

Facts About Lead and Drinking Water in California

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Recent headlines about high levels of lead in drinking water in Flint, Michigan, have prompted questions about whether the same thing could happen elsewhere in the country. For many reasons, California's drinking water generally is at low risk for lead contamination and water agencies test water in accordance with state and federal drinking water laws to ensure it is safe to drink.

Key points

- Lead service lines are not common in California.
- California reduced the lead content standard for drinking water plumbing from 4% to 0.25% in 2010 with AB 1953 (Chan; 2010). The national "Get the Lead Out" law went into effect in 2014.
- Extensive testing to monitor for lead in drinking water began in 1991 when the U.S. Environmental Protection Agency implemented its Lead and Copper Rule.
- Corrosion control practices also are used by California water agencies.



Background

Lead, a heavy metal found in natural deposits, was used in household plumbing and water service lines in some parts of the United States. While the major source of household lead exposure comes from inhaling or ingesting lead paint chips or dust, lead can leach into drinking water from lead-containing pipes or fixtures as a result of corrosion.

Corrosion is a natural process that occurs when metals react with oxygen and form metal oxides. The chemistry of water either increases or decreases its ability to dissolve the metals in plumbing. Water that is acidic (pH below 7.0) tends to be more corrosive and water that is alkaline (pH above 7.0) is less corrosive. Consequently, water agencies often maintain a slightly alkaline pH in their water supply to help prevent any lead that might be present from leaching into the tap water.

When lead leaches into drinking water, it can cause adverse health effects, especially for pregnant women and young children. According to the California Department of Toxic Substances Control, exposure to high levels of lead can result in delays in physical or mental development, learning disabilities, behavioral problems, and impaired hearing and kidney damage in babies and young children. In adults, exposure to high levels of lead can result in kidney damage, high blood pressure, nerve disorders, fertility problems, and memory and concentration problems.

Drinking Water and Lead Testing in California

According to the State Water Resources Control Board's Division of Drinking Water, lead service lines like those used in Flint, and other areas of the country, are not common in California. However, some lead may be present in older homes, especially those with plumbing installed before 1986 with lead solder.



California's water agencies regularly test for lead in their systems and at the tap to comply with both the state and federal laws, including the EPA's Lead and Copper Rule. Water agencies also actively utilize corrosion control measures to prevent any lead that might be present from leaching into tap water.

Data from the Division of Drinking Water indicates that California's water systems consistently meet state and federal standards and California water customers receive water at the tap that is well below the maximum allowed level for lead of 15 parts per billion.

For more information:

- Review your local water agency's Annual Water Quality Report.
- Find out about testing methods and steps you can take to minimize exposure from the EPA Safe Drinking Water Hotline at (800) 426-4791 or online at www.epa.gov/safewater/lead and the Centers for Disease Control and Prevention <http://www.cdc.gov/nceh/lead>.
- If you are concerned about elevated levels of lead in your home's water, you may wish to have your water tested by a lab certified by the State Water Resources Control Board's Environmental Laboratory Accreditation Program.

Federal Drinking Water Regulation



The EPA's Lead and Copper Rule (LCR) was established in 1991. The rule requires public water systems to monitor and report lead and copper in drinking water that may result from corrosion of household plumbing or water distribution components. If lead concentrations exceed 15 parts per billion or copper concentrations exceed 1.3 parts per million in more than 10% of customer taps sampled, the water system must take corrective action to control corrosion and inform the public.

Prompted by the water crisis in Flint, EPA in February 2016, announced plans to increase oversight of state drinking water programs tasked with implementing the LCR.

EPA will meet with every state drinking water program in the country to address LCR implementation issues, provide training for state and public water systems on the requirements of the rule and additional resources related to optimal corrosion control treatment and proper LCR sampling techniques.

EPA is currently working on proposed revisions to the LCR which it expects will be issued in 2017.

The Flint Crisis

The water crisis in Flint was caused when the city switched its water source from Lake Huron to the Flint River, which has a more corrosive pH, and subsequently failed to implement appropriate corrosion control measures required by federal law.

According to Virginia Tech University, water quality tests of 271 Flint homes performed by the university in August 2015 found that Flint drinking water contained more than 133 times the amount of lead on average than the maximum allowed by the EPA. In October 2015, the city switched back to the Lake Huron water supply, but the lead contamination had already occurred.

On Jan. 5, 2016, Michigan Gov. Rick Snyder declared the city to be in a state of emergency. Shortly thereafter, President Barack Obama declared a federal state of emergency, authorizing \$5 million in federal aid and additional help from the Federal Emergency Management Agency and the Department of Homeland Security. The emergency is currently being investigated by a number of state and federal agencies, including the FBI.

Information for Consumers

Public water systems are required to provide customers with Consumer Confidence Reports (CCRs), also called Annual Water Quality Reports, by July 1 of each year. The report, required by the EPA, provides specific information about drinking water, including the types and levels of federally regulated contaminants that may be present. Levels are provided in CCRs only for contaminants that are detected in drinking water.

More information about CCRs can be found on EPA's website at <http://www.epa.gov/ccr>. For more on EPA's drinking water rules, please visit, <http://www.epa.gov/dwreginfo>.