

## **TESTING FOR LEAD IN DRINKING WATER**

### **EPA's Current Method for Measuring Lead is More Accurate**

The water disaster in Flint, MI forced an important change in EPA's recommended methods for testing for lead in drinking water. In a memo to state health and water administrators issued on February 29, 2016, the U.S. Environmental Protection Agency (EPA) reversed its prior recommendations on how to sample drinking water targeted for lead testing.

Although EPA has issued these new guidelines, there's no guarantee that water companies around the country have switched to the new sampling procedures. If you're concerned about the lead levels in your water, find out what sampling procedures are being used because it makes a huge difference.

The new sampling method is as follows:

- Do not remove or clean faucet aerators/screens prior to collecting samples
- Do not pre-flush prior to sampling
- Use wide mouth sample bottles to allow water flow to enter at a rate similar to what consumers might use when pouring a glass of water to drink

In the past, EPA's advice was to pre-clean the aerator/screen, flush pipes prior to sampling, open the tap slowly and sample at low flow. Using these guidelines results in less lead getting into the sampling container and thus finding lower lead concentrations in the water. Removing or cleaning an aerator or screen prior to testing masks the added contribution of lead at the tap that results from the lead that is trapped in the aerator. The aerator catches lead particles that fall off pipes in the water system. Flushing the pipe prior to sampling eliminates the lead that has built up overnight or since the last time the faucet was used. Pouring the water slowly, whether by using a narrow container or by just opening the tap slowly, also reduces lead particles that get into the water by not disturbing lead present in the pipe as much as a normal flush would. These inaccurate and inappropriate procedures were called to task by Dr. Marc Edwards from Virginia Tech University and others.

The incorrect sampling procedures that EPA was recommending for years have been used by water companies for years to measure lead in drinking water. By using these inaccurate and inappropriate procedures, water companies everywhere, not just in Flint, have not been accurately measuring the lead concentration in drinking water, and they are potentially missing a significant portion of the lead in drinking water systems. Doing this provides a false sense of security that seriously endangers public health.

While we can thank the public attention given to the disaster in Flint for this critically important change in EPA's methods for measuring lead in drinking water, now we need to make sure that water companies across the country follow this new sampling protocol. Contact CHEJ at [info@chej.org](mailto:info@chej.org) to obtain a copy of the February 2016 EPA memo.

### **Lead Testing: The Consumer Confidence Report Could be Misleading**

Lead is regularly measured in municipal water systems and reported to the public in an annual Consumer Confidence Report (CCR). How the lead is measured is defined by procedures in EPA's Lead and Copper Rule (LCR). This rule establishes 15 parts per billion (ppb) as the maximum lead concentration allowed in drinking water and defines procedures that municipal water systems follow to determine whether they are in compliance

with this goal. Oddly, using these procedures helps ensure that water companies are in compliance with the LCR but does not ensure that the public is protected from lead exposure in drinking water.

For example, a study funded by a water utility industry found that if the sampling protocol used to determine compliance with LCR were designed to focus on the worst-case lead from lead service lines, over 70% of water utilities with these plumbing fixtures would violate the 15 ppb threshold, legally requiring urgent remedial action.<sup>1</sup>

How is this possible?

The sampling methods defined in the Lead and Copper Rule make this possible. First of all, not all homes supplied with water by a municipal water system are tested for lead. Water samples are taken from only a small portion of the entire water system each year, and of that portion, only 90% need to have lead concentrations below 15 ppb in order for the entire community's water to be deemed safe. Every household sampled gets notified of their lead levels, according to the requirements of the rule, but as long as 90% of these samples are below the action level, the rest of the community is not tested for lead and remains in the dark. There may be a home, for example, that has 1,000 ppb lead in its water, but if 90% of the tested homes have lead levels below the 15 ppb threshold, the water system is considered in compliance and no action is taken. Plus, only the property owner will know about the 1,000 ppb result. Furthermore, if the house with 1,000 ppb lead in its water is not ever sampled, they will have no idea how dangerous their drinking water is. Instead they will be told that their water has been tested and found to be "safe" from lead when no sample was ever taken from their tap. For this reason, lead results reported on the CCR should be taken with a grain of salt.

### **The EPA Action Level for Lead in Drinking Water**

EPA's action level for lead in drinking water - 15 ppb - fails to adequately protect the public from exposure to lead in drinking water, especially for young children, infants, and pregnant women. No quantity of ingested lead is safe for the human body. For children, the American Academy of Pediatrics (AAP) recommends a health-protective standard of 1 ppb or less for lead in drinking water at schools and other sources of water for developing children.<sup>2</sup> Ingesting any amount of lead during the first 6 years of a child's life leading to learning difficulties, behavior problems, slowed growth, and a lower IQ.<sup>3</sup> The actual health-based goal for lead as defined by EPA is zero. The 15 ppb figure represents a more "realistic" and achievable number for utilities and water companies due to technological and logistical constraints.

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<sup>1</sup> <http://lead.org.au/lanv18n2/LANv18n2-Truth-about-lead.pdf?cn=bWVzc2FnZV9qb2luX2NvbnZlcnNhdGlvbG%3D%3D&refsrc=email>

<sup>2</sup> <https://www.aap.org/en-us/about-the-aap/aap-press-room/pages/With-No-Amount-of-Lead-Exposure-Safe-for-Children,-American-Academy-of-Pediatrics-Calls-For-Stricter-Regulations.aspx>

<sup>3</sup> [https://ehp.niehs.nih.gov/wp-content/uploads/2017/09/EHP1605.alt\\_.pdf](https://ehp.niehs.nih.gov/wp-content/uploads/2017/09/EHP1605.alt_.pdf)