

**REPORT OF INVESTIGATION  
2009-0178**

**INVESTIGATION INTO ALLEGATIONS THAT  
D.C. WATER AND SEWER AUTHORITY AND  
D.C. DEPARTMENT OF HEALTH OFFICIALS INTENTIONALLY OR  
NEGLIGENTLY MISLED THE PUBLIC REGARDING ELEVATED  
LEVELS OF LEAD IN THE DISTRICT'S WATER AND THE  
CORRESPONDING HEALTH IMPACT ON DISTRICT CHILDREN**

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**INVESTIGATIVE SYNOPSIS**

**Background**

Pursuant to a request from two District of Columbia (D.C.) councilmembers, the D.C. Office of the Inspector General (OIG) initiated an investigation to determine whether there is a correlation between elevated lead levels in District tap water and lead-poisoned children, and whether D.C. authorities either intentionally or negligently misled the public. The referral arose after *The Washington Post* published an article on January 27, 2009, entitled “High Lead Levels Found in D.C. Kids,” about a study in the journal *Environmental Science and Technology* that referenced contradictory information disseminated by D.C. Water and Sewer Authority (DCWASA)<sup>1</sup> and D.C. Department of Health (DOH) officials, prior to 2004, about lead in the water.

The D.C. Council request asked us to review testimony going back 5 years from the date of the request, and even earlier conduct. Despite the fact that this Office has looked into other aspects related to the lead in the water issue (see OIG audit reports dated January 5, 2005, and June 10, 2005), and the inherent difficulties, inclusive of the time-consuming nature, attendant to conducting such an investigation into this subject matter, the OIG felt that there was merit to reviewing these issues in an effort to provide helpful information to DCWASA and DOH officials when conducting or performing similar work or evaluations in the future.

Accordingly, the OIG opened an investigation into these matters. OIG investigators obtained and analyzed thousands of records,<sup>2</sup> including documents, reports, electronic mail messages (emails), laboratory results, correspondence, and filings with Environmental Protection Agency (EPA) and the Centers for Disease Control (CDC). OIG investigators also listened to recordings

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<sup>1</sup> DCWASA subsequently became DC Water, but is referred to in this report as DCWASA.

<sup>2</sup> OIG investigators also reviewed the *Summary of Investigation Reported to the Board of Directors of the District of Columbia Water and Sewer Authority*, conducted under the direction of an attorney from Covington & Burling, and issued on July 16, 2004.

of D.C. Council hearings that related to the lead in the water issue.<sup>3</sup> In addition, OIG investigators interviewed current and former employees of DOH<sup>4</sup>, EPA, and CDC, and former employees of DCWASA.<sup>5</sup>

This report summarizes the OIG's investigation, findings, and recommendations. As further discussed, the OIG investigation revealed that: 1) lead experts and health officials could not determine with certainty whether a correlation existed between elevated lead levels in District tap water and lead-poisoned District children; 2) during D.C. Council hearings, DCWASA officials provided misleading information regarding that agency's compliance with EPA regulations with respect to lead in the District's tap water; and 3) there is no evidence that DOH officials deliberately misled or carelessly educated the public regarding DOH's efforts to protect the public in response to DCWASA exceeding the lead action level for District tap water.

### The Initial Allegations

In January 2009, the journal *Environmental Science & Technology* published an article entitled, "Elevated Blood Lead in Young Children Due to Lead-Contaminated Drinking Water: Washington, DC, 2001-2004." The article concluded that the incidence of elevated blood lead levels for children aged 1.3 years or younger in the District "increased more than 4 times comparing 2001-2003 when lead in water was high versus 2000 when lead in water was low."

OIG investigators spoke with two of the authors about the article's conclusions. Author 1 explained that he used 28,000 blood lead measurements provided to him by Author 2, consisting of children of all ages who had blood samples taken when treated at Children's Hospital for any medical reason. Author 1 then compared the blood lead measurements with the water lead levels taken from the test samples conducted by DCWASA in various areas of the District. Author 1 found that in those areas of the District with the highest concentrations of water lead levels, children aged less than 30 months suffered a 2.4% increase of elevated blood lead levels. According to Author 1, the correlation between the elevation of lead in the water and elevated blood lead levels was as strong as science could get and concluded that there was a direct causal relationship between elevated water lead levels and elevated blood lead levels.

Author 2, however, could not definitively state that there was a direct causal relationship between lead in the water and lead in the blood because there are multiple causes for lead in the blood and lead in the water is only one factor. Author 2, based on her research, believed there was a strong association between children living in high-risk neighborhoods, defined as neighborhoods with high water lead levels, and children with elevated blood lead levels living in

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<sup>3</sup> The D.C. Council held hearings on various dates from February 2004 through September 2004, which can be found on the D.C. Council website, [www.dccouncil.washington.dc.us](http://www.dccouncil.washington.dc.us).

<sup>4</sup> Many of the employees interviewed worked for DOH during a portion of the time period reviewed, but subsequently became employees of the District Department of the Environment (DDOE) in 2007, when DDOE took over the Childhood Lead Poisoning Prevention Program (CLPPP) from DOH. These employees are referred to throughout this report as DOH or CLPPP employees.

<sup>5</sup> OIG investigators also contacted or sought to contact two former key DCWASA personnel, a former deputy general manager and a former supervisor. OIG investigators were unable to interview them because they were beyond the geographic jurisdiction of the OIG's subpoena power and refused to voluntarily submit to interviews.

the same areas. Author 2 advised, however, that she could not conclusively state that there was a direct causal relationship between elevated water lead levels and elevated blood lead levels in children because there may have been other environmental factors in the home that could have contributed to the elevated blood lead levels. She also said that she believes DCWASA attempted to give the appearance that it was in compliance with EPA standards by deliberately testing and re-testing in areas of the District it thought would demonstrate the lowest possible water lead levels. She also described DOH as overwhelmed with the blood lead level data provided and believes that DOH should have done more research regarding the relationship between blood lead levels in children and elevated levels of lead in the water.

### The District's Water Supply and Monitoring

The District of Columbia water supply comes from the Washington Aqueduct, a water treatment plant operated by the U.S. Army Corps of Engineers (Washington Aqueduct). DCWASA delivers water to District residents through pipes that run throughout the District. DCWASA regularly monitors the District's water supply for lead levels. The bulk of the testing occurs during June, July, August, and September, although the testing year runs from July 1 through June 30. Consequently, results from tests conducted at the beginning of the year, such as in July, August, and September, are not reported until that year ends the following June 30. Therefore, results can be nearly a year old before they are reported and analyzed for any necessary strategy changes.

The former laboratory chief at the Washington Aqueduct advised that in 2000, the Washington Aqueduct began experiencing high chlorine residual that exceeded the allowable amounts under the EPA disinfectant by-product rule. This was during the same time period (November 2000), that the Washington Aqueduct continued to use chlorine as the primary disinfectant, but switched to chloramines as a secondary disinfectant for water treatment.

Subsequently, in 2001 and 2002, the Washington Aqueduct noticed during its regular monitoring for metals in the water, that there was an increase in lead level samples submitted by DCWASA. According to the former laboratory chief, the Washington Aqueduct concluded that lead was leaching into the water somewhere in the distribution system controlled by DCWASA. As a result, DCWASA began an investigation to determine the source of the increase in lead levels. The former laboratory chief explained that the collection protocol for residential water samples was to let the water sit for 6 to 8 hours and collect a First Draw Sample. Then, after letting the water run for 5 minutes (the 5-minute protocol), collect a Second Draw Sample. The former laboratory chief stated that when Second Draw Samples were tested, some of the lead levels were higher than the First Draw Samples, leading to the conclusion that some of the water in the Second Draw Samples may have been samples of water that had been sitting in lead service lines.

In June 2002, the former DCWASA water quality control manager informed an EPA environmental specialist that for the 2001-2002 monitoring period, DCWASA would not be in

compliance with the Lead Action Level (LAL)<sup>6</sup> specified in the Lead and Copper Rule (L&C Rule). Once a municipality exceeds the LAL, there are EPA protocols for lead remediation and subsequent testing of the lead service lines that must be followed. Specifically, federal regulations required that DCWASA take the following steps for remediation: (1) notify the public that it had exceeded the LAL; (2) count the number of lead service lines in the District; (3) replace 7% of the lead service lines each year until the water lead levels fall below EPA guidelines; and (4) increase the frequency of lead level monitoring of District water.<sup>7</sup>

In February 2004, DCWASA created a technical expert working group that consisted of personnel from DCWASA, the Washington Aqueduct, employees of a joint venture hired by DCWASA (joint venture), and other consultants to determine the source of the leaching lead. The group ultimately determined that the increase in water lead levels most likely was attributable to the use of chloramines as a disinfectant, which reduced the oxidation reduction potential of the water, thereby increasing the amount of lead leached into the water distribution system.

The EPA drinking water branch chief advised that prior to the 2001-2002 testing period, DCWASA was in compliance with the L&C Rule lead levels and was in a reduced monitoring status, which required testing only 50 samples per test period. Both the drinking water branch chief and the former laboratory chief, however, explained that once DCWASA exceeded EPA's LALs, it was required under the L&C Rule<sup>8</sup> to increase its water sampling of addresses with lead service lines to 100 residences, twice a year.

### **Testimony Before the D.C. Council**

In 2004, after DCWASA exceeded the LAL and media coverage focused on the water lead level, officials from DCWASA, DOH, and several federal agencies testified before the D.C. Council regarding the results of the District's testing programs, the health impact to District residents of elevated water lead levels, and the steps agencies were taking to protect the public. OIG investigators reviewed the testimony of the former DCWASA general manager and deputy general manager, and the former chair of the DCWASA Board of Directors (former board chair) on several occasions, to analyze what they said regarding the elevated levels of lead in the District's water and the continuing lead testing. OIG investigators also reviewed the testimony of DOH officials, including the former interim chief medical officer, the former chief, Bureau of Hazardous Materials (former hazardous materials chief), the former deputy chief medical officer, and the former interim senior deputy director, Emergency Health and Medical Services Administration, before the D.C. Council on several occasions in 2004.

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<sup>6</sup> The LAL is specified in the L&C Rule, 40 C.F.R. Part 141, and refers to requirements that trigger specific action when there are elevated levels of lead in the water.

<sup>7</sup> 40 C.F.R. §§ 141.84-86.

<sup>8</sup> Once it has been determined that the action level has been exceeded, an agency is required to collect samples pursuant to the Code of Federal Regulations, Title 40, Protection of Environment, Part 141, National Primary Drinking Water Regulations, Subsection 141.86 (Monitoring Requirements for Lead and Copper in Tap Water. Title 40 C.F.R. § 141.86(a)(8) requires that water systems that have either lead pipes or lead service lines must draw 50 percent of the samples it collects during each monitoring period from sites that contain lead pipes, or copper pipes with lead solder, and 50 percent of the samples from sites served by a lead service line.

Based on the investigation, the OIG has concluded that DCWASA officials provided misleading information before the D.C. Council about the agency's compliance with EPA regulations relating to lead in the District's tap water. The OIG's review of the testimony of DOH officials revealed no evidence that DOH officials intentionally or negligently provided misleading information regarding the steps DOH was taking to educate and protect the public given that DCWASA had exceeded the LAL. That review, however, revealed that there was uncertainty as to whether levels of lead in the water that were high enough to exceed the EPA action level, were sufficient to cause a health risk to District residents, including a vulnerable population.<sup>9</sup> In addition, the review of the testimony of DOH officials raises concerns as to whether the DOH officials selected to address the lead in the water problem had the necessary expertise properly to assess the health risks and advise the public and the D.C. Council as to appropriate and/or necessary courses of action.

Finally, there was no conclusive evidence that elevated water lead levels, by themselves, caused elevated blood lead levels. Other environmental factors, including lead paint and dust, consistently were cited by government officials, health experts, and even lead experts, as an important concern when analyzing any test results concerning lead contamination.

#### Testimony of DCWASA Officials at D.C. Council Hearings

The OIG investigation determined that three DCWASA officials gave misleading testimony before the D.C. Council: the former deputy general manager, the former board chair, and the former general manager.

On February 4, 2004, the former deputy general manager misled the D.C. Council when he testified that the high level of lead in the water was occurring in a "few feet of pipeline from the main to the house," DCWASA uncovered the [level in the water] situation in 2002 and [DCWASA] "has fully complied with every requirement of the EPA regulations as a result of triggering the action level." The OIG's investigation determined that those comments were misleading because DCWASA failed to comply with every requirement of the EPA regulations. DCWASA failed to adhere to the guidelines set forth under the L&C Rule during the Lead Replacement Program, specifically as it relates to the re-testing of partially replaced lead service lines, testing methodology used in obtaining water samples, and reporting to EPA the total number of homes tested during the Lead Replacement Program. Additionally, the OIG investigation found that DCWASA included test results obtained by using an incorrect methodology in the number of results it reported to EPA as being below the LAL. In light of the EPA Administrative Order and other details discussed below, the OIG investigation found that this information was known to DCWASA at the time the former deputy general manager testified in February 2004.

Furthermore, when asked about the lack of health warnings, the former deputy general manager testified that DCWASA had carried out a three-point program after exceeding the EPA LAL. He explained that DCWASA "did not have detailed health criteria on which to make individual

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<sup>9</sup> The vulnerable population was described as the particularly at-risk group; it included children under the age of 6, pregnant women, and nursing women.

decisions about lead concentrations and affected populations.” The former deputy general manager further testified that “there was an underlying health issue which underscored the entire lead monitoring program,” but said that he did not recall having any discussions about public health concerns.

Moreover, on February 10, 2004, despite testimony from the former deputy general manager that residents were told to take their samples by running their water until there was a noticeable change in temperature, initial instructions from DCWASA were for residents to use the 5-minute protocol, which was not the correct testing methodology. He testified that DCWASA customers ran 1½ to 2 gallons before seeing a noticeable change in temperature, which he acknowledged is not a very qualitative standard.

On February 10, 2004, the former board chair misled the D.C. Council when he testified that when the issue of elevated lead levels first arose in the fall of 2002, it did not trigger any undue alarm and that the results that triggered the EPA action level only became apparent in December 2003. In addition, the former board chair testified that it was not true that DCWASA had the results in September 2003. The OIG, however, obtained a DCWASA memorandum dated September 25, 2003, that indicates that over the past few months, approximately 7,000 addresses had test results that exceeded the LAL. The memorandum makes clear that the 7,000 figure was only an estimate because complete data were not yet available.

The OIG discovered additional misleading testimony by the former general manager and the former board chair. On February 4, 2004, the former general manager testified that he did not recall being informed by the former water quality control manager in mid to late 2002 of any health concerns. He testified on February 10, 2004, however, that to address the elevated levels of lead in the water, DCWASA increased the number of samples to be tested because it could not draw conclusions from a limited amount of data. Similarly, the former board chair testified on February 4, 2004, that in 2003, after water samples taken in 2002 showed higher lead levels, DCWASA decided to obtain thousands more samples than required by EPA regulations because DCWASA wanted to understand the scope of the potential problems. These statements by both the former general manager and former board chair were misleading because the requirement at issue was to obtain 1,615 samples (7% of the total of more than 23,000 residences) that fell below the EPA action level.<sup>10</sup> In the end, DCWASA tested 6,000 homes to obtain 1,615 samples that fell below the EPA action level. Further, DCWASA reported only the number of samples that tested below the LAL, but did not include, as required, how many tests they conducted in total.

Finally, the former board chair gave misleading testimony when he testified that DCWASA complied with EPA regulations regarding lead pipe replacement and replaced nearly 400 lead

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<sup>10</sup> DC WASA was required to test at least 7% of the more than 23,000 known lead service lines to come into compliance and return to reduced monitoring status under the EPA L&C Rule. Therefore, it was required to obtain 1,615 water samples that fell below the LAL.

pipes connecting homes to water mains. Rather, 306 of the replacements were partial line replacements, which required re-testing within 72 hours of replacement under EPA regulations. DCWASA, however, re-tested only 147 of those homes.

The testimony and conduct of DCWASA officials causes concern in that not only did DCWASA officials intentionally mislead EPA, the D.C. Council, and the public about the results obtained during its 2003 Lead Replacement Program, they minimized the scope of the District's elevated lead levels by failing to accurately attribute the number of samples obtained to the failure rate in lead compliance testing.

#### Testimony of DOH Officials at D.C. Council Hearings

DOH officials, including the former deputy chief medical officer, the former hazardous materials chief, the former interim chief medical officer, and the former interim senior deputy director, all testified before the D.C. Council regarding the lead in the water situation a number of times between February 2004 and September 2004. It is clear from the testimony of these officials over time, that DOH was taking steps to gather information, learn about the effects of lead in the water, coordinate with other agencies such as DCWASA and CDC, warn the public generally about the potential dangers, and deal individually with specific persons whose test results indicated high blood lead levels. Each time they testified, DOH officials provided general information about the health effects of ingesting lead, updated information regarding testing, and/or reiterated concerns and DOH's recommendations. The overriding message in their testimony, even when detailed facts and conclusions were not provided, was that members of the public, particularly those in the vulnerable population, should exercise an abundance of caution and not drink unfiltered tap water. The following is a sample of testimony by DOH officials.

In February 2004, several DOH officials testified at D.C. Council hearings regarding health issues concerning lead. The former deputy chief medical officer testified on February 10, 2004, that DOH had seen no recent increase in lead levels in the patient population in Ward 1 and they intended to do more follow-up for the other District wards. He also testified that DOH intended to target, in its screening, the homes that DCWASA identified as having elevated water lead levels. In the February 10, 2004, hearing, the former deputy chief medical officer explained that although there are real potential health risks regarding the effects of increased lead levels, there is some difference of opinion as to the degree of risk. He generally referenced previous testimony at which an unidentified official testified that lead in the water is less hazardous than lead dust and peeling lead paint, which small children eat. The former deputy chief medical officer then noted that children are at higher risk for lead poisoning than adults when drinking water with lead and because they might eat lead paint. He also testified that EPA estimates that drinking water makes up 10 to 20% of patients' total exposure to lead.

The former interim chief medical officer, who was new to the position when he began appearing before the D.C. Council, told OIG investigators that he was attempting to become educated on lead by reading materials suggested by CDC. The former interim chief medical officer testified on February 25, 2004, that out of an abundance of caution, DOH sent a letter to 23,000 addresses where officials thought there was a lead service line, recommending that the vulnerable

population should not drink tap water until the water either tested safe or was filtered. At that time, the former interim chief medical officer also testified that DOH had taken steps to inform the public, test people whose homes had tested with high levels of lead in the water, and increase its capacity for testing. He also noted that DOH personnel were meeting with CDC experts. The former hazardous materials chief testified at that time that a comparison of addresses of children known to have blood lead levels above 10 mg/dl between 1998 and 2003 with addresses of homes that have lead service lines identified only five residences. The former interim chief medical officer and the former hazardous materials chief both testified that testing would continue and recommendations would be modified, if appropriate, based on the information received.

In a similar vein, on February 4, 2004, the former hazardous materials chief, who described herself as being versed in lead paint and dust, stated that she would research issues related to lead in the water. In testimony on February 10, 2004, the former hazardous materials chief cited an Arizona study that made a correlation between a water lead level and a blood lead level, but noted that they found peeling paint in that environment. She mentioned two other similar examples that also had other contaminants in the environment. The former hazardous materials chief then went on to explain that she took the information DOH received from DCWASA and mapped addresses with information on children with blood lead levels based on information from CDC. The data included information from 2002 and incomplete information from 2003. The former hazardous materials chief testified that this comparison revealed 1 child out of 1,322 with an elevated blood lead level resided at a home with an elevated water lead level.

In response to a question at a March 17, 2004, D.C. Council hearing regarding when he first learned of the increased lead levels in District drinking water, the DOH senior deputy director said:

We, at DOH, have always known there has been a problem with increased levels of lead. In June 2002, based on citizen concern, my staff submitted a request to EPA requesting that WASA be placed on the priorities list in terms of funding to expedite the removal of lead pipes. EPA responded by saying “no.” [the former general manager] WASA, and I had discussed the strategy was to put out a brochure and continue to run water to reduce exposure to lead. To my knowledge, we never had any knowledge that chloramine was in any way accelerating the leaching of lead. DOH has no jurisdiction over WASA or the Safe Drinking Water Act. We rely on the data we are given by WASA and EPA.

On March 17, 2004, the former interim chief medical officer testified that of the 102 people who live in homes with the highest water lead concentrations, 83 were tested and none had elevated blood lead levels. The former interim chief medical officer added, however, that DOH had started an intensive phone call program to reach out to people known to have lead pipes to educate them and offer blood lead testing services. Then on April 1, 2004, the former interim chief medical officer testified that DOH was still gathering information from various sources.

He noted, however, that because the water lead levels exceeded the action level, he thought that the advisory for the vulnerable population should remain in place. The former interim chief medical officer also discussed recommendations that were made based on a model, derived from information obtained from EPA, and his concern about the veracity of the conclusion that there was no health risk. The former interim chief medical officer also provided some specific statistics which he identified as being based on information from CDC. He discussed blood tests on 201 persons from 163 homes, 17 of which were under 6 years old. He testified that none of the 201 persons had elevated blood lead levels. The former interim chief medical officer also testified that 76% of the 201 people tested reported drinking tap water. He neglected to mention, however, that 53% of the households that reported drinking tap water also reported using a water filter. This fact, however, was reported in CDC's April 2, 2004, Morbidity and Mortality Weekly Review (*MMWR*), which was released on March 30, 2004, and which lists the former interim chief medical officer as a reporter.

Although the former hazardous materials chief also testified on several occasions that none of the 201 persons in the study had elevated blood lead levels, and was the lead author of an article published in the April 2, 2004, edition of the CDC *MMWR*,<sup>11</sup> which stated that no children were identified with elevated blood lead levels because of elevated water lead levels in their homes, there is evidence that the former hazardous materials chief subsequently said that one child had been disqualified from the study because he/she had lived in the residence only a short time.<sup>12</sup> The former interim chief medical officer, who only had been with DOH a short time, clearly stated that he was learning about lead, and identified the source of his information as CDC. Therefore, there is no evidence that he knew that one person had been disqualified from the study. Similarly, there is no evidence that this disqualification was inappropriate or that DOH would have taken a different course of action if that one person had not been disqualified. The former hazardous materials chief, however, was the DOH lead expert and clearly knew that someone had been disqualified from the study. Although the former hazardous materials chief's statement does not appear to constitute a deliberate misrepresentation, the OIG feels that she should have mentioned in her testimony in early 2004 that someone had been disqualified from the study. She also should have explained it fully and emphasized it further in later testimony and in the *MMWR*.

The former interim senior deputy director testified before the D.C. Council on May 26, 2004, regarding the impact, if any, that the District's lead in the water had on the health of District children. The former interim senior deputy director testified at that time that approximately 5,000 people had been screened in connection with tests at schools and the 2 or 3 that required treatment were found to have needed treatment because of lead in the paint, not lead in the water.

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<sup>11</sup> *Blood Lead Levels in Residents of Homes with Elevated Lead in Tap Water -- District of Columbia, 2004*, 53(12) *MMWR*, 268-270 (2004).

<sup>12</sup> According to a Report by the Majority Staff of the Subcommittee on Investigations and Oversight of the Committee on Science and Technology, U.S. House of Representatives, entitled "A Public Health Tragedy: How Flawed CDC Data and Faulty Assumptions Endangered Children's Health in the Nation's Capital," dated May 20, 2010, the former hazardous materials chief mentioned this in a WAMU 88.5 American University Radio Metro Connection program entitled "Lead Crisis in DC" broadcast on February 27, 2004. The former hazardous materials chief also discussed this with OIG and U.S. House of Representatives investigators in an interview in September 2009. The former hazardous materials chief explained that she "deleted" one child with an elevated blood lead level from a subsequent *MMWR* report because the child only had been at the address for a short period of time and a lack of funding prevented conducting further research into the child's previous environment.

He also testified that of all of the children tested with high lead, all except one were found to have lead paint in their homes, dust, and soil. The former interim senior deputy director then testified that out of 2,000 in a total target population, 1,856 were children, 95 were pregnant women, and 75 were nursing women. Of the 1,856 children, 42 were children under the age of 6 with elevated blood lead levels. He noted that this represented approximately 2 percent and added that 15 had lead service lines.

In subsequent testimony on June 17, 2004, the former interim senior deputy director provided updated information regarding the testing DOH had been conducting. For example, the former interim senior deputy director testified that of the total target population of children less than 6 years of age, 44 out of 2,061 tested with elevated blood lead levels. Of those, 15 lived in homes with lead service lines and 29 did not. All of those children, though, had lead in the dust and paint in their homes. The former hazardous materials chief testified at the same hearing about one child who did not have dust levels that exceeded U.S. Department of Housing and Urban Development (HUD) or EPA guidelines. She testified that the source of the lead was found to be a folk remedy with lead in it. The former interim senior deputy director testified later in the same hearing that, based on the results of the testing, DOH concluded that the elevated blood lead levels were not directly related to lead in the water. In response to a question about his opinion of the testing as a health expert, the former interim senior deputy director testified that although the percentage of lead in the water varies, it would not have significantly contributed to illness in individuals. He noted, however, that there should be no lead. He concluded by saying that he was comfortable that the lead problem was not related to lead in the water, but more significantly related to lead paints, soils, and dust samples.

The former hazardous materials chief again testified before the D.C. Council on September 22, 2004. In that testimony, the former hazardous materials chief discussed blood lead level testing at 32 District public schools with elevated lead levels in water fountains and/or sinks. She said that this testing revealed that five individuals had elevated blood lead levels. The former hazardous materials chief also testified that in the period February 3, 2004, to July 20, 2004, 64 children under the age of 6 had elevated blood lead levels. One of those children lived in Maryland but attended daycare in the District. Nineteen lived in homes that had lead service lines. All of the children except one had lead dust and soil levels that exceeded EPA and HUD guidelines.

A review of testimony of these DOH officials at the hearings identified above and others reveals that DOH continually was testing children and others for elevated levels of lead in their blood. DOH was trying to cross reference those results with elevated levels of lead in the water and analyze all of the results to fine tune its recommendations to specific individuals and the public in general. It is important to note that based on the testimony at these hearings, as well as the testimony of Author 2 before Congress, there did not appear to be conclusive data correlating elevated levels of lead in the water with elevated levels of lead in the blood. In her prepared statement before the U.S. Senate Committee on Environment and Public Works on April 7, 2004, Author 2 testified as follows:

In terms of lead in water as a source of childhood lead poisoning, discussions of oral lead ingestion do not separate dust sources or paint chips from lead in the water supply, making it extremely difficult to discriminate between lead poisoning from household paint and lead poisoning from lead-contaminated water supplies. It is highly likely that lead-contaminated water can contribute to lead poisoning of children. However, no studies of lead in water as the sole source of environmental lead were found.

Author 2 went on to explain, in the same prepared statement that because “lead pipes are found in the same older homes in which lead paint is found,” it is “extremely difficult to separate the contribution of each source.” A number of the DOH officials, including the former hazardous materials chief, the former interim senior deputy director, and the former deputy chief medical officer who testified at D.C. Council hearings, made statements indicating similar concerns.

Therefore, this investigation cannot conclude that any of the DOH officials made intentionally or negligently misleading statements regarding the dangers of elevated water lead levels. The testimonies of DOH officials are replete with qualifying phrases indicating that the testifying official is offering an opinion, relying on previous testimony or other studies, and discussing data that were still coming in and being analyzed. In addition, many of those who testified were not lead experts and the one who was, the former hazardous materials chief, was an environmental lead expert not a water lead expert. Finally, despite the lack of evidence of a direct correlation between elevated water lead levels and elevated blood lead levels, the fact that new data were becoming available and being analyzed on a regular basis, the lack of a public health crisis determination by CDC, and the qualifying statements by the DOH officials themselves, it appears that DOH officials took steps to notify specific individuals and members of the public of the dangers of lead and the need to follow DOH’s recommendations that members of the vulnerable population not drink unfiltered District tap water.

### **DCWASA’s Response to Elevated Levels of Lead in the Water**

By 2002, DCWASA identified 23,071 addresses with lead service lines that should be replaced. According to the L&C Rule, once the LAL was exceeded, DCWASA was required to begin annually replacing lead service lines for (at least) 7% of the 23,071 (or 1,615) addresses. The L&C Rule also required DCWASA to continue testing 100 samples every 6 months, even while the lead replacement program was conducted. The only way DCWASA could suspend its lead replacement program was to show two consecutive monitoring periods where it did not exceed the LAL.

Two civil engineers from the joint venture explained that DCWASA’s alternative to physically replacing lead service lines, under the L&C Rule, was to conduct a sampling of known lead service lines to show that the water sample lacked actionable lead levels. Civil engineer 1 explained that if DCWASA showed test results below the LAL, those lines could be considered

replaced and counted toward the 7% replacement requirement. DCWASA decided on this option in addition to the physical replacements, and civil engineer 1 helped develop the Lead Replacement Program to conduct the sampling.

### Water Testing

The OIG investigation revealed several emails among DCWASA personnel and a memorandum from the joint venture to DCWASA personnel suggesting that DCWASA considered selecting its sample volunteers to try to ensure that the results would fall below the EPA LAL. In a December 10, 2002, email to the DCWASA former supervisor and the planning and design branch manager, the former water quality control manager wrote that she is evaluating the testing volunteers and her best strategy in developing the plan is to:

eliminate from the plan all the high lead sites obtained so far from historical monitoring. Most sites above action level were in the Year 2001-2002 monitoring period. The justification to EPA for elimination of these sites would be that the lead service lines at these sites are replaced. This does not automatically mean that the new sites will be below action level because the criteria is such as to select sites having maximum probability of lead in water.

The planning and design branch manager sent that email to the former Department of Water Services service program manager, civil engineer 1, and others, also on December 10, 2002, and asked for their thoughts on the former water quality control manager's strategy.

The planning and design branch manager also sent a December 10, 2002, email to the former supervisor and the former water quality control manager suggesting that "Engineering and EPMC IIA" look at the former water quality control manager's plan to "see to improve our chances of having the sampling results fall below the action level." In a December 18, 2002, email to the former supervisor, the former Department of Water Services program manager, the planning and design branch manager, and a DCWASA contracting engineer, the former water quality control manager wrote that the environmental specialist "informed me that excluding volunteers with historical high lead levels from the sampling plan because their LSL [lead service lines] are scheduled to be replaced is not justified." Finally, in a memorandum dated January 10, 2003, from a joint venture employee to the planning and design branch manager and the former Department of Water Services program manager, the joint venture suggested that "there could be an advantage to collecting more than 100 required samples and using a pool of 150 sites and then calculate the 90 percentile on the higher number of sites. This should be discussed with WASA."

With respect to the water sampling methodology,<sup>13</sup> civil engineer 1 said that at the beginning of this project, DCWASA advised the joint venture that it had been sampling water on a semi-annual basis during their standard water monitoring, using the 5-minute protocol testing method. The 5-minute protocol required the tester to turn on the water at a faucet for 5 minutes and then collect the water at the 5-minute mark. DCWASA advised the joint venture that the 5-minute protocol was an EPA-approved testing methodology. The joint venture engineers reviewed EPA regulations for the approved testing methodologies for lead compliance testing, and attempted to approximate the volumetric method, an approved methodology, to the 5-minute protocol but were unable to do so. Civil engineer 2 said that the 5-minute protocol did not account for plumbing and/or structural differences in homes and was not the industry's best standard. Also, civil engineer 2 said that homes closer to the street would have a shorter lead service line, so allowing the water to run for 5 minutes could result in collecting water from the water main, not the lead service line. Civil engineer 2 opined that this methodology potentially could result in lower lead level measurements. The joint venture doubted the accuracy of the 5-minute protocol in testing water located in the lead service line, and subsequently asked DCWASA for documentation of EPA's approval of the 5-minute protocol for lead compliance testing. The joint venture never received the documentation; nonetheless, DCWASA began lead compliance testing using the 5-minute protocol in March 2003.

By the summer of 2003, DCWASA changed its lead testing methodology to the temperature change method. Civil engineer 2 stated that DCWASA switched to the temperature change method because the joint venture objected to the 5-minute protocol and DCWASA never provided documentation of EPA's approval of that testing methodology. Civil engineer 1 remembered that several months into the testing, the former Department of Water Services program manager informed the joint venture that EPA no longer approved the 5-minute protocol. The EPA environmental specialist stated that when DCWASA asked him during the summer of 2003 about approved testing methodologies for lead compliance testing, he referred them to the EPA regulations.

The temperature change method resulted in an increase in the number of residences with elevated lead level test results. DCWASA internal emails reflect that once the temperature change methodology was implemented, the number of homes that showed actionable lead levels rose from approximately 20% using the 5-minute protocol, to 75% using the temperature change method. Consequently, DCWASA and the joint venture had to determine whether they could start over with the new methodology and complete the required number of tests by the September 30, 2003, deadline. Internal emails show that DCWASA officials employed different strategies to ensure that they reached their goal by the deadline, including suspending lead compliance testing in geographic areas of the District that were known to have high water lead levels.

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<sup>13</sup> The former laboratory chief explained that although the collection of First Draw Samples was required under the L&C Rule, Second Draw Samples were not a regulatory requirement. The former laboratory chief further explained that residents were directed to obtain First Draw Samples and Flushed Samples pursuant to the 5-minute protocol. By "Flushed Samples," the former laboratory chief was referring to a Second Draw Sample that residents took after allowing the water to run for 5 minutes. The former laboratory chief also said that she recollected that sometime during the sampling, the methodology changed from the 5-minute protocol to the temperature change method.

DCWASA failed to tell EPA that it initiated testing using the 5-minute protocol so that it could use the test results, if needed, to reach the 1,615 goal. A review of the 2003 DCWASA Lead and Copper Compliance Report, internal DCWASA emails, and interviews of joint venture engineers, revealed that DCWASA officials intentionally misled EPA when it submitted its report by including test results obtained using the 5-minute protocol and presenting all test results as having been obtained using an EPA-approved methodology. Internal DCWASA documents also reflect that DCWASA tested over 6,000 homes to obtain a sufficient number of passed results. In addition, DCWASA failed to provide EPA with the total number of homes that were tested to obtain the reported number of passed results.

In June 2004, the Washington Aqueduct switched back to chlorine as the primary method of disinfection and added oxyphosphoric acid as an anticorrosive additive. The water still tested above the lead action levels in the following two monitoring periods, but subsequently returned to acceptable levels.

#### EPA Administrative Order

On June 17, 2004, EPA issued an Administrative Order for Compliance on Consent.<sup>14</sup> The Administrative Order, in pertinent part, states that DCWASA failed to:

comply with the lead service line replacement sampling requirements of 40 C.F.R. § 141.84(d)(1), because it had not conducted follow-up sampling within 72 hours after the completion of partial replacement of lead service lines;<sup>15</sup>

comply with requirements for public service announcements set forth in 40 C.F.R. § 141.85(b); and

use the language required pursuant by 40 C.F.R. § 141.85(c)(2)(i) in its written materials provided to customers with their water utility bills.

In a Supplemental Administrative Order for Compliance on Consent issued in 2005,<sup>16</sup> EPA found that DCWASA used the “five-minute methodology,” which was not among the testing methodologies described at 40 C.F.R. § 141.86(b)(3). In addition, EPA found that of the samples taken using the temperature change methodology, the pass rate was only 27.5%. Therefore, EPA found that DCWASA did not comply with 40 C.F.R. §§ 141.84(b), (c), & (g) and 141.90(e) for the compliance period ending September 30, 2003.

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<sup>14</sup> *In the Matter of District of Columbia Water and Sewer Authority*, Docket No. SDWA-03-2004-0259DS.

<sup>15</sup> An undated (and apparent draft) DCWASA document entitled “Sampling Required for Partial Lead Service Replacements Instructions for DC WASA Inspectors” states that for each partial lead service replacement, sampling is required within 72 hours after the completion of the replacement.

<sup>16</sup> *In the Matter of District of Columbia Water and Sewer Authority*, Docket No. SDWA-03-2005-0025DS.

Finally, in a Consent Agreement and Final Order dated May 14, 2007,<sup>17</sup> EPA found that DCWASA violated the June 17, 2004, Administrative Order, which required DCWASA to correct violations of the L&C Rule.

### **Several DCWASA Employees Refused to be Interviewed by the OIG**

Within 6 months of this investigation, several DCWASA employees challenged the OIG's legal authority requiring them to be interviewed by OIG investigators. Contrary to the OIG's statutory authority, attorneys on behalf of these employees and DCWASA took the erroneous position that DCWASA employees are not District employees, and, therefore, that they could not be compelled to answer questions posed by the OIG.

In July 2009, the OIG sought to interview, among others, DCWASA's deputy general manager, the planning supervisor, and the planning and design branch manager, for this investigation. Through their attorneys, the three employees took the position that they were not District employees, and, therefore, that they could not be compelled to answer questions posed by the OIG. To move the investigation forward, the OIG contacted DCWASA's then General Counsel to help resolve the matter. The OIG informed DCWASA's General Counsel that the D.C. Council provided the OIG with a statutory mandate to independently conduct investigations relating to the programs and operations of District government departments and agencies, including independent agencies; statutorily the OIG has access to the books and records belonging to or in use by District agencies, including independent agencies; and that government employees are required to cooperate with the OIG. Nonetheless, DCWASA's General Counsel took the same erroneous position that DCWASA employees cannot be compelled to answer OIG questions because they are not District employees. The OIG also subpoenaed the employees to compel their testimony. Upon the advice of counsel, DCWASA employees refused to be interviewed claiming that they are not District employees, even after receiving the appropriate "warnings" by OIG investigators. In addition, none asserted a Fifth Amendment privilege as a reason for refusing to answer questions.

Because the OIG and DCWASA were unable to informally resolve the issue, in October 2009, the OIG sought a legal opinion from the Office of the Attorney General for the District of Columbia (OAG) as to whether DCWASA employees are employees of the District government and subject to relevant provisions of the OIG's enabling statute. The OAG responded in November 2009, writing, in part, that "WASA employees are employees of the Executive Branch of the District government for certain purposes, including for purposes of complying with section 208 of the OIG Statute and any request by the Inspector General for interviews of WASA employees and access to documents belonging to or in use by WASA."

Despite the OAG's opinion, the OIG received no meaningful assistance from DCWASA or its employees regarding interviewing DCWASA employees in connection with this investigation. While the OIG received a favorable opinion from the OAG, the OIG chose not to seek a court order to compel testimony because it appeared that the DCWASA employees were relying

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<sup>17</sup> *In the Matter of District of Columbia Water and Sewer Authority*, Docket No. SDWA-03-2006-0186.

on the advice, though erroneous, of DCWASA and their own private attorneys. Additionally, the OIG concluded that the issues pertinent to this investigation could be addressed even without the benefit of these interviews.<sup>18</sup>

### **DOH's Processing of Blood Test Results**

The OIG investigation revealed that DOH submitted incomplete blood test results to CDC because of problems with manually inputting data in the CDC database system, Stellar. As a result, District blood test results given to the CDC may not have been accurate.

Until 2007, CLPPP was part of DOH with a mission to eliminate childhood lead poisoning within the District. Funded by CDC, CLPPP employed investigators who provided free blood lead level testing to District children under the age of 6. In addition, District parents could have their children's blood lead levels independently tested. The CDC liaison explained that laboratories sent DOH the results of their blood lead level testing in three forms: hard copy, computer disks, and emails. DOH then manually entered the data into the Stellar database system, which was used around the United States by cities to input and report their blood lead levels to CDC. CLPPP evaluated the data internally to determine the number of District children tested, by ward, and the number of children within each ward with elevated blood lead levels, and reported these results to CDC on a quarterly and annual basis. The CDC, in turn, reported the data to the public through its *MMWR*.

The CDC liaison said that when lead in the water became an issue in 2003 to 2005, he met personally and on a regular basis with the CLPPP project manager, who had been designated by the former hazardous materials chief as the person responsible for overseeing the inputting of blood lead level laboratory results into Stellar, and made approximately 30 site visits to DOH in that time period. He noted several areas of DOH deficiency, including the percentage of testing and screening and poor case management regarding follow-up testing. DOH provided CDC with quarterly reports comprised of the results of blood lead level testing. The CDC liaison stated that he observed some anomalies in the number of blood lead level tests DOH reported to CDC for 2003, especially when compared with the number of tests performed in previous years.<sup>19</sup>

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<sup>18</sup> With regard to obtaining pertinent records from DCWASA, in September 2009, the OIG issued a subpoena to DCWASA for records, largely from 2000 to 2004, relating to lead in the water, including records regarding the use of chloramine, sampling methodology, notices to the public, and communications between DCWASA and DOH. In addition, the subpoena demanded copies of reports DCWASA submitted to EPA and all supporting documentation, as well as reports the joint venture submitted to DCWASA and all supporting documentation. DCWASA hired private counsel to supervise DCWASA's compliance with the OIG subpoena. Although DCWASA, through its private counsel, provided records over the next several months, the records were provided in an unsatisfactory manner. Specifically, DCWASA provided approximately 187,000 records, in electronic format, in which each page of a document or record was in a separate electronic file, not necessarily consecutive to other pages within the same document or record. In addition, emails with attachments were not provided as a single record and were not necessarily in consecutive order. In the format provided, the records were not easily searchable or viewable and had little, if any, evidentiary integrity. Over the next several months, OIG efforts to obtain records responsive to the OIG subpoena in the format they were maintained in the normal and usual course of business, as required by statute, were unsuccessful.

<sup>19</sup> In *Public Health Tragedy: How Flawed CDC Data and Faulty Assumptions Endangered Children's Health in the Nation's Capital*, dated May 20, 2010, the U.S. House of Representatives Subcommittee on Investigations and Oversight of the Committee of Science and Technology reported that the CDC liaison also expressed concerns about the low number of blood lead level tests reported by DOH to CDC for 2003.

The former hazardous materials chief advised that she considered monitoring and reporting District blood lead levels to CDC her foremost priority and acknowledged that DOH was using an antiquated paper counting system and maintained the data in a haphazard manner, with stacks of lab reports piled in a large room. She said that when she assumed responsibility for blood lead level reports to CDC, she was concerned that the percentage of children with elevated blood lead levels was low, suggesting that there was underreporting, and initiated measures to ensure that DOH was reporting accurate blood lead levels to CDC. The former hazardous materials chief told OIG investigators that the former CLPPP program manager never informed her that there were problems inputting data into Stellar or that there was a chronic lag in reports to CDC. As a result, she assumed that there were no reporting problems, even though she was aware that data input personnel had been laid off, because CDC continued to provide DOH with grant money for District lead programs.

As the OIG investigation found, there were problems with the Stellar system. One CLPPP computer specialist, who was responsible for the technical support and maintenance of Stellar, told OIG investigators that the former CLPPP program manager and the former hazardous materials chief gave him verbal instructions to prepare monthly performance reports (called Performance Measures Reports “PMR”) of blood lead level test results entered into Stellar. Each PMR consisted of an internal log and a running monthly tally. The CLPPP computer specialist provided OIG investigators with a PMR dated September 30, 2003, which notes that the year-to-date figure included 5,324 blood results that had not been entered into Stellar yet. This figure suggests not only that there was a significant data entry backlog, but also that CLPPP personnel were tracking the backlog. The former CLPPP program manager described the PMR as a “snapshot,” but told OIG investigators that she was unaware of any chronic backlog in reporting blood lead level test results to CDC, other than when Stellar crashed.

The CDC lead poisoning prevention branch chief (branch chief) advised that in February 2004, the CDC liaison discovered a discrepancy in the number of children tested, as indicated in the quarterly reports supplied by DOH. The quarterly reports showed a higher number of children tested than indicated by individual electronic records. The CDC liaison conducted an on-site visit at DOH in February 2004 and spoke to DOH officials including the CLPPP computer specialist, the former CLPPP program manager, and the former DOH senior deputy director.<sup>20</sup> The CDC liaison said that when he asked the CLPPP computer specialist about the number of blood lead level tests conducted, the CLPPP computer specialist said that in February 2004, the former CLPPP program manager instructed him to change the numbers on the fourth quarterly report of raw data. The CDC liaison said that he orally reported this to the branch chief. The branch chief confirmed that she was advised by the CDC liaison that there were problems with the numbers reported by DOH and that the CLPPP computer specialist had alleged that the CLPPP program manager had instructed him to falsify numbers. The branch chief said that the CDC liaison then visited DOH and questioned the former CLPPP program manager, who denied having done so.

The CLPPP computer specialist denied to OIG investigators presenting any misrepresented, manufactured, or otherwise inaccurate data to CDC in 2003, or at any other time. Similarly, the

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<sup>20</sup> The DOH senior deputy director passed away on July 1, 2006, prior to the initiation of this investigation.

former CLPPP program manager stated that she never instructed anyone to change blood lead testing figures on any quarterly report submitted to CDC. According to the branch chief, the former DOH senior deputy director told the CDC liaison that he would look into the matter. The CDC branch chief said that subsequent quarterly reports were on track and there were no further problems. The former interim chief medical officer told OIG investigators that he was not aware of any data reliability or backlog issues within DOH CLPPP, although he recalled having been told that the Stellar database was antiquated.

OIG investigators received information that CLPPP staff members were instructed to throw away unentered blood test results, but all of the CLPPP staff interviewed by OIG investigators denied any knowledge of document destruction or being instructed to dispose of DOH documents. Therefore, the OIG found no evidence to substantiate that allegation.

Based upon the interviews conducted and documents reviewed, it appears that DOH had problems entering blood test results into Stellar. Consequently, the numbers of blood test results DOH provided to CDC could not have been complete or accurate. Stellar eventually was replaced, in 2005, with a new system, LeadTrax, which did not require manual entry and which eliminated the backlog problem. One CLPPP computer specialist told OIG investigators that because of LeadTrax, CLPPP was up-to-date in its data entry of blood lead level test results. The OIG, however, obtained no evidence to suggest that that DOH subsequently resubmitted corrected (and presumably accurate) numbers to CDC for previous reporting periods.

In a public statement issued March 13, 2009, in response to media requests, the CDC branch chief said that there was sufficient concern regarding potential health effects for persons whose water came from lead service pipes for CDC to transmit the information in its March 30, 2004, *MMWR Dispatch*, a posting on the CDC website. The branch chief explained in the public statement that the “CDC has a low threshold for taking public health action” and often, as in this instance, “will move rapidly to implement public health action without waiting for further or more detailed studies, because an early signal may be a strong enough indicator of the need for protective response.” The branch chief also said that the “data available for the rapid assessment did not, at that time, indicate a crisis situation existed.”

On May 21, 2010, CDC publicly released an article in its *MMWR* entitled, “Examining the Effect of Previously Missing Blood Lead Level Surveillance Data on Results Reported in *MMWR*.”<sup>21</sup> The May 21, 2010, *MMWR* article states that in 2009, CDC obtained blood lead test results “collected in 2003 that were unavailable for analysis” when the 2004 *MMWR* was published and conducted a reanalysis. The May 21, 2010, *MMWR* reported that the “reanalysis showed that the addition of the missing test data led to a decrease in the percentage of tests with elevated blood lead levels . . . in 2003, regardless of the type of service line supplying water to the home.” The May 21, 2010, *MMWR* also refers to a sentence in the 2004 *MMWR*, which stated that “no children were identified with blood lead  $\geq 10$   $\mu\text{g}/\text{dL}$ , even in homes with the highest water lead levels.” The May 21, 2010, *MMWR* states:

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<sup>21</sup> *Examining the Effect of Previously Missing Blood Lead Surveillance Data on Results Reported in MMWR* (59(19) *MMWR* 592 (2010)).

This sentence was misleading because it referred only to data from the cross-sectional study and did not reflect findings of concern from the separate longitudinal study that showed that children living in homes serviced by a lead water pipe were more than twice as likely as other DC children to have had a blood lead level  $\geq 10 \mu\text{g/dL}$ . CDC reiterates here a key message from the 2004 report: ‘because no threshold for adverse health effects in young children has been demonstrated,’ no safe blood level has been identified, and all sources of lead exposure for children should be controlled or eliminated. ‘Lead concentrations in drinking water should be below the U.S. Environmental Protection Agency’s action level of 15 ppb.’

Despite the variety of problems noted above regarding the lack of appropriate expertise of the high level DOH officials charged with handling the lead in the water crisis, as well as the practical issues surrounding the receipt and inputting of blood test results, there is no evidence that these issues caused DOH to make inappropriate recommendations to specific individuals or the public regarding precautions to take to avoid ingesting lead. In fact, throughout 2004, DOH officials repeatedly urged caution and stressed that the vulnerable population should avoid drinking unfiltered District tap water until it had been tested and shown not to contain lead. Even the May 21, 2010, *MMWR* concluded that the missing test results did not cause an underestimation of the correlation between elevated blood lead levels and lead service lines and did not change the previous findings.

#### DOH Response to Elevated Levels of Lead in the Water

The OIG investigation found that even though the DOH officials leading the response to the lead in the water were not experts in the field, DOH adequately responded to the crisis.

The former hazardous materials chief said that she first became aware of high lead levels in the District’s tap water during the 2002-2003 time period which she described as an “emergency situation.” In early February 2004, a month after a newspaper article appeared warning of high lead levels in the District’s tap water and CDC mandated an incident task force, which included the former interim chief medical officer and a representative from DCWASA. The former hazardous materials chief acknowledged that she was an environmental lead expert, not a water lead expert, but she remembered that in February 2004, she conducted research to become knowledgeable with lead in the water. The task force met daily to discuss new findings of elevated blood lead levels. DCWASA provided DOH with a list of 98 homes, containing 201 residents, with elevated water lead levels. The former hazardous materials chief then sent uniformed Public Health Service employees to the 98 residences to take blood samples for testing, but she was uncertain as to how many people actually were tested.

The former interim chief medical officer told OIG investigators that the lead in the water issue was a top priority because newspaper articles related to lead in the District’s drinking water came out shortly before he started at DOH. He attended an interagency task force that included the then City Administrator, a councilmember, and the former DCWASA general manager. At one

point, the task force developed a plan to address the lead in the water issue, which included notifying the public by letter and measuring blood lead levels to determine the potential impact of elevated water lead levels. Although the former interim chief medical officer, who had no experience with lead in the water or the health effects of elevated blood lead levels, became DOH's "face of the lead issue," the former hazardous materials chief really was DOH's in-house lead expert. The former interim chief medical officer also said that he contacted CDC for suggestions as to reading material on the subject and the assistance of a lead expert. Several people from CDC agreed to assist the District with developing strategies to abate the District's lead problem. The former interim chief medical officer told OIG investigators that there was very little information available regarding elevated water lead levels and its impact on blood lead levels.

The former interim chief medical officer explained that he signed a letter DOH sent to approximately 23,000 District addresses, advising residents of potential problems with their lead service lines, and requested assistance from the U.S. Surgeon General Public Health Service Corps to contact residents of homes identified with elevated blood lead levels for blood testing. He said that on March 1, 2004, the former hazardous materials chief hired contractors to conduct environmental assessments at homes previously identified as having elevated water lead levels and which also had children with elevated blood lead levels. The environmental assessments involved testing dust, paint, and soil because in every home that had elevated water and blood lead levels, there was also an environmental source of lead such as dust, paint, or soil. According to the former interim chief medical officer, DOH was unable to determine whether the elevated blood lead levels were attributable solely to elevated water lead levels.

The former interim chief medical officer stated that the April 2, 2004, *MMWR* related to the lead study contained accurate information. He noted that the *MMWR* states that the report is a summary of preliminary investigation results indicating that "elevated water lead levels might have contributed to a small increase in blood lead levels" (April 2, 2004, *MMWR*, p. 2). The former interim chief medical officer added, however, that the number of children under 6 years old who participated in the study was too small to be statistically significant and not a true representative sampling of the population. The former interim chief medical officer also said that in April 2004, he contacted CDC and requested that an Epidemiological Team report to DOH. The CDC sent a three-member team to evaluate DOH's response to the lead issues and verbally advised DOH that it was doing everything possible to address the lead issue.

### **ANAYLSIS AND CONCLUSIONS**

This report marks one of several investigations and audits the OIG conducted to examine the complicated subject matter of lead in the District's water during the 2001–2004 time period. The OIG first looked at the lead in the water issue 7 years ago. On January 5, 2005, the OIG issued an audit entitled *Audit of Elevated Levels of Lead in the District's Drinking Water (OIG No. 04-2-17LA)*. This report stemmed from newspaper reports in early 2004 that District water had exceeded the EPA LAL, details DCWASA's lead service replacement line efforts, its communication and public education efforts, and its coordination with DOH. The audit report

made 12 specific recommendations to DCWASA, including that the agency take significant steps regarding water sampling and monitoring, establish controls to ensure that EPA public notification requirements are met, and improve coordination with DOH.

Later that same year, in June 2005, the OIG issued another audit report entitled *Audit Performed to Detect the Presence of Lead in the District of Columbia Residential Drinking Water (OIG No. 04-2-16LA)*. For that report, the OIG hired a CPA firm “to perform an independent statistical analysis to detect the presence of lead in drinking water at District residences and compare the results to previous WASA tests.” This analysis was in response to a February 2004 request from a former councilmember that the OIG conduct an independent analysis of the levels of lead in the District’s water. Water sample kits were provided to residents and the results were analyzed by a laboratory certified to be in compliance with EPA testing guidelines. Once analyzed, the results were compared to the results of previous DCWASA tests. Of the 272 samples returned and tested, 103 residences had lower levels of lead in their water than reported in previous DCWASA results. Eleven residences had higher levels of lead in their water than reported in previous DCWASA results. Ward 5, where 7 out of 41 residences had amounts of lead in the water that exceeded the LAL, had the greatest number of residences with lead in the water.

For this current report, the D.C. Council requested that the OIG investigate two additional lead-in-the-water-related matters. First, we were asked to determine whether there is a correlation between lead levels in District tap water and lead-poisoned children. This investigation found that the experts do not agree. Lead experts and health officials cannot determine with certainty whether a correlation exists between elevated lead levels in District tap water and lead-poisoned children. One expert stated that blood lead levels were as strong as science could get, and concluded that there was a direct relationship between elevated water lead levels and elevated blood lead levels. Another expert stated there are multiple causes for lead in the blood and that lead in the water was only one factor. That expert cited a strong association between children living in homes where other environmental sources exist that may contribute to elevated blood lead levels such as lead paint. Based upon the differences of expert opinions, the answer to this issue is inconclusive.

Second, we were asked to determine whether D.C. authorities intentionally or negligently misled the public [in testimony before the 2004 D.C. Council hearings]. With respect to DCWASA, the OIG found evidence that three DCWASA officials were less than forthcoming in their testimony before the D.C. Council and may not have acted in the District’s best interest. The OIG determined that DCWASA officials presented erroneous information regarding the number of tests conducted, the testing methodology used, and DCWASA’s compliance with EPA regulations. The OIG also determined that DCWASA officials were aware of elevated water lead levels during the July 2001 – September 2003 timeframe, and took steps to notify EPA, as well as remediate the problem. However, as part of its remediation effort, DCWASA sought to minimize the problem by sampling water from residences that were unlikely to have elevated lead levels, avoiding additional testing in areas of the District known to have elevated water lead test results, and failing to use the correct testing methodology for all of the required water samplings. Further, EPA ultimately determined that DCWASA failed to comply with all EPA remediation requirements.

With respect to DOH, the OIG concludes that DOH officials did not intentionally or negligently mislead the public. DOH officials' testimony before the D.C. Council is replete with qualifying phrases indicating that the testifying official is offering an opinion, relying on previous testimony or other studies, and discussing data that were still coming in and being analyzed. Despite not having a water lead expert, when DOH officials became aware of elevated water lead levels during the 2001-2003 timeframe, they responded appropriately to address the potential health issue. DOH officials participated in a CDC-mandated incident task force, conducted blood testing at homes with known elevated water lead levels, notified the public of potential problems with their lead service lines, requested assistance from the U.S. Surgeon General Public Health Service Corps to contact residents, conducted environmental assessments at homes previously identified as having elevated water lead levels and children with elevated blood lead levels, and continually analyzed data as it became available. Though the OIG found nothing misleading about DOH officials' testimony, the investigation revealed that there likely was a backlog within DOH as to the entry of blood lead level test results into Stellar, its database system, which had to affect the accuracy of the numbers of blood test results provided to CDC. DOH eventually replaced Stellar with a new system, LeadTrax, which did not require manual data entry and eliminated DOH's backlog problem.

As described above, issues related to lead in the water are extremely complex and difficult to resolve. It is, however, of paramount importance that District officials, at all times, present the facts, as they become available, to the public, other District government agencies, and federal government agencies as accurately as possible so that all government officials can work together to ensure public safety. What follows are specific recommendations to various District government agencies/entities for future action to prevent a recurrence of the mistakes and failings outlined above.

### **ACTIONS TAKEN**

Recommendations referred to Kwame R. Brown, Chairman, Council of the District of Columbia, George S. Hawkins, General Manager, DC Water, Mohammad N. Akhter, M.D., M.P.H., Director, Department of Health, and Christophe A.G. Tulou, Director, District Department of the Environment. This Report of Investigation was provided to Mayor Vincent Gray, members of the Council, the City Administrator, and the Chairman of the Board of Directors, DC Water.

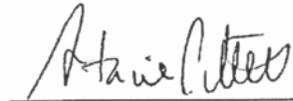
### **RECOMMENDATIONS**

The OIG recommends the following:

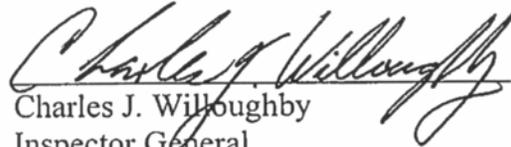
1. The D.C. Council, the Office of the Mayor, DC Water, the Department of Health, and/or the District Department of the Environment, consider commissioning a study regarding the effects of elevated levels of lead in tap water on blood lead levels in persons who drink unfiltered tap water and have no other lead contaminants in their environment;

2. DC Water review the conduct of DC Water employees as set forth in this report and determine whether administrative action is warranted regarding any of those mentioned who are current DC Water employees;
3. DC Water review its enabling statute, the OIG's enabling statute, and the OAG opinion stating that DC Water employees are District government executive Branch employees for the purposes of complying with the OIG statute, provide accurate written guidance to its employees regarding their obligations to respond to requests by the OIG for interviews and/or records;
4. If appropriate and necessary, the D.C. Council consider amending the enabling statute for DC Water to clarify that its employees are subject to the OIG's jurisdiction and that administrative action can be taken against those employees who fail to cooperate with an OIG investigation, audit, or inspection; and
5. The Department of Health and/or the District Department of the Environment consider hiring a water lead expert to advise it on health issues relating to elevated levels of lead in the District's tap water.

Report Approved by:



Stacie Pittell  
Assistant Inspector General  
for Investigations



Charles J. Willoughby  
Inspector General

Dated of Approval: 3/12/12