

Lead in Drinking Water: Sharing Responsibility

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In recent years, discussion of environmental issues has generally taken a highly politicized tone. In contrast, when an environmental incident temporarily grabs public attention, consensus quickly develops on the importance of environmental regulations to address the specific danger of concern, and even advocates of less government intrusion commonly question why the government did not do more to prevent the incident. Rarely, however, is there room in the public debate for more subtle questions, such as the steps individual citizens can take to protect their own health.

Lead in drinking water is a case in point. Even at low concentrations, lead may cause neurological injuries, learning disabilities, and damage to red blood cells and kidneys. Children and pregnant women are particularly susceptible. To protect human health, the EPA has established a nonenforceable goal in drinking water, known as a maximum contaminant level goal, of zero for lead. Nevertheless, potable water conveyed through lead pipes and reaching homes with lead-containing plumbing will contain some concentration of lead at the tap. Recognizing this reality, the EPA has set an action level of 0.015 milligrams per liter (mg/L) for triggering mitigating actions. Yet until recently, the potential for unsafe levels of lead to be present in the potable water was not a concern that garnered much public attention.

This changed abruptly with the disclosure of lead contamination in the public water system in Flint, Michigan. The city had switched the source of its drinking water from the Detroit Water and Sewerage Department, which draws water from Lake Huron, to the Flint River. Unfortunately, Flint failed to add sufficient anticorrosion control to the new water supply to prevent pipes from releasing lead into the water system. Medical examinations of children following discovery of the problem documented injuries, some irreversible, from blood lead concentrations far above the Centers for Disease Control and Prevention action level of 5 micrograms per deciliter. To date, six government officials have been criminally charged for their roles in creating or concealing this crisis.

Once media headlines focused national attention on lead in drinking water, investigations and lawsuits commenced throughout the country. To evaluate the claims asserted in the litigation, some additional context is required.

Lead ordinarily is naturally present only in small concentrations in sources of drinking water such as rivers and groundwater. When the water leaving drinking water plants enters a distribution system containing lead pipes, lead may be released into the water as the pipes corrode. Additional sources of lead exist in homes, schools and commercial buildings that contain lead and galvanized service lines and pipes, soldered connections, and plumbing fittings and fixtures that contain lead.

For water systems whose source water is not the major contributor of lead, federal and state laws focus on pipes and plumbing components. The Safe Drinking Water Act (SDWA) gives the EPA the flexibility to set numeric maximum contaminant levels or to require use of specific treatment

techniques, coupled with monitoring and reporting. Pursuant to this authority, the EPA adopted the lead and copper rule (LCR), a treatment standard that requires water systems to add and optimize corrosion control chemicals that coat pipe walls. Water suppliers must also conduct periodic monitoring of tap water, with priority given to homes classified as "Tier 1" because they are at a high risk for lead originating from lead pipes or solder.

The LCR requires water systems to undertake several measures if the concentration of lead in more than 10 percent of tap water samples collected during a monitoring period exceeds the action level of 0.015 mg/L. These measures include optimizing corrosion control, performing any required source water treatment, replacing portions of lead service lines in the distribution system, and educating consumers about lead health effects, sources and actions they can take to minimize lead exposure.

As a complement to the LCR, Section 1417 of the SDWA limits the use or introduction into commerce of lead in plumbing systems, including pipes, plumbing fittings and fixtures and solder when used in the installation or repair of any public water system or plumbing providing potable water. Section 1417 was amended by the federal Reduction of Lead in Drinking Water Act, effective Jan. 4, 2014, to require these components to be "lead-free," defined by amended Section 1417 to mean up to a weighted average of .25 percent lead on surfaces in contact with drinking water for consumption, and solder containing less than .2 percent lead. Pennsylvania imposed similar requirements.

In cities such as Philadelphia, old water mains and distribution pipes convey water to many homes built before the lead content in infrastructure and plumbing was restricted. While corrosion protection, maintenance or replacement of lead pipes in the distribution system is the water system's responsibility, maintenance or replacement of service lines and pipes, fittings and fixtures in homes or buildings is ordinarily the building owner's responsibility.

Maintenance and replacement is important, but home or building owners can do more to minimize lead content at their taps. Use of water from cold water taps for drinking water and cooking will avoid the higher lead concentrations found in hot water. Running water for a couple of minutes before initial use will avoid consumption of water that had sustained contact with pipes in the building. A homeowner can sample tap water at modest cost, and review the water system's Consumer Confidence Report, which summarizes results of samples taken by the water system as required by the LCR.

With this background, we turn to a putative class action that a Philadelphia resident commenced against the city of Philadelphia in June 2016 challenging the city's lead sampling methodology. *Delopoulos v. City of Philadelphia*, Case No. 160503980 (C.P. Phila. Co.). The plaintiff alleged that Philadelphia violated the LCR by selecting homes for sampling that are not the most at risk, and taking steps to conceal lead contamination by techniques such as pre-flushing the water before testing. The plaintiff further averred that the city's partial replacement of certain water lines increased leaching of lead from remaining lines. The plaintiff seeks to certify a class of residents located in areas where the city has replaced water lines or meters since Jan. 1, 2006. The plaintiff demands the costs of medical monitoring and replacement of lead service pipes owned by class members.

Although, as of the date of submission of this article, no answer to the complaint has been filed, many of the plaintiff's allegations will likely be contested. Sampling of homes and buildings classified under the LCR as Tier 2 and 3, even if shown to be improper, may have detected higher lead concentrations than were present in the Tier 1 homes sampled, and therefore may not have biased the results. In addition, it remains to be shown whether resampling with protocols advocated by the plaintiff produce materially higher results.

Differences among potential class members may present obstacles to class certification. Each home has different service lines and fixtures, and different lead concentrations at the tap. Consequently, whether and what remedial action is needed may differ among homes. The city has also already replaced some service lines in connection with work on its distribution system. Potential class members also differ in their exposures to other lead sources, such as lead paint. The plaintiff's allegations are serious, but the factual basis for the claims and whether classwide treatment is appropriate has yet to be established.

Protecting children, pregnant women, and other water consumers from unsafe concentrations of lead in drinking water requires a cooperative effort between operators of water systems and educated homeowners. The results of pending litigation may clarify how that responsibility is shared.

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