

## Frequently Asked Questions About Lead

Goal: To share information about the Portland Water Bureau's existing program to reduce lead exposure from all sources.

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## Background on Lead in Water

### Is there lead in Portland's water?

Water-related lead exposure in Portland is linked to building plumbing and fixtures, not to lead in our water or distribution system. Portland's drinking water comes from two high-quality sources – the Bull Run Watershed and Columbia South Shore Well Field. Our source waters meet or exceed all federal and state drinking water standards.

### What are the sources of lead in drinking water in Portland?

In Portland, the greatest source of lead in water is household plumbing. Portland has never used lead service lines and has removed all known lead service connectors also known as pigtails or goosenecks (short 2-3' pipes).

### How can customers test their drinking water for lead?

The Portland Water Bureau offers free test kits. Contact the LeadLine at [www.leadline.org](http://www.leadline.org) or calling 503-988-4000.

### How does lead get in drinking water?

For elevated levels of lead to be present in drinking water there must be a source of lead, usually found in building plumbing or fixtures. The water in these pipes or fixtures generally needs to be in contact with the source of lead for several hours for the lead to be absorbed in the water. Hot water can absorb lead faster and at a higher level than cold water.

### What can customers do if their home plumbing is contributing lead to their drinking water?

There are several common-sense steps people can take to reduce their exposure to lead through drinking water:

- Run your tap for 30 seconds to 2 minutes before using the water for drinking or cooking after it has been standing for several hours. Tests have shown more than 85% reduction of lead in water from this simple step.
- [Use a filter certified to remove lead from water](#). Be sure to maintain and replace a filter device in accordance with the manufacturer's instructions to protect water quality.
- Contact your local plumber to evaluate the possibility of replacing your plumbing.

### What homes are most at risk for lead?

In Portland, the homes most at risk for lead in water are homes with copper pipes joined with lead solder. These were generally built or plumbed between 1970 and 1985. However, the homes with the greatest risk for exposure to lead are those with lead-based paint. Homes built before 1960 are most likely to have lead-based paint.

### **How many homes are at risk for lead in water?**

There are potentially up to 15,000 homes in Portland that were built between 1970 and 1985. These homes are more likely to have lead solder.

### **Could my home have a lead service line?**

No. Service lines are the pipe that connects the drinking water mains in the streets to homes and buildings. Portland has never used lead service lines. Prior to 1940, lead pigtails, short 2-3' pipes connecting the service line to the main, were used on some homes. Portland finished removing all known pigtails from the system in 1998.

### **What are other sources of exposure to lead?**

In Portland the greatest source of exposure to lead is lead-based paint. Homes older than 1960 are most likely to have high levels of lead-based paint. To learn more about ways to reduce your exposure to all sources of lead contact the LeadLine at [www.leadline.org](http://www.leadline.org) or 503-988-4000.

## **Health Effects from Lead**

### **What are the health effects of lead?**

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body.

The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

### **Who is most at risk for lead in water?**

Children under six and pregnant women are most at risk for lead exposure, particularly if they live in homes with lead solder in their plumbing. These homes were typically built or plumbed between 1970 and 1985.

### **How can I test my child for lead exposure?**

You can have your child tested by your pediatrician or through the LeadLine. Dates and times of free blood lead testing clinics can be found at [www.leadline.org](http://www.leadline.org).

Multnomah County is the public health agency that tracks lead levels in blood. Of the over 19,000 blood lead level tests conducted by the County and its partners between 2014 and 2016, elevated lead levels were found in 184 children in Multnomah County. No cases were traced to lead in drinking water.

### **What resources are available to help reduce my exposure to lead?**

As part of our lead hazard reduction efforts we partner with community organizations and governmental agencies that conduct lead hazard reduction education and outreach services in the Portland-area. Contact the LeadLine at [www.leadline.org](http://www.leadline.org) or 503-988-4000 for more information, or visit our [Lead Hazard Reduction Program page](#) to learn more about the organizations.

### **How the Portland Water Bureau Monitors and Treats for lead in water**

#### **What is the Lead and Copper Rule?**

The [Lead and Copper Rule](#) is the federal regulation that determines how water systems should treat drinking water to reduce lead and copper exposure from drinking water.

#### **Does Portland treat drinking water to reduce lead?**

Yes. Since 1997 the Portland Water Bureau has been adding sodium hydroxide, also known as caustic soda, to increase the pH of its drinking water. This has reduced the lead in water levels in the most at-risk homes by up to 70%.

#### **What are the pH and alkalinity of Portland's water?**

Since 1997 Portland has adjusted the pH of its drinking water to reduce the corrosion of lead. Since 2005 it has been adjusted to 8.0, and will be increased to 8.1 in February of 2017 with a likely increase to 8.2 later in 2017.

Portland's main source of water, the Bull Run Watershed, has an average alkalinity of 11 mg/L. Our secondary source, the Columbia South Shore Well Field, has an average alkalinity of 101 mg/L.

#### **Is Portland in compliance with the Lead and Copper Rule?**

Yes. Since 1997, the Portland Water Bureau has been in compliance with the Lead and Copper Rule.

#### **What is the federal standard for lead in public drinking water systems?**

The Lead and Copper Rule set the federal action level for lead at 15 parts per billion (ppb) to evaluate the effectiveness of corrosion control treatment. This means that if ten percent of water samples from Tier 1 Homes (see below) have lead levels of over 15 ppb, a water provider is required to take actions. These actions include reviewing corrosion control treatment and informing the public of steps to take to prevent exposure to lead in water.

In the most recent round of testing in Fall of 2016, more than 10 percent of samples, 14 of 112, from high-risk homes exceeded the action level for lead. As a result, the Portland Water Bureau is informing the public and working with regulators to identify ways to further reduce levels of lead in water.

### **What is the federal standard for lead in schools?**

In addition to the action level of 15 ppb for drinking water systems, the EPA has recommended that schools and daycares use a lead in water level of 20 ppb to identify locations that are contributing to lead in water.

This difference in standards is due to differing sampling methods used to identify faucets and fixtures in schools that contribute to high lead in water, versus testing for system wide corrosion control effectiveness. The State of Oregon has also developed a [Healthy School Facilities](#) program that includes new rules for lead testing in Oregon schools.

### **How does Portland comply with the Lead and Copper Rule?**

The Portland Water Bureau meets the requirements of the Lead and Copper Rule with a unique comprehensive lead education, outreach, testing and remediation program, the Lead Hazard Reduction Program. This program is comprised of four components:

[Corrosion Control Treatment](#)

[Lead in Water Education and Testing](#)

[Education and Outreach for all sources of lead exposure](#)

[Lead paint remediation](#)

### **How does Portland monitor for lead in water?**

The Portland Water Bureau monitors for lead in water in the highest-risk homes in the bureau's service area. These homes, referred to as Tier 1 homes, were built or plumbed from 1983-1985 and are confirmed to have lead solder in their household plumbing. These homes are sampled every 6 months by testing the water after it has been sitting in the home plumbing for at least 6 hours, which is expected to represent the highest likely occurrence of lead.

### **What is a Tier 1 Home?**

"Tier 1 Home" is a regulatory term that is defined as a home with a lead service line or a home built or plumbed between 1983 and June 30, 1985, that has lead solder. There are potentially 1,200 Tier 1 homes in Portland's service area.

### **Are some homes more at-risk for lead in water than others?**

Homes with copper pipes and lead solder are more likely to have elevated levels of lead in drinking water than other homes. In Portland these high-risk homes tend to be homes built between 1970 and 1985.

### **How many at-risk homes potentially exceed the federal action level of 15 ppb?**

Based on the Water Bureau's testing, up to 10% of the at-risk homes (those built between 1970 and 1985) may have elevated levels of lead that could exceed the federal action level of 15 ppb. These are homes the Portland Water Bureau targets with its Lead in Water Education and Testing Program. Customers in at-risk homes are encouraged to test their water for lead.

### **What do Portland's lead in water results mean?**

Monitoring for lead in water from Tier 1 Homes is intended to capture a snapshot of the highest lead levels in the highest-risk homes as a way of monitoring the effectiveness of the bureau's corrosion control treatment. These results do not indicate the level of lead likely to be found in the vast majority of homes in our system.

### **What does Portland do to reduce exposure to lead in water?**

The Portland Water Bureau has a comprehensive corrosion control program to reduce lead in water, including:

- [Treating our drinking water](#) with sodium hydroxide to reduce the potential for lead corrosion in home plumbing.
- [Conducting extensive education and outreach](#) to customers in the most at-risk homes.
- Providing information to all customers about [simple steps they can take to reduce their exposure to lead in water](#).
- Offer free lead-in-water testing to all customers so they can better understand their exposure to lead in water.

### **Has Portland conducted corrosion control studies? When?**

In 1994 Portland completed a corrosion control study that indicated raising the pH to 9.0 and adjusting alkalinity to 20 mg/L may provide additional reduction of lead in water. The Portland City Council directed the Water Bureau to look at alternative methods to reduce exposure to lead. The result is Portland's current compliance program.

After exceeding the action level for lead in water in 2013 and in anticipation of changes to the water system, the Portland Water Bureau secured funding to begin a Water Quality Corrosion Study in 2014. The data gathering phase of this study concluded in November 2016. Preliminary results indicate that treatment improvements would reduce the levels of lead in water. As a result, a corrosion control treatment pilot is being recommended to Council for consideration in March 2017.