



Lead in Drinking Water – Flint and More

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The effects of lead can be very harmful, as ingested lead can cause brain and kidney damage. Children are more vulnerable to lead -- even low levels of lead in children can slow mental development and cause learning and behavioral problems. Given the water crisis that occurred in Flint in late 2015 – early 2016, the issue of lead in drinking water is of renewed concern nationally.

The water crisis in Flint, MI began after a switch in water supply sources occurred in April 2014. In late April 2014, in an effort to save about \$5 million the city switched from purchasing treated Lake Huron water from Detroit, as it had done for 50 years, to treating water from the Flint River.

Flint like many old cities in the midwest and northeast contains lead service lines as they were inexpensive and easy to install decades ago. The finished water from Detroit contained a corrosion control treatment that resulted in a coating of the Flint systems water mains and service lines, as well as the individual home's internal plumbing. This effectively prevented lead from leeching into the water from mains, service lines and internal plumbing.

To utilize the Flint River water, Flint's water treatment plant that was being run four times a year would have to be run full-time. Unfortunately, major errors were made with the treatment of the water supply from the Flint River. Water from the Flint River was nearly twenty times as corrosive as the Lake Huron supply. The Flint treatment plant was not equipped to corrosion control treatment that was previously performed on the treated water purchased from Detroit.

Flint residents noticed the difference in the water almost immediately. They complained about the water's color, odor and taste. The failure to treat the Flint River water with an anti-corrosive agent was causing the water system's mains to erode, turning water brown. But what residents could not see was far worse. About half of the service lines to homes in Flint are made of lead and because the water was not properly treated with a water softening agent, lead began leaching into the water supply from lead service lines and in-home plumbing.

A large part of the water crisis in Flint, Michigan was due to a lack of regulatory oversight. Unlike Connecticut where public water supply is regulated by the Department of Public Health and Department of Energy and Environmental Protection, with investor owned companies also regulated by the Public Utilities Regulatory Authority, Michigan's public water systems have much less regulatory oversight. In addition to state regulatory agencies that are charged with regulating sources of supply, the Federal Environmental Protection Agency (EPA) also regulates drinking water quality, including the exposure to lead. EPA's regulation is based on its Lead and Copper Rule, which seeks to minimize lead in drinking water primarily through corrosion control of lead pipes. If corrosion control is not effective, the rule can require water quality monitoring and treatment, corrosion control treatment, the removal of lead lines and public education.

The Drinking Water Section (DWS) of the State of Connecticut's Department of Public Health (DPH) is responsible for the administration and implementation of state and federal public health-focused drinking water laws and regulations, and is dedicated to assuring the purity and adequacy of the state's public drinking water systems and sources. The DWS has primacy over the U.S. Environmental Protection Agency's Safe Drinking Water Act of 1974 as well as state public drinking water laws and provides technical assistance, education and regulatory enforcement to Connecticut's 2,550 public drinking water systems, which provide public drinking water to approximately 2.8 million people on a daily basis.

As the result of the Flint water crisis, the DPH has been highlighting its efforts on what is being done to keep close tabs on public water systems in the state of Connecticut. In a press release from April 2016, DPH said that 99 percent of the state's 2,500 public water systems--which serve about 2.9 million people--are in compliance with federal standards on lead levels. There are 14 systems statewide, however, which currently have higher-than-safe levels of lead and/or copper contaminating their water supply.

- Hawthorne Terrace Association in Danbury
- Franklin Commons in Franklin
- Parkway School in Greenwich
- 95 Bridge Road in Haddam
- CTWC - London Park Division in Hebron
- Birch Mountain Day School in Manchester
- Cedarhurst Association in Newtown
- Temple Shalom in Norwalk
- Department of Energy and Environmental Protection Marine Headquarters in Old Lyme
- Eastport - West 2 in Old Lyme
- Moosup Garden Apartments in Plainfield
- Baxter Farms Community Water Association in Tolland
- 62-70 Merrow Road in Tolland
- Arrowhead by the Lake Association condominiums in Wolcott

DPH estimates that the 14 public water systems not in compliance with lead and copper levels service just over 2,000 people.

Private Wells

There are approximately 323,000 private residential wells in Connecticut that serve approximately 823,000 people. Private wells that supply residential houses for domestic use are not currently regulated by the United States EPA. Private well owners are responsible for testing the quality of their own drinking water and maintaining their own wells. Local Health Departments and Districts have the authority over private wells in their respective towns.

Many private well owners do not test their wells regularly. Some have not tested their well water for years. Well owners are encouraged to test their water on a regular basis, including testing for lead. Tests for lead should be performed first thing in the morning after water has not been run for six hours or more.

Lead Service Lines

It is estimated that more than 6 million homes and businesses have lead service lines across the United States. Lead service lines were not uncommon in homes built before 1983. Some water companies and municipal systems have been in the process of replacing lead service lines they own. Service lines on a customer's property are not part of the municipal or investor owned public water system and are the responsibility of the property owner. If lead service lines are discovered during routine or emergency repair work, many water providers will offer to replace the property owner's section from the curb to their building, for the cost of labor and materials.

Finding out if you have a lead service line is extremely important. Many investor owned utilities in Connecticut are starting to assemble a data base of where lead services are located in Connecticut. This will determine what water systems are most impacted and will assist in water supply testing.

Steps to Reduce Potential Lead Consumption (Recommended by EPA)

While measures have been taken over the past 30 years that have greatly reduced exposure to lead in tap water, lead can be still found in some metal water fixtures, interior water pipes, or pipes connecting a house to the main water pipe in the street. Lead found in tap water usually comes from the corrosion of older fixtures or from the solder that connects pipes. When water sits in leaded pipes for several hours, lead can leach into the water supply.

If your tap water contains lead at levels exceeding EPA's action level of 15 ppb, you should take action to minimize your exposure to the lead in the water.

You should begin by asking your water authority these questions:

1. Does my water have lead in it above EPA's action level of 15 parts per billion (ppb)?

If the answer is no, no action is needed.

If the answer is yes, also ask the next question:

2. Does the service pipe at the street (header pipe) have lead in it?

This information is very important. It determines which of the next two actions (A or B) you should follow to protect your household's health.

A) If the pipe in the street (header pipe) **DOES NOT** have lead, the lead in your tap water may be coming from fixtures, pipes, or elsewhere inside your home.

Until you eliminate the source, you should take the following steps any time you wish to use tap water for drinking or cooking, especially when the water has been off and sitting in the pipes for **more than 6 hours**:

a. Before using any tap water for drinking or cooking, flush your water system by running the kitchen tap (or any other tap you take drinking or cooking water from) on **COLD** for **1–2 minutes**;

b. Then, fill a clean container(s) with water from this tap. This water will be suitable for drinking, cooking, preparation of baby formula, or other consumption. To conserve water, collect multiple containers of water at once (after you have fully flushed the water from the tap as described).

B) If the pipe at the street (header pipe) **DOES** contain lead, lead in the tap water may be coming from that pipe or connected pipes (it may also be coming from sources inside your home).

Until the lead source is eliminated, you should take the following steps any time you wish to use tap water for drinking or cooking, especially when the water has been off and sitting in the pipes for **more than 6 hours**. Please note that **additional flushing is necessary**:

a. Before using any tap water for drinking or cooking, run high-volume taps (such as your shower) on **COLD** for 5 minutes or more;

b. Then, run the kitchen tap on **COLD** for **1–2 additional minutes**;

c. Fill a clean container(s) with water from this tap. This water will be suitable for drinking, cooking, preparation of baby formula, or other consumption. To conserve water, collect multiple containers of water at once (after you have fully flushed the water from the tap as described).

3. In all situations, drink or cook only with water that comes out of the tap cold. Water that comes out of the tap warm or hot can contain much higher levels of lead. Boiling this water will NOT reduce the amount of lead in your water.

4. You can also reduce or eliminate your exposure to lead in drinking water by consuming only bottled water or water from a filtration system that has been certified by an independent testing organization to reduce or eliminate lead. See [resources](#) below.

5. Children and pregnant women are especially vulnerable to the effects of lead exposure. Therefore, for homes with children or pregnant women and with water lead levels exceeding EPA's action level of 15 ppb, CDC recommends using bottled water or water from a filtration system that has been certified by an independent testing organization to reduce or eliminate lead for cooking, drinking, and baby formula preparation. Because most bottled water does not contain fluoride, a fluoride supplement may be necessary.

Also, some bottled waters have not been tested and may not be appropriate for consumption. Contact independent testing organizations that certify bottled water. See [resources](#) below.

6. Make sure that repairs to copper pipes do not use lead solder.

Advice for lead safe water practices after plumbing work in housing with lead water lines or lead solder.

These practices include

1. Testing water after plumbing work in older housing. Please contact your [state lead program](#) for information about water testing in your area.
2. Inspecting the aerator on the end of the faucet and removing any debris such as metal particles.
3. Flushing water lines before using the water for drinking or cooking.

If you own your home, you may also consider full replacement of lead water lines by removing the private lines running from the water meter into your home. This precaution has not been adequately studied, however, because the data available to CDC included too few homes having had full replacement of lead water lines. Contact your water authority for information about replacing water service lines.

If my water has high lead levels, is it safe to take a bath or shower?

Yes. Bathing and showering should be safe for you and your children, even if the water contains lead over EPA's action level. Human skin does not absorb lead in water.

This information applies to most situations and to a large majority of the population, but individual circumstances may vary. Some situations, such as cases involving highly corrosive water, may require additional recommendations or more stringent actions. Your local water authority is always your first source for testing and identifying lead contamination in your tap water. Many public water authorities have websites that include data on drinking water quality, including results of lead testing. Links to such data can be found on the EPA website: <http://www.epa.gov/ccr>.