valley appears to have made considerable progress in the removal of buried World War I chemical munitions and arsenic-contaminated soil. The Corps expects to complete this response by 2010, but the recent detection of perchlorate near the Washington Aqueduct suggests the potential for environmental contamination beyond the elevated levels of arsenic in Spring Valley soil.

If the environmental remediation of Spring Valley is expanded to include measures for the protection of the Washington Aqueduct from possible perchlorate contamination, then the Corps would be responsible for those measures as well as for the continued operation of the Washington Aqueduct. Under these circumstances, it is arguable that the Corps would have a conflict of interest that could compromise one of the two missions assigned to the Corps.\footnote{See Water Treatment Facilities, supra note 21, at 121.} Indeed, in October 2004, the \textit{Washington Post} reported that the Corps argued against the need for immediate and aggressive action to investigate the source and migration of the perchlorate.\footnote{Carl D. Leonnig, \textit{Groundwater Toxin Near Aqueduct; Army Engineers Faulted for Inaction Since 2003 Finding}, \textit{WASH. POST}, Oct. 27, 2004, at B5.}

Given the potential for a conflict of interest between the ownership and operation of the Washington Aqueduct and the environmental remediation of the Spring Valley FUDS to protect the Washington Aqueduct from perchlorate contamination, perhaps it is time for a reassessment of the decade-old proposal to transfer the Washington Aqueduct to a local non-federal public water system. Indeed, the proposal merits a reassessment in light of additional developments associated with safe drinking water in Washington, D.C.

\section*{IV. Lead Contamination in D.C. Drinking Water}

In January 2004, the local media in the District first reported on recurrent instances of elevated concentrations of lead in D.C. drinking

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\textsuperscript{385} Id. (written statement of Hamid Karimi, Interim Chief, Bureau of Hazardous Material and Toxic Substances, Environmental Health Administration, Department of Health). See also id. (written statement of Erik D. Olson, Senior Attorney, Natural Resources Defense Council); Id. (written statement of James Collier); Id. (written statement of Kent Slowinski).

\textsuperscript{386} See Water Treatment Facilities, supra note 21, at 121.

water since 1992. The media reports prompted numerous congressional hearings, D.C. Council hearings, and several independent investigations into the lead crisis.

The immediate reaction to the lead crisis was threefold. First, in February 2004, Lead Emergency Action for the District ("LEAD"), a coalition of national and local health, environmental, and public interest organizations issued ten recommendations to resolve the lead crisis in D.C. drinking water. In particular, LEAD urged EPA to initiate a full criminal and civil investigation against WASA. LEAD also urged EPA to initiate an enforcement action against the Washington Aqueduct.

Second, the D.C. government formed an Interagency Task Force in February 2004. In April, the Task Force issued a report with fifteen recommendations including: continued tests for lead in D.C. drinking water, continued replacement of lead service lines, improved communication among D.C. government agencies, and for possible District primacy under the SDWA.

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391 Id. at 79-80. LEAD also recommended, inter alia, that: (i) WASA expedite the replacement of lead service lines, (ii) the D.C. Council establish a permanent citizen water board to oversee the Washington Aqueduct and WASA, (iii) WASA be subject to increased oversight by the D.C. Council, and (iv) a task force be established to investigate the sources of lead contamination in the District. Id. at 81-82.

392 Id. at 80.

393 HOLDER, supra note 389, at 10.

394 HON. ANTHONY A. WILLIAMS & HON. CAROL SCHWARZ, FINAL REPORT OF THE INTERAGENCY TASK FORCE ON LEAD IN DRINKING WATER AND RECOMMENDATIONS OF THE
Third, in March of 2004, the Centers for Disease Control ("CDC") issued a Morbidity and Mortality Weekly Report ("MMWR") Dispatch on the emerging D.C. lead crisis. The MMWR Dispatch recommended the elimination of lead exposures to children and the reduction of the level of lead in drinking water to below the EPA action level of fifteen ppb.

Within weeks of the media reports of elevated concentration of lead in D.C. drinking water, the House Committee on Government Reform held a congressional hearing on the role of the federal government in assuring safe drinking water in Washington, D.C. The EPA Office of Water explained the Lead and Copper Rule; Region III of the EPA emphasized that “[t]wo public water systems are responsible for complying with provisions” of the Lead and Copper Rule in the District, and the Corps addressed in detail the switch in November 2000 from chlorine to chloramines in the disinfection process of the Washington Aqueduct. Finally, WASA emphasized that “WASA provides the water, we do not produce it.” WASA also advised the committee that the water system had hired a law firm to conduct an independent investigation of the lead crisis.

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396 Id. at 270.
398 Id. at 20-54 (written statement of Benjamin Grumbles, Acting Assistant Administrator for Water, Environmental Protection Agency, and Donald Welsh, Administrator, Region III, Environmental Protection Agency).
399 Id. at 32.
400 Id. at 59-63 (written statement of Thomas P. Jacobus, General Manager, Washington Aqueduct, Baltimore District, U.S. Army Corps of Engineers). The Corps indicated that a corrosion control program, in place since 1994, would be reviewed in light of increased concentrations of lead in D.C. drinking water. Id. at 61-63.
401 Id. at 70 (written statement of Glenn S. Gerstell, Chairman, Board of Directors, D.C. Water and Sewer Authority).
402 Id. at 70-71. WASA had retained the Washington, D.C. law firm of Covington & Burling. The investigation would be supervised by a partner with the firm, Eric Holder, Jr., a former U.S. Attorney for the District of Columbia. Id. at 70. See also id. at 174-92 (written statement of Erik D. Olson, Senior Attorney, Natural Resources Defense Council); id. at 197-208 (written statement of Professor Ellen K. Silbergeld, Bloomberg School of Public Health, Johns Hopkins University); id. at 212-50 (written statement of Marc Edwards, Professor of Civil and Environmental Engineering, Virginia Polytechnic Institute and State University).
The Senate also convened a congressional hearing on the D.C. lead crisis soon after the local media began reporting on elevated lead levels. In April of 2004, the Subcommittee on Fisheries, Wildlife and Water ("Fisheries Subcommittee") held a hearing on the detection of lead in D.C. drinking water and on short- and long-term solutions to the problem.\textsuperscript{403} The EPA Office of Water again discussed the Lead and Copper Rule;\textsuperscript{404} Region III of the EPA discussed several interim measures implemented by EPA and WASA to protect the public from elevated concentration of lead in D.C. drinking water.\textsuperscript{405} WASA detailed the measures initiated in response to elevated lead levels under the Lead and Copper Rule, the relationship of the elevated lead levels to corrosion control, and the measures initiated beyond the requirements of the Lead and Copper Rule.\textsuperscript{406} Finally, in a brief statement, the Corps focused on the corrosion control program of the Washington Aqueduct.\textsuperscript{407}

The House Committee on Government Reform held a second congressional hearing on the D.C. lead crisis in May 2004.\textsuperscript{408} In the subsequent hearing, which was convened in part to discuss the Lead-Free Detection of Lead in the D.C. Drinking Water System: Hearing Before the Subcomm. on Fisheries, Wildlife and Water of the S. Comm. on Environment and Public Works, 108th Cong. (2004), available at http://www.access.gpo.gov/congress/senate/senate09sh108.html.

\textsuperscript{403} Id. at 166-67 (written statement of Benjamin H. Grumbles, Acting Assistant Administrator, Office of Water, Environmental Protection Agency).

\textsuperscript{404} Id. at 169-73 (written statement of Donald Welsh, Director, Region III, Environmental Protection Agency).

\textsuperscript{405} Id. at 179-84 (written statement of Jerry N. Johnson, General Manager, D.C. Water and Sewer Authority).

\textsuperscript{406} Id. at 247-48 (written statement of Thomas P. Jacobus, General Manager, Washington Aqueduct, Baltimore District, U.S. Army Corps of Engineers). See also id. at 192-93 (written statement of Dr. Daniel R. Lucey, Interim Chief Medical Health Officer, Department of Health); id. at 268-82 (written statement of Gloria Borland, DuPont Circle Parents); id. at 284-90 (written statement of Jody Lanard, M.D., Risk Communication Consultant); id. at 290-97 (written statement of Dana Best, M.D., M.P.H., Director, Smoke-Free Homes Project, Medical Director, Healthy Generations Program, Assistant Professor, George Washington University School of Medicine and Health Sciences, Children's National Medical Center); id. at 303-10 (written statement of Erik D. Olson, Senior Attorney, Natural Resources Defense Council); id. at 318 (written statement of Muriel Wolf, M.D., Children's Medical Center, George Washington University Medical School); id. at 318-20 (written statement of Andy Bressler, Resident, District of Columbia).

\textsuperscript{407} Thirsty for Results: Lessons Learned From the District of Columbia's Lead Contamination Experience: Hearing Before the H. Comm. on Government Reform, 108th Cong. (2004) [hereinafter Thirsty for Results].
Drinking Water Act of 2004, the committee heard from the EPA Office of Water, which discussed several national EPA initiatives to evaluate the extent of lead contamination in drinking water, Region III of the EPA, which reported on the implementation of a new corrosion control program for WASA and on an EPA audit of the WASA lead service line program; and the Corps, which also discussed the new corrosion control program and which opined that the ownership of the Washington Aqueduct by the Corps was "sound." WASA, however, after a discussion of recent actions and long-term strategies to address and resolve the lead crisis, questioned if "the time has arrived for us to take a second look at this [ownership] issue."

In June 2004, EPA issued an Administrative Order against WASA for numerous violations of the Lead and Copper Rule since 1998. The Administrative Order found that WASA had failed to report to EPA several test results that exceeded the Action Level and had failed to initiate the required response to excessive lead levels in drinking water. The consent order required WASA to: (i) submit to EPA a plan to test D.C. drinking water for lead, (ii) develop a new plan for public education, (iii) develop a plan for the identification of lead service lines, (iv) develop a program for the replacement of lead service lines, (v) develop a plan to encourage...

410 See Thirsty for Results, supra note 408, at 12-23 (written statement of Benjamin Grumbles, Acting Assistant Administrator for Water, Environmental Protection Agency).
411 Id. at 27-38 (written statement of Donald S. Welsh, Administrator, Region III, Environmental Protection Agency).
412 Id. at 40-43.
413 Id. at 47-56 (written statement of Jerry N. Johnson, General Manager, D.C. Water and Sewer Authority).
414 Id. at 52. See also id. at 76-81 (written statement of Howard Neukrug, Director, Office of Watersheds, Philadelphia Water department, on behalf of American Water Works Association); id. at 103-108 (written statement of Angela Logomasini, Director of Risk and Environmental Policy, Competitive Enterprise Institute); id. at 117-29 (written statement of Paul D. Schwartz, National Policy Coordinator, Clean Water Action); id. at 142-44 (written statement of Katherine Funk on behalf of Parents for Nontoxic Alternatives).
residents to consent to the full replacement of lead service lines, and (vi) develop a plan for enhanced database management.\footnote{U.S. GEN. ACCOUNTING OFFICE, REP. NO. GAO-050-344, DISTRICT OF COLUMBIA'S DRINKING WATER: AGENCIES HAVE IMPROVED COORDINATION, BUT KEY CHALLENGES REMAIN IN PROTECTING THE PUBLIC FROM ELEVATED LEAD LEVELS 10 (2005) [hereinafter IMPROVED COORDINATION] (discussing selected requirements of the June 2004 consent order).}

In July of 2004, the law firm hired internally to investigate WASA issued a report on the elevated concentrations of lead in D.C. drinking water.\footnote{HOLDER, supra note 389.} In meticulous detail, the report chronicled WASA compliance with the Lead and Copper Rule between 2000 and 2004.\footnote{Id. at 1.} On the basis of the information accumulated through the investigation, the law firm offered twenty recommendations to the WASA board.\footnote{Id. at 126-43. The twenty recommendations related to WASA compliance with EPA regulations, WASA internal communications, WASA board oversight, WASA external communications, and WASA public relations. Id. at 127-39. The recommendations also related to the EPA Lead and Copper Rule, EPA oversight, D.C. government involvement in the lead crisis, D.C. Department of Health involvement, and the need for a multi-jurisdictional working group. Id. at 139-43.} The report also questioned the “bifurcated” manner in which drinking water is treated and distributed in the District:

Although it is beyond the scope of this report, it is also noteworthy that the Aqueduct makes treatment decisions regarding the District’s water supply that affect both WASA and the District’s residents. The cause of elevated lead levels in the District over the last few years may have been due to water treatment decisions by the Aqueduct in which WASA and local representatives were relatively uninvolved. Whether this structure should be modified is an issue that should be examined. At a minimum, the unusual bifurcated nature of this water system raises important issues of coordination and communication that should be considered and addressed by the concerned parties.\footnote{Id. at 142.}

In July 2004, the House Subcommittee on Environment and Hazardous Materials ("Hazardous Materials Subcommittee") held a fourth congressional hearing on lead in D.C. drinking water.\footnote{Tapped Out, supra note 390.} The EPA Office
of Water explained the measures undertaken to evaluate the nation-wide threat of lead in drinking water.\textsuperscript{422} Region III of the EPA discussed the June 2004 EPA consent order to which WASA agreed.\textsuperscript{423} The Corps attributed the increased concentration of lead in D.C. drinking water to recent failures in corrosion control of distribution pipes.\textsuperscript{424} Finally, WASA discussed the EPA consent order and the law firm report.\textsuperscript{425}

In addition, WASA resurrected the issue of Washington Aqueduct ownership. WASA stated that “the District Government and other responsible entities should look very closely at the issues of primacy and the future responsibility for water production for the nation’s capital.”\textsuperscript{426} Moreover, “[a] transfer of authority from federal to local government is no panacea—there are no infallible systems, managers or processes, but the question of unified management of the water system should be thoughtfully and objectively considered.”\textsuperscript{427}

\textsuperscript{422} Id. at 10-14 (written statement of Benjamin H. Grumbles, Acting Assistant Administrator for Water, Environmental Protection Agency).
\textsuperscript{423} Id. at 17-19 (written statement of Donald S. Welsh, Administrator, Region III, Environmental Protection Agency).
\textsuperscript{424} Id. at 20-22 (written statement of Thomas P. Jacobus, General Manager, Washington Aqueduct, U.S. Army Corps of Engineers). In 2000, the Washington Aqueduct began to add chloramines to treated water. Id. at 21. This action was in response to EPA SDWA regulations on disinfectant residuals. Id. This chemical, the Corps concluded, had increased the corrosiveness of treated water, which had the unintended effect of allowing the lead in distribution pipes to leach into the treated water. Id.
\textsuperscript{425} Tapped Out, supra note 390, at 24-29 (written statement of Jerry N. Johnson, General Manager, D.C. Water and Sewer Authority). See also id. at 47 (written statement of John B. Stephenson, Director, Natural Resources and Environment, Government Accountability Office); id. at 61-63 (written statement of Jay Rutherford, Director, Water Supply Division, Vermont Department of Environmental Conservation, on Behalf of Association of State Drinking Water Administrators); id. at 65-68 (written statement of Brian L. Ramaley, Director, Newport News Waterworks, on behalf of Association of Metropolitan Water Agencies); id. at 71 (written statement of Aaron Colangelo, Natural Resources Defense Council); id. at 86-91 (written statement of Donald L. Correll, President and CEO, Pennichuck Corporation, on behalf of the National Association of Water Companies); id. at 93-101 (written statement of Lynn Stovall, General Manager, Greenville Water System, on behalf of the American Water Works Association); id. at 103-09 (written statement of Bruce P. Lanphear, Cincinnati Children’s Hospital Medical Center).
\textsuperscript{426} Id. at 28.
\textsuperscript{427} Id. (emphasis added). See also id. at 47 (written statement of John B. Stephenson, Director, Natural Resources and Environment, Government Accountability Office) (“The relationship between regulators and water systems is more complicated in the District of Columbia, where the Washington Aqueduct, owned by the U.S. Army Corps of Engineers, draws and treats water from the Potomac River.”).
The D.C. Appleseed Center for Law and Justice, Inc. ("Appleseed Center"), a non-partisan public interest organization, issued a report on the D.C. lead crisis in December 2004. The Appleseed Center offered five recommendations to resolve the lead crisis. In particular, the organization recommended that the District acquire primacy under the SDWA to improve the enforcement of the Lead and Copper Rule. In addition, the Appleseed Center recommended that, consistent with the SDWA Amendments, WASA acquire the Washington Aqueduct.

Fourteen months after initial media reports on elevated concentrations of lead in D.C. drinking water, GAO, in March 2005, issued a report on the D.C. lead crisis that focused on the relationship between WASA and the Washington Aqueduct. GAO concluded that, in the past fourteen months, the agencies had improved upon inter-governmental coordination but several challenges remained. GAO also concluded that WASA had initiated several steps to minimize the exposure of at-risk populations to lead.

The House Committee on Government Reform held a fifth and final congressional hearing on the D.C. lead crisis in March 2005. The Committee heard from the EPA Office of Water, which reported on a drinking water lead reduction plan that contemplated several revisions to the Lead and Copper Rule including water treatment processes, public awareness, and lead service line replacement.
the Committee on the new corrosion control program implemented by the Washington Aqueduct in June 2004, on WASA compliance with the EPA Administrative Order issued in June 2004, and on the WASA lead service line replacement program.\textsuperscript{437} The Corps reported on the new corrosion control program,\textsuperscript{438} and WASA discussed the June 2004 EPA Administrative Order, the July 2004 law firm report, and a January 2005 audit of elevated lead concentrations conducted by the District of Columbia Inspector General.\textsuperscript{439}

Finally, an independent consultant testified that there is now a need for "substantive changes" to the Lead and Copper Rule.\textsuperscript{440} The consultant also opined that the Washington Aqueduct should not be owned and operated by the Corps.

The basis for the Corps' role goes back to the 1850's in anticipation of the Civil War. The Corps does not operate any other water treatment plant in the U.S. other than at military installations. The situation is more than an anachronism. It is way past time to get the Corps out of the picture and centralize responsibility in a single regional entity reporting to a governing body representing all served jurisdictions.\textsuperscript{441}

Soon after this fifth congressional hearing on the D.C. lead crisis, WASA announced a decline in lead concentrations in D.C. drinking water.\textsuperscript{442} WASA reported that, for the first time in four years, the EPA

Water, Environmental Protection Agency).\textsuperscript{437} Id. at 28-33 (written statement of Donald S. Welsh, Administrator, Region III, Environmental Protection Agency).\textsuperscript{438} Id. at 36-39 (written statement of Thomas P. Jacobus, General Manager, Washington Aqueduct, Baltimore District, U.S. Army Corps of Engineers).\textsuperscript{439} Id. at 42-49 (written statement of Jerry N. Johnson, General Manager, D.C. Water and Sewer Authority). See also id. at 62-64 (written statement of Stephen Estes-Smargiassi, Director of Planning, Massachusetts Water Resources Authority, on behalf of the American Waterworks Association); id. at 86-106 (written statement of Erik D. Olson, Senior Attorney, Natural Resources Defense Council). See generally D.C. Office of the Inspector Gen., Audit of Elevated Levels of Lead in the District's Drinking Water (2005), available at http://www.oig.dc.gov/news/view2.asp?url=release%2FWASA%5Ffinal%5FReport%5FRevised%5F04%2D22D17LA%2Epdf&mode=audit&archived=0&month=20050.\textsuperscript{440} Id. at 109-113 (written statement of James Elder). The consultant retired from EPA in 1995 after twenty-four years of employment. Id. at 110.\textsuperscript{441} Id. at 111.\textsuperscript{442} D'Vera Cohn, Water Lead Levels Below Federal Limits; D.C. Consumers Urged to Continue Precautions, WASH. POST, May 11, 2005, at B1.
action level of fifteen ppb was not exceeded in tests for lead in D.C. drinking water. WASA attributed the decline to the new corrosion control program implemented by the Washington Aqueduct in June 2004. In January 2006, WASA announced that the EPA action level had not been exceeded in tests for lead in D.C. drinking water for a full year. Also in January, GAO, which had critiqued the EPA review of state implementation of the Lead and Copper Rule, reported that the lack of adequate data impaired EPA oversight of state implementation. GAO also identified six weaknesses in the Lead and Copper Rule that could have an adverse impact on public health.

In June 2006, EPA confirmed that the action level of fifteen ppb had not been exceeded in tests for lead in D.C. drinking water for a full year. Under the Lead and Copper Rule, if an action level is not exceeded for two consecutive six-month periods, then the public water system may, with state or EPA approval, test for lead and copper at fifty, instead of 100, different residences over a one-year period. Although EPA confirmed that the action level had not been exceeded, no such EPA approval was issued, and "WASA still must report at least 100 water test samples every six months for at least the next year."

The D.C. lead crisis of 2004 shined the spotlight of public attention for the most part not on the Corps but on WASA, which is responsible for the distribution pipes from which the lead in D.C. drinking water leached. Nonetheless, the lead crisis implicated the unique structure for the treat-
ment and distribution of D.C. drinking water and unavoidably raised once again the issue of Washington Aqueduct ownership and operation. In this respect, the water crisis of 2004 was an encore of the water crisis of 1993-1994.

V. RESIDUALS PROGRAM OF THE WASHINGTON AQUEDUCT

A third controversial issue associated with safe drinking water in Washington, D.C. also suggests the need for a reconsideration of the proposal to transfer the Washington Aqueduct to WASA or to a local, non-federal public water system. The treatment and purification of water drawn from the Potomac River generates a considerable amount of waste. In the past, the Washington Aqueduct discharged this waste back into the Potomac River. EPA authorizes these discharges under a permit issued pursuant to the Clean Water Act.

Congress enacted the Federal Water Pollution Control Act ("FWPCA") in 1972. Amended in 1977, the FWPCA became the Clean Water Act. The Clean Water Act regulates discharges of pollutants into U.S. navigable waters. In particular, Section 301 of the statute provides that, except in accordance with, inter alia, Section 402, "the discharge of any pollutant by any person shall be unlawful." Section 402 of the Clean Water Act establishes the National Pollutant Discharge Elimination System ("NPDES") and authorizes EPA to issue permits for discharges of pollutants in strict accordance with conditions set forth in the statute.

The environmental impact of discharges by the Washington Aqueduct into the Potomac River was a subject of particular interest to the U.S. Congress in 2001. In October 2001, the House Subcommittee on National Parks, Recreation, and Public Lands ("Public Lands Subcommittee") held an oversight hearing to investigate the environmental impact of Aqueduct

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452 See infra notes 461-63 and accompanying text.
453 See infra notes 461-63 and accompanying text.
454 See infra note 464 and accompanying text.
458 Id. § 1311(a).

EPA discussed the NPDES permit issued to the Washington Aqueduct under the Clean Water Act in April 1989 and the anticipated issuance of a new permit. The Corps discussed the role and the operations of the Washington Aqueduct, and detailed the nature of Aqueduct discharges into the Potomac River. Finally, the National Wildlife Institute argued that the Aqueduct discharges violate the Clean Water Act, the Endangered Species Act, and National Park Service regulations.

The full House Committee on Resources held a subsequent hearing in June of 2002. The National Park Service clarified that NMFS has sole jurisdiction over the shortnose sturgeon but that the U.S. Fish and Wildlife Service ("FWS") has jurisdiction over other fish species, including striped bass, alewife, blueback herring and American shad. The National

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461 Id. at 7-8 (written statement of John Parsons, Associate Regional Director for Lands, Resources, and Planning, National Capital Region, National Park Service, U.S. Department of the Interior).
464 Id. at 13-16 (written statement of Patricia Gleason, Chief, Maryland and District of Columbia Watershed Branch, Water Protection Division, Environmental Protection Agency).
465 Id. at 19-21 (written statement of Colonel Charles J. Fiala, Jr., Commander and District Engineer, Baltimore District, U.S. Army Corps of Engineers).
468 Id. at 10-11 (written statement of Donald W. Murphy, Deputy Director, National Park Service, U.S. Department of the Interior).
Oceanic and Atmospheric Administration ("NOAA") explained that the recent identification of shortnose sturgeon in the Potomac River had resulted in consultations, pursuant to Section 7 of the Endangered Species Act, between NMFS and EPA.

The U.S. Army, like the Corps in October 2001, discussed the role and the operations of the Washington Aqueduct and detailed the nature of Aqueduct discharges into the Potomac River. The U.S. Army also contributed a report on the environmental impact of Aqueduct discharges. Finally, EPA emphasized that the Washington Aqueduct is owned and operated not by a municipal public water system but by the federal government, and that the Washington Aqueduct has no legal access to capital markets to finance a capital improvement program.


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470 *Endangered Sturgeon*, supra note 467, at 15-17 (written statement of Timothy R.E. Keeney, Deputy Assistant Secretary, U.S. Department of Commerce).
471 *Id.* at 29-31 (written statement of Dominic Izzo, Principal Deputy Assistant Secretary of the Army for Civil Works, U.S. Army Corps of Engineers).
472 *Id.* at 24-29 (reprinting the *WASHINGTON AQUEDUCT & ENVT'L PROT. AGENCY, WASHINGTON AQUEDUCT SEDIMENT DISCHARGE—REPORT TO CONGRESS* (2002)). The report discussed prior studies of alternatives for the disposal of wastes generated by the Washington Aqueduct. *Id.* at 26-28. The report also explored current options for the disposal of those wastes. *Id.* at 28-29.
473 *Id.* at 34-39 (written statement of Benjamin H. Grumbles, Deputy Assistant Administrator for Water, Environmental Protection Agency).
477 *Id.* at 8-26 (containing standard conditions for NPDES permits).
and Part III of the new permit imposes five special conditions for the Washington Aqueduct.\(^{478}\) In particular, Part I of the new NPDES permit for the Washington Aqueduct establishes numeric discharge limitations and thus reduces the amount of waste that may be discharged back into the Potomac River.\(^ {479}\) The permit also requires the Corps to measure for discharges of perchlorate from the Dalecarlia reservoir.\(^ {480}\)

To permit the Washington Aqueduct an adequate amount of time for compliance with the new NPDES permit, EPA concluded a Federal Facility Compliance Agreement ("FFCA") with the Corps.\(^ {481}\) The FFCA establishes several milestones and requires the Washington Aqueduct to be in full compliance with the discharge limitations of the new NPDES permit by December 30, 2009.\(^ {482}\)

The FFCA acknowledges that, although the Washington Aqueduct is owned and operated by the Corps, the operation and maintenance of the Aqueduct is not funded through the federal budget but through revenues from water sales to the District, Arlington County, and Falls Church.\(^ {483}\) The FFCA also acknowledges that the relationship between the Corps and the District, Arlington County, and Falls Church is governed by the MOU,\(^ {484}\) which requires the Corps to submit for Board approval proposed agreements with federal or state agencies.\(^ {485}\)

In response to the new NPDES permit and the FFCA, the Washington Aqueduct has, for the past several years, engaged in a thorough evaluation of alternatives for the disposal of waste generated through water treatment and purification. In October 2005, the Corps selected an alternative\(^ {486}\) that has raised the ire of the neighborhood that surrounds the Dalecarlia Reservoir of the Washington Aqueduct.

\(^{478}\) Id. at 27-29 (establishing special conditions).


\(^{480}\) Washington Aqueduct NPDES Permit, supra note 475, at 3-4 (establishing effluent limitations for Dalecarlia discharges). There is no limitation on discharges of perchlorate. Id.

\(^{481}\) FFCA, supra note 475.

\(^{482}\) Id. at 5-6 para. 22.

\(^{483}\) Id. at 2 para. 5.

\(^{484}\) Id. at 2 para. 6.

\(^{485}\) Memorandum of Understanding, supra note 284, art. IV, § 2(c).

In January 2004, the Corps announced the preparation of an environmental impact statement ("EIS"), under Section 102 of the National Environmental Policy Act ("NEPA"), to explore alternatives for the disposition of waste generated by the Washington Aqueduct. The first step in the Environmental Impact Assessment process was a Project Introduction and Description of Proposed Action and Alternatives ("Introduction and Description"), which discussed alternatives for the disposition of Aqueduct waste. The twenty-six alternatives were screened against seven criteria. The Introduction and Description concluded that four of the twenty-six alternatives should be investigated in more detail in the EIS.

The Corps also released an Engineering Feasibility Study, which provided a detailed analysis of each alternative under the screening criteria. The Feasibility Study also included an estimate of costs associated with the four alternatives selected for additional investigation: (i) no action (No Act Alternative), (ii) the treatment of residuals at the Dalecarlia plant and the disposal of waste in an onsite monofill (Dalecarlia Monofill Alternative), (iii) the treatment of residuals at the Dalecarlia plant and the transportation of waste via a dedicated pipeline from the Dalecarlia plant to the Blue Plains plant for additional treatment and disposal (Blue Plains Alternative), and (iv) the treatment of residuals at the Dalecarlia plant and the offsite disposal of waste trucked to licensed landfills (Truck From Plant Alternative).

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490 Id. at 2-5. For example, the alternatives were screened for compliance with the requirements of the FFCA. Id. Most of the alternatives were inconsistent with the screening criteria. Id. at 2-5 to 2-17.
491 Id. at 3-1.
493 Id. at 3-1 to 3-49.
494 "As currently conceived, the monofill would be approximately 50 ft tall on the Dalecarlia Parkway side and 80 ft tall on the Dalecarlia Reservoir side. The footprint of the monofill is anticipated to occupy approximately 30 acres." Id. at 5-1.
495 "This pipe would be approximately 10 miles long and 12 in[ch]es in diameter." Id. at 5-2.
496 Id. at 5-1 to 5-6 (describing alternatives for detailed evaluation). "The estimated number of trucks is approximately eight per day (5 days per week) on average with a peak number
The Corps issued a Scope of Statement for the EIS in August 2004. Finally, in December 2004, the Corps, in accordance with the FFCA, issued an Alternatives Analysis. Like the Introduction and Description, the Alternatives Analysis discussed the initial twenty-six alternatives for the disposition of Aqueduct waste. The Alternatives Analysis also discussed ninety-four additional alternatives suggested by the public between May and November 2004. Two of the ninety-four public alternatives were consistent with the seven screening criteria.

The Alternatives Analysis fashioned five alternatives for additional investigation in the draft EIS: the Dalecarlia Monofill Alternative (Alternative A), the Truck From Plant Alternative (Alternative B), the Blue Plains Alternative (Alternative C), the No Action Alternative (Alternative D), and the Truck from Reservoir Alternative (Alternative E). Two of the five alternatives were not recommended for ultimate implementation:

Some of the impacts associated with these alternatives could be mitigated to lesser levels, but none of the work is possible within the schedule required by the FFCA. Alternative C is not consistent with the District of Columbia Water and Sewer Authority's long-term plans for its Blue Plains Advanced Wastewater Treatment Plant of approximately 33 trucks per day (6 days per week) under maximum loading conditions."

Id. at 5-2.


FFCA, supra note 475, at 5 para. 21.


Id. at 2-1 to 2-19.

Id. at 2-19 to 2-31.

Id. at 2-20. Eighty-five of the ninety-four public alternatives were inconsistent with the screening criteria. Id. Seven of the public alternatives were still under investigation. Id. “One of the two feasible alternatives (P84) represents a new disposal option for an existing alternative and will, therefore, not be evaluated in detail in the DEIS.” Id. One public alternative, therefore, would be investigated in detail in the EIS. See id.

Id. at 2-36.
and is more than double the cost of each of the other alternatives. The development of Alternative A is not consistent with the schedule for investigations of this site by the U.S. Army Corps of Engineers for its ongoing remediation efforts for the Spring Valley FUDS project.

In addition, Alternative D (the No Action Alternative) could not be selected "because it would place [the Washington Aqueduct] in violation of the Federal Clean Water Act . . . ." Thus Alternative B (the Truck From Plant Alternative) and Alternative E (the Truck From Reservoir Alternative) were the preferred alternatives for the disposition of Aqueduct waste.

In April of 2005, the Corps issued a draft EIS for a proposed water treatment residuals management process for the Washington Aqueduct. In September, the Corps issued a final EIS. In December, EPA approved the final EIS. In the final EIS, the Corps selected Alternative E, the Truck From Reservoir Alternative, for the water treatment residuals management process for the next twenty years. The EIS evaluated the five alternatives fashioned in the Alternatives Analysis under eight

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504 Id. at 3-2 (emphasis added). The estimated cost of Alternative C was $165 million. Id. at 3-5. "This cost is more than double the comparable cost for Alternative A ($66,000,000) and Alternative B ($58,000,000)." Id.
505 Id. "Throughout the DEIS preparation process, EPA has confirmed that they would be unwilling to modify the NPDES permit to allow the Washington Aqueduct to return to a residuals disposal practice consistent with the No Action alternative." Id.
506 Id. at 3-6 through 3-8.
509 Environmental Impact Statements and Regulations; Availability of EPA Comments, 70 Fed. Reg. 72,299 (Dec. 2, 2005). "EPA believes that the Final EIS adequately considers the potential impacts of the preferred and other alternatives and has no objections to its implementation." Id.
Council on Environmental Quality ("CEQ") criteria. Like the Alternatives Analysis, the EIS rejected Alternative A (the Dalecarlia Monofill Alternative) and Alternative C (the Blue Plains Alternative):

[D]uring the course of this NEPA process, Washington Aqueduct has learned that the development of Alternative A is not consistent with the schedule for investigations of this site by the U.S. Army Corps of Engineers for its ongoing remediation efforts for the American University Experiment Station (AUES) Formerly Used Defense Site (FUDS) project. Further, Alternative C, like the other piping alternatives examined during the screening process, is not consistent with the District of Columbia Water and Sewer Authority’s (DC WASA’s) long-term plans for its Blue Plains AWWTP and is more than double the cost of each of the other alternatives. Both alternatives would have unacceptably large potential visual, cultural, forest habitat, and perhaps recreational, impacts.

Thus, the Washington Aqueduct was left with Alternative E (the Truck From Reservoir Alternative) and Alternative B (the Truck From Plant Alternative). “The costs of these alternatives are consistent with the project budget, which is wholly dependent for financial support from [WASA, Arlington County and Falls Church] and the rate-paying public.” Alternative E was selected over Alternative B due to: (i) reduced visual impact on the surrounding residential neighborhood, (ii) its potential to minimize impacts, (iii) less truck noise, and (iv) the distance between surrounding residential neighborhood and residuals processing facilities.

On the basis on the EIS, in October 2005 the Corps formally selected Alternative E, the Truck From Reservoir Alternative, in a
Record of Decision ("ROD"). The ROD detailed the facilities that Alternative E would require for the collection and treatment of residuals. The ROD also reiterated the rationale for the disqualification of Alternative A (the Dalecarlia Monofill Alternative) and Alternative C (the Blue Plains Alternative):

More specifically, during the course of this NEPA process, Washington Aqueduct has learned that the development of Alternative A is not consistent with the schedule for investigations of this site by the U.S. Army Corps of Engineers for its ongoing remediation efforts for the American University Experiment Station (AUES) Formerly Used defense Site (FUDS) project.

Further, Alternative C is not consistent with the District of Columbia Water and Sewer Authority's (DC WASA) long-term plans for its Blue Plains AWWTP and therefore DC WASA has declined to accept the piped residuals at their facility. Alternative C is also more than double the cost of each of the other alternatives.

The ROD also observed that both Alternative E (the Truck From Reservoir Alternative) and Alternative B (the Truck From Plant Alternative) “are consistent with the project budget, which is wholly dependent for financial support from [WASA, Arlington County and Falls Church] and the rate-paying public.” The Corps selected Alternative E over Alternative B.

The EIS for a water treatment residuals management process for the Washington Aqueduct indicates that Alternative C (the Blue Plains

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516 The facilities include Georgetown Reservoir residuals collection, pumping, and conveyance facilities, Dalecarlia sedimentation basin residuals collection, pumping, and conveyance facilities, and residuals thickening and dewatering facilities. Id. at 3-4.
517 Id. at 8-9 (emphasis added). With respect to Alternative A, in addition, “[t]here was significant public concern about removing a 30-acre stand of mature, mixed hardwood forest and replacing it with a residuals monofill with a 20-year life span.” Id. at 10.
518 Id. at 9.
519 Alternative E “is chosen in this [ROD] as the selected alternative for the management of Washington Aqueduct water treatment residuals.” Id.
Alternative) was disqualified due to: (i) inconsistent WASA plans for the Blue Plains plant, and (ii) the cost of this alternative, which would be financed not by the Washington Aqueduct but by WASA, Arlington County and Falls Church. These considerations raise once again the issue of Washington Aqueduct ownership and operation.

Indeed, the ownership and operation of the Washington Aqueduct by the Corps instead of by WASA, for example, appear to have determined in no small measure the results of the EIS. First, if WASA owned and operated the Washington Aqueduct, then the plans for the Blue Plains plant might be revised to accommodate the Blue Plains Alternative. Second, WASA is authorized to finance the operation and maintenance of the infrastructure for water distribution and sewage treatment through the issuance of revenue bonds,\(^\text{521}\) which the Corps is not authorized to issue. Thus the cost of the Blue Plains Alternative would pose a less formidable obstacle for WASA than for the Corps.

CONCLUSION

In 1995, the Corps recommended that the Washington Aqueduct be transferred to a local, non-federal, public water system. After bacteria were discovered in D.C. drinking water in 1994, there were calls for the transfer of the Washington Aqueduct from the Corps to a local water system. After lead was discovered in D.C. drinking water in 2004, there again were calls for the transfer of the Washington Aqueduct from the Corps to a local public water system. The proposed water treatment residuals management process for the Washington Aqueduct appears to be in large measure the result of the Corps, instead of WASA, ownership and operation of the Washington Aqueduct.

The possible contamination of the Washington Aqueduct with perchlorate, the lead contamination in D.C. drinking water, and the controversial water treatment residuals management process for the Washington Aqueduct in the aggregate, suggest the need for a serious reassessment of the decade-old proposal to transfer the Washington Aqueduct to a local, non-federal, public water system. Perhaps it is now time for WASA to assume the ownership and operation of the Washington Aqueduct and to allow the Corps to abandon the business of water treatment and purification.

\(^{520}\) Id. at 8.
\(^{521}\) D.C. CODE §§ 34-2202.08 to .09 (2001).