



# Portland Water Bureau’s 2020 Drinking Water Quality Report

## Table of Contents

|  |    |
|--|----|
| Table of Contents .....  | 1  |
| Portland’s Drinking Water Sources .....  | 2  |
| Water for People, Water for Fish .....   | 4  |
| Facts about Our Drinking Water System .....  | 5  |
| Frequently Asked Questions About Water Quality .....                                     | 6  |
| What the EPA Says Can Be Found in Drinking Water .....                                   | 9  |
| Additional Testing Completed in 2019 .....   | 10 |
| Definitions of acronyms used in data tables .....  | 13 |
| Contaminants Detected in 2019 .....  | 16 |
| About These Contaminants .....   | 22 |
| Monitoring for <i>Cryptosporidium</i> .....  | 25 |
| Special Notice for Immunocompromised Persons .....                                       | 27 |
| Bull Run Treatment Projects – Our water: Safe and abundant for generations to come ..... | 28 |
| Reducing Exposure to Lead .....  | 29 |
| Questions? We’re here to help .....  | 37 |

## **Portland's Drinking Water Sources**

**The Bull Run Watershed**, Portland's protected surface water supply, is in the Mount Hood National Forest, 26 miles from Portland. The Portland Water Bureau and the U.S. Forest Service carefully manage the watershed to sustain and supply clean drinking water. In a typical year, the watershed receives an astounding 135 inches of precipitation (rain and snow), which flows into the Bull Run River and then into two reservoirs that store nearly 10 billion gallons of drinking water.

Source water assessments are completed to identify contaminants of concern for drinking water. For the Bull Run, the only contaminants of concern are naturally occurring microorganisms, such as *Giardia*, *Cryptosporidium*, fecal coliform bacteria, and total coliform bacteria. The Portland Water Bureau regularly tests Bull Run water for these microorganisms that live in virtually all freshwater ecosystems.

The Portland Water Bureau treats water to control organisms that could make people sick but does not currently treat for *Cryptosporidium*. Portland is installing filtration to remove *Cryptosporidium* and other contaminants from drinking water by 2027. Learn more on pages 25 through 29.



[Portland's source water assessment is available at](#)

[portlandoregon.gov/water/sourcewaterassessment](http://portlandoregon.gov/water/sourcewaterassessment) or by calling 503-823-7525.

**The Columbia South Shore Well Field**, Portland's protected groundwater supply, provides drinking water from 25 active wells located in three different aquifers. The well field is between Portland International Airport and Blue Lake Park. Portland uses the well field for two purposes: to supplement the Bull Run supply in the summer, and to temporarily replace the Bull Run supply during turbidity events, maintenance activities, and emergencies.

The Columbia South Shore Well Field is beneath homes and businesses with a variety of potential contaminant sources. The deep aquifers that are the primary sources of water supply have natural geologic protection from pollutants present at the land surface. Portland, Gresham, and Fairview work together to protect the well field. The cities' Groundwater Protection Programs work with residents and businesses in the well field to ensure that pollutants from this urban area do not impact the groundwater source.

To learn more about [groundwater protection and find upcoming groundwater education events](#), visit [portlandoregon.gov/water/groundwater](http://portlandoregon.gov/water/groundwater).

The Clackamas River Water District, City of Gresham, City of Lake Oswego, City of Milwaukie, Rockwood Water People's Utility District, Sunrise Water

Authority, and Tualatin Valley Water District provide drinking water to some Portland customers who live near service area boundaries. Customers who receive water from these providers will receive detailed water quality reports about these sources in addition to this report.

**[Get email updates when we make changes to our source water or treatment. Sign up at portlandoregon.gov/water/notification.](https://portlandoregon.gov/water/notification)**

## **Water for People, Water for Fish**

The Bull Run River, Portland's primary drinking water source, is also home to four runs of threatened salmon and steelhead. The Portland Water Bureau has developed forty-nine specific measures to address the flow, temperature, and habitat impacts the drinking water system has on salmon habitat and water quality in the lower Bull Run River. These measures include restoring salmon habitat, improving access for fish, managing stream temperature and flow in the lower Bull Run River, and working with partners in the greater Sandy River Basin to improve salmon and steelhead populations.

Engineered logjams help create habitat for fish to live and spawn. Large pipes with natural stream bottoms, called culverts, are used under roads in the watershed so that fish have access to their spawning streams. Portland Water Bureau fish biologists use smolt traps, seen in the background, to count young fish in the Bull Run River.

## Facts about Our Drinking Water System

- Portland's water system was established in 1895
- Portland's drinking water system delivers water from two high-quality sources – the Bull Run Watershed and the Columbia South Shore Well Field – to almost one million people in Portland and surrounding communities.
- Most of Portland's drinking water comes from the Bull Run Watershed, 26 miles east of downtown Portland.
- Treatment operators add chlorine to control microorganisms, such as bacteria and viruses, that could make people sick.
- Treatment operators add ammonia to form a longer-lasting disinfectant. They also add sodium hydroxide to reduce corrosion of metals.
- Drinking water flows by gravity from Bull Run to Portland.
- Pumps pull groundwater from the aquifers of the Columbia South Shore Well Field.
- Reservoirs and tanks store water for everyday use, plus firefighting and emergency needs.
- Water Bureau employees collect and test more than 11,000 water samples each year.
- More than 2,200 miles of water mains carry water beneath the city's streets.
- Thousands of hydrants safeguard the city.

## Frequently Asked Questions About Water Quality

### What test results will I find in this report?

The Portland Water Bureau monitors drinking water for over 200 regulated and unregulated contaminants. This report lists all of the regulated contaminants the bureau detected in drinking water in 2019. **If a known, health-related contaminant is not listed in this report the Portland Water Bureau did not detect it in drinking water.**

### How is Portland's drinking water treated?

Currently, Portland's drinking water treatment is a three-step process: **1) Chlorine** disinfects against organisms, such as bacteria and viruses, that could otherwise make people sick. **2) Ammonia** stabilizes chlorine to form a longer-lasting disinfectant. **3) Sodium hydroxide** reduces corrosion of metals like lead. Portland's treatment is changing in the coming decade. Learn more on page 28.

### Is Portland's water filtered?

No. Neither of Portland's sources is filtered. In response to a series of low-level detections of *Cryptosporidium* in 2017, Portland is installing a filtration plant to treat for *Cryptosporidium*. Bull Run water will be filtered by 2027. Learn more on pages 25 through 29.

## **Does the Portland Water Bureau add fluoride to the water?**

No. Fluoride naturally occurs in Portland's water at very low levels. You may want to ask your dentist or doctor about supplemental fluoride for preventing tooth decay. This is especially important for young children.

## **Is Portland's water soft or hard?**

Bull Run water—Portland's main water supply—is very soft. It typically has a total hardness of 3–8 parts per million (ppm), or  $\frac{1}{4}$  to  $\frac{1}{2}$  a grain of hardness per gallon. Portland's groundwater supply is moderately hard: about 80 ppm, or about 5 grains per gallon.

## **What is the pH of Portland's water?**

The pH of Portland's drinking water typically ranges between 7.5 and 8.5.

## **How can I get my water tested?**

[For free lead-in-water testing, contact the LeadLine at \[leadline.org\]\(http://leadline.org\) or 503-988-4000.](#) For other testing, you can pay a private, accredited laboratory to test your tap water. For [information about accredited labs, contact the Oregon Health Authority at \[ORELAP.Info@state.or.us\]\(mailto:ORELAP.Info@state.or.us\) or 503-693-4100.](#)

## **What causes temporarily discolored water?**

Since Portland's water is not filtered, sediment and organic material from the Bull Run Watershed are present in Portland's water supply. These can sometimes be seen when hydrant use or a water main break stirs up the



sediment that settled at the bottom of the water mains. They can also be seen in the fall as a harmless tea-colored tint. Another source is older pipes in buildings. These pipes can add rust to water when no one has used the water for several hours. [Find out more about discolored water at portlandoregon.gov/water/discoloredwater.](https://portlandoregon.gov/water/discoloredwater)

### **Is Portland's water safe from viruses such as COVID-19?**

Your water is safe from viruses and safe to drink. Portland controls microorganisms, including viruses, with chlorine.

### **Water quality or pressure issues or concerns?**

[Contact the Water Quality Line: WBWaterLine@portlandoregon.gov](mailto:WBWaterLine@portlandoregon.gov)

503-823-7525

[Water quality frequently asked questions:](https://portlandoregon.gov/water/WQfaq)

[portlandoregon.gov/water/WQfaq](https://portlandoregon.gov/water/WQfaq)

### **Discolored water? Low flow?**

[Start here for water quality troubleshooting tips:](https://portlandoregon.gov/water/guide)

[portlandoregon.gov/water/guide](https://portlandoregon.gov/water/guide).

Request a paper copy: 503-823-7525

## What the EPA Says Can Be Found in Drinking Water

Across the United States, the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) has regulations that limit the amount of certain contaminants in water provided by public water systems and require monitoring for these contaminants. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Contaminants in drinking water sources may include: **microbial contaminants**, such as viruses, bacteria, and protozoa from wildlife; **inorganic contaminants**, such as naturally-occurring salts and metals; **pesticides and herbicides**, which may come from farming, urban stormwater runoff, or home and business use; **organic chemical contaminants**, such as byproducts from industrial processes or the result of chlorine combining with naturally occurring organic matter; and **radioactive contaminants**, such as naturally occurring radon.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 800-426-4791 or at [EPA's drinking water website: epa.gov/safewater](https://www.epa.gov/safewater).

## **Additional Testing Completed in 2019**

Every five years, the EPA requires the Portland Water Bureau and other water utilities across the country to test their water for contaminants that do not have a federal standard or limit. These are called unregulated contaminants. After testing rounds are complete, the EPA evaluates the test results and the potential health risks of the contaminants to determine if a standard is needed to protect public health.

In 2019, the Portland Water Bureau tested its water for the following unregulated contaminants: 10 cyanotoxins; 2 metals; 4 unregulated disinfection byproduct groups and precursors; 1 regulated disinfection byproduct group; 9 pesticides and pesticide byproducts; 3 alcohols; 3 semivolatile chemicals. Of these, only manganese, disinfection byproducts, and one precursor were detected.

Manganese is a metal found in the earth's crust. It can dissolve into water that is in contact with natural deposits. Low levels of manganese in water can cause discolored water or staining. High levels of manganese can lead

to negative health effects. At the levels in Portland’s water, it is unlikely to lead to negative health effects.

Disinfection byproducts form when precursors, which are naturally present in the environment, combine with chlorine, which is added to water as disinfection. High levels of disinfection byproducts could cause health problems in people. At the levels in Portland’s water, these are unlikely to lead to negative health effects.

**Data table of unregulated metals detected in Portland’s water during additional testing**

| <b>Unregulated Contaminant</b> | <b>Minimum Detected</b> | <b>Average Detected</b> | <b>Maximum Detected</b> | <b>Sources of Contaminant</b> |
|--------------------------------|-------------------------|-------------------------|-------------------------|-------------------------------|
| Manganese (ppm <sup>1</sup> )  | 0.0017                  | 0.016                   | 0.062                   | Found in natural deposits     |

---

<sup>1</sup> ppm: parts per million. Water providers use ppm to describe a small amount of a substance within the water. In time measurement, one part per million is about 32 seconds out of one year.

**Data table of unregulated disinfection byproducts and precursors detected in Portland’s water during additional testing**

| <b>Unregulated Contaminant</b>                      | <b>Minimum Detected</b> | <b>Average Detected</b> | <b>Maximum Detected</b> | <b>Sources of Contaminant</b>            |
|---|-------------------------|-------------------------|-------------------------|--|
| Total Organic Carbon (ppm <sup>2</sup> )            | 0.89                    | 1.37                    | 1.70                    | Naturally present in the environment     |
| Haloacetic Acids-5 <sup>3</sup> (ppb <sup>4</sup> ) | 17                      | 29.7                    | 43                      | Byproduct of drinking water disinfection |
| Haloacetic Acids-6Br (ppb)                          | <0.2                    | 0.92                    | 1.5                     | Byproduct of drinking water disinfection |
| Haloacetic Acids-9 (ppb)                            | 18                      | 30.4                    | 44                      | Byproduct of drinking water disinfection |

---

<sup>2</sup> ppm: parts per million. Water providers use ppm to describe a small amount of a substance within the water. In time measurement, one part per million is about 32 seconds out of one year.

<sup>3</sup>Haloacetic Acids-5 are a group of regulated disinfection byproducts. Additional results for this group are on page 20.

<sup>4</sup> ppb: parts per billion Water providers use ppb to describe a very small amount of a substance within the water. In time measurement, one part per billion is about 3 seconds out of 100 years.

## Definitions of acronyms used in data tables

This section is an index of the acronyms used in data tables in this report. All data tables are labeled with headers. The definitions of the acronyms are also provided in this index. More information about the contaminants is in the **About these contaminants** section that follows the data tables (see page 22).

### **MCL: Maximum Contaminant Level**

The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

### **MCLG: Maximum Contaminant Level Goal**

The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

### **MRDL: Maximum Residual Disinfectant Level**

The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

## **MRDLG: Maximum Residual Disinfectant Level Goal**

The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

### **N/A: not applicable**

Some contaminants do not have a health-based level or goal defined by the EPA.

## **NTU: Nephelometric Turbidity Unit**

A unit for measuring the turbidity, or cloudiness, of a water sample.

### **ppm: parts per million**

Water providers use ppm to describe a small amount of a substance within the water. In time measurement, one part per million is about 32 seconds out of one year.

### **ppb: parts per billion**

Water providers use ppb to describe a very small amount of a substance within the water. In time measurement, one part per billion is about 3 seconds out of 100 years.

### **pCi/L: picocuries per liter**

Picocurie is a measurement of radioactivity.



## **TT: Treatment Technique**

A required process intended to reduce the level of a contaminant in drinking water.



## Contaminants Detected in 2019

Data table of regulated contaminants detected in Portland's untreated source water

| <b>Regulated Contaminant</b>                                   | <b>Minimum Detected</b> | <b>Maximum Detected</b> | <b>EPA Standard: MCL or TT</b> | <b>EPA Standard: MCLG</b> | <b>Sources of Contaminant</b> |
|--|-------------------------|-------------------------|--------------------------------|---------------------------|-------------------------------|
| Turbidity (NTU)  | 0.19                    | 1.32                    | 5                              | N/A                       | Erosion of natural deposits   |
| Fecal coliform bacteria<br>(% >20 colonies/100 mL in 6 months) | Not Detected            | 0%                      | 10%                            | N/A                       | Animal wastes                 |
| Giardia (#/L)  | Not Detected            | 0.08                    | TT                             | N/A                       | Animal wastes                 |



**Data table of regulated metals and nutrients detected in Portland’s treated water at the entry point**

| <b>Regulated Contaminant</b> | <b>Minimum Detected</b> | <b>Maximum Detected</b> | <b>EPA Standard: MCL or TT</b> | <b>EPA Standard: MCLG</b> | <b>Sources of Contaminant</b>            |
|------------------------------|-------------------------|-------------------------|--------------------------------|---------------------------|--|
| Arsenic (ppb)                | <0.50                   | 1.09                    | 10                             | 0                         | Found in natural deposits                |
| Barium (ppm)                 | 0.00082                 | 0.01350                 | 2                              | 2                         | Found in natural deposits                |
| Fluoride (ppm)               | <0.025                  | 0.140                   | 4                              | 4                         | Found in natural deposits                |
| Nitrate – Nitrogen (ppm)     | <0.010                  | 0.054                   | 10                             | 10                        | Found in natural deposits, animal wastes |



**Data table of regulated microbial contaminants detected in Portland’s treated water in the distribution system**

| <b>Regulated Contaminant</b>                      | <b>Minimum Detected</b> | <b>Maximum Detected</b> | <b>EPA Standard: MCL or TT</b> | <b>EPA Standard: MCLG</b> | <b>Sources of Contaminant</b>    |
|---|-------------------------|-------------------------|--------------------------------|---------------------------|----------------------------------|
| Total coliform bacteria<br>(% positive per month) | Not Detected            | 0.38%                   | N/A                            | N/A                       | Found throughout the environment |



**Data table of regulated disinfection residuals detected in Portland’s treated water in the distribution system**

| <b>Regulated Contaminant</b>                                       | <b>Minimum Detected</b> | <b>Maximum Detected</b> | <b>EPA Standard: MCL or TT</b> | <b>EPA Standard: MCLG</b> | <b>Sources of Contaminant</b>    |
|--|-------------------------|-------------------------|--------------------------------|---------------------------|----------------------------------|
| Total chlorine residual (ppm) running annual average               | 1.76                    | 1.80                    | 4<br>[MRDL]                    | 4<br>[MRDLG]              | Chlorine used to disinfect water |
| Total chlorine residual (ppm) range of single results at all sites | 0.17                    | 2.57                    | N/A                            | N/A                       | Chlorine used to disinfect water |



**Data table of regulated disinfection byproducts detected in Portland’s treated water in the distribution system**

| <b>Regulated Contaminant</b>                                       | <b>Minimum Detected</b> | <b>Maximum Detected</b> | <b>EPA Standard: MCL or TT</b> | <b>EPA Standard: MCLG</b> | <b>Sources of Contaminant</b>            |
|--|-------------------------|-------------------------|--------------------------------|---------------------------|--|
| Haloacetic acids (ppb) running annual average at any one site      | 23.3                    | 34.3                    | 60                             | N/A                       | Byproduct of drinking water disinfection |
| Haloacetic acids (ppb) range of single results at all sites        | 17                      | 43                      | N/A                            | N/A                       | Byproduct of drinking water disinfection |
| Total trihalomethanes (ppb) running annual average at any one site | 22.1                    | 30.8                    | 80                             | N/A                       | Byproduct of drinking water disinfection |
| Total trihalomethanes (ppb) range of single results at all sites   | 17.3                    | 45.4                    | N/A                            | N/A                       | Byproduct of drinking water disinfection |



**Data table of unregulated contaminants detected in Portland’s treated water**

| <b>Unregulated Contaminant</b> | <b>Minimum Detected</b> | <b>Average Detected</b> | <b>Maximum Detected</b> | <b>Sources of Contaminant</b> |
|--------------------------------|-------------------------|-------------------------|-------------------------|-------------------------------|
| Radon (pCi/L)                  | <50                     | 140                     | 280                     | Found in natural deposits     |
| Sodium (ppm)                   | 3.2                     | 8.1                     | 13                      | Found in natural deposits     |

[The Portland Water Bureau publishes reports with more details three times a year:](#)

[portlandoregon.gov/water/triannual](http://portlandoregon.gov/water/triannual).

## About These Contaminants

### Arsenic, barium, and fluoride

These metals are elements found in the earth's crust. They can dissolve into water that is in contact with natural deposits. At the levels found in Portland's drinking water, they are unlikely to lead to negative health effects.

### Fecal coliform bacteria

As part of Portland's compliance with the filtration avoidance criteria of the Surface Water Treatment Rule, water is tested for fecal coliform bacteria before disinfectant is added. The presence of fecal coliform bacteria in source water indicates that water may be contaminated with animal wastes. This is measured in percent of samples with more than 20 colonies in 100 milliliters of water during any six-month period. The Portland Water Bureau uses chlorine to control these bacteria.

### Giardia

Wildlife in the watershed may be hosts to *Giardia*, a microorganism that can cause gastrointestinal illness. The treatment technique is to remove 99.9 percent of *Giardia* cysts. The Portland Water Bureau uses chlorine to control *Giardia*.

## **Haloacetic acids and total trihalomethanes**

Disinfection byproducts form when chlorine interacts with naturally occurring organic material in the water. High levels of disinfection byproducts can cause health problems in people. Portland adds ammonia to form a more stable disinfectant, which helps minimize disinfection byproducts.

## **Nitrate – Nitrogen**

Nitrate, measured as nitrogen, can lead to bacterial and algal growth in the water. At levels that exceed the standard, nitrate can contribute to health problems. At the levels found in Portland's drinking water, nitrate is unlikely to lead to negative health effects.

## **Radon**

Radon is a naturally occurring radioactive gas that cannot be seen, tasted, or smelled. Radon can be detected at very low levels in the Bull Run water supply and at varying levels in Portland's groundwater supply. Based on the historical levels of radon in groundwater combined with the limited amount of groundwater used, people in Portland are unlikely to have negative health effects from radon in water. Find more information about [radon from the EPA at epa.gov/radon](#).

## **Sodium**

There is currently no drinking water standard for sodium. At the levels found in drinking water, it is unlikely to lead to negative health effects.

## **Total chlorine residual**

Total chlorine residual is a measure of free chlorine and combined chlorine and ammonia in Portland's distribution system. Chlorine residual is a low level of chlorine remaining in the water and is meant to maintain disinfection through the entire distribution system.

## **Total coliform bacteria**

Coliforms are bacteria that are naturally present in the environment. Coliform bacteria usually do not make people sick. They are used as an indicator that other potentially harmful bacteria may be present. If more than 5 percent of samples in a month are positive for total coliforms, an investigation must be conducted to identify and correct any possible causes. The Portland Water Bureau uses chlorine to control these bacteria.

## **Turbidity**

Turbidity is the cloudiness of a water sample. In Portland's system, increased turbidity usually comes from large storms, which suspend organic material in Bull Run water. Increased turbidity can interfere with disinfection and provide an environment for microorganisms to grow. Since the Portland

Water Bureau does not yet filter Bull Run water, the treatment technique is that turbidity cannot exceed 5 NTU more than two times in 12 months.

When turbidity rises in the Bull Run source, Portland switches to its Columbia South Shore Well Field source.

## Monitoring for *Cryptosporidium*

Drinking water treatment for *Cryptosporidium*, a potentially disease-causing microorganism, is required by state and federal regulations. For five years, the Oregon Health Authority (OHA) did not require the Portland Water Bureau to treat for *Cryptosporidium* based on data showing that *Cryptosporidium* was rarely found in the Bull Run Watershed. Since 2017, test results have shown low-level detections of *Cryptosporidium* during the rainy season. As a result, OHA determined that treatment is now necessary. Portland has made several decisions about how to treat for *Cryptosporidium*, including choosing filtration as the treatment method and deciding on the location of the future treatment plant. The Portland Water Bureau is on track to have the filtration plant built and running by 2027. Learn more on page 28.

The Portland Water Bureau does not currently treat for *Cryptosporidium*, but is required to do so under drinking water regulations. Portland is working to install filtration by 2027 under a compliance schedule with OHA. In the meantime, the Portland Water Bureau is implementing interim measures

such as watershed protection and additional monitoring to protect public health. Consultation with public health officials continues to conclude that the general public does not need to take any additional precautions.

Exposure to *Cryptosporidium* can cause cryptosporidiosis, a serious illness. Symptoms can include diarrhea, vomiting, fever, and stomach pain. People with healthy immune systems recover without medical treatment. According to the Centers for Disease Control and Prevention (CDC), people with severely weakened immune systems are at risk for more serious disease. Symptoms may be more severe and could lead to serious life-threatening illness. Examples of people with weakened immune systems include those with AIDS, those with inherited diseases that affect the immune system, and cancer and transplant patients who are taking certain immunosuppressive drugs.

The Environmental Protection Agency has estimated that a small percentage of the population could experience gastrointestinal illness from *Cryptosporidium* and advises that customers who are immunocompromised and receive their drinking water from the Bull Run Watershed consult with their health care professional about the safety of drinking the tap water.

## 2019 Results of *Cryptosporidium* Monitoring at the Raw Water Intake

| Total number of samples tested | Total number of samples positive for <i>Cryptosporidium</i> | Minimum concentration detected (oocysts/L) | Maximum concentration detected (oocysts/L) |
|--------------------------------|---|--|--|
| 179                            | 41  | Not detected                               | 0.06                                       |

[More information about \*Cryptosporidium\*:  
portlandoregon.gov/water/crypto](http://portlandoregon.gov/water/crypto)

## Special Notice for Immunocompromised Persons

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. Environmental Protection Agency (EPA)/ Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at **800-426-4791**.

## **Bull Run Treatment Projects – Our water: Safe and abundant for generations to come.**

### **By 2022: Improved Corrosion Control Treatment**

This summer, the Portland Water Bureau will break ground on a new facility designed to further reduce the amount of lead and other metals that can get into drinking water. Lead enters drinking water from home plumbing; learn more on page 29. Here's how treatment of the Bull Run supply will work in 2022:

- Since 1895, clean and safe water has started with the highly protected Bull Run Watershed.
- Since 1929, water has been disinfected to control microorganisms that can make people sick.
- Since 1998, the pH of the water has been raised to reduce levels of lead in water at the tap. **By 2022, Portland will install Improved Corrosion Control Treatment**, which will adjust the pH and alkalinity in order to lower the levels of lead even more.

### **By 2027: A new Bull Run filtration facility**

By 2027, the Portland Water Bureau will provide safe, reliable water with a new filtration facility that will:

- Make Portland's water safer by removing *Cryptosporidium* and other contaminants
- Provide consistent, high-quality drinking water
- Make the Bull Run water supply more reliable
- Prepare the Portland Water Bureau to respond to future regulations

The Bull Run Watershed will remain highly protected. Filtration will remove *Cryptosporidium* and other potential contaminants. Disinfection will control microorganisms. Corrosion control treatment will continue to lower lead levels at the tap.

[More information about Bull Run Treatment Projects:  
portlandoregon.gov/BullRunTreatment](https://portlandoregon.gov/BullRunTreatment)

## Reducing Exposure to Lead

The Portland Water Bureau cares about the health of the families in our community and is committed to helping you. If present, lead at elevated levels can cause serious health problems, especially for pregnant people and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Portland Water Bureau is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components in homes or buildings. Lead is rarely found in Portland's source waters and there are no known lead service lines in the water system. In Portland, lead

enters drinking water from the corrosion (wearing away) of household plumbing materials containing lead. These materials include lead-based solder used to join copper pipe — commonly used in homes built or plumbed between 1970 and 1985 — and brass components and faucets installed before 2014.

When your water has been sitting for several hours, such as overnight or while you are away at work or school, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you can request a free lead-in-water test from the LeadLine. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from:

- **LeadLine: 503-988-4000** or the [LeadLine webpage \(leadline.org\)](https://www.leadline.org)
- **Safe Drinking Water Hotline: 800-426-4791** or the [EPA's lead webpage epa.gov/safewater/lead](https://www.epa.gov/safewater/lead).

In Portland, the most common sources of lead exposure are lead-based paint, household dust, soil, and plumbing materials. Lead is also found in other household objects such as toys, cosmetics, pottery, and antique furniture.

## Protecting Public Health

The Portland Water Bureau's Lead Hazard Reduction Program takes a comprehensive approach to reducing exposure to lead. Through this program, the Portland Water Bureau provides the following:

- **Corrosion Control Treatment** This treatment reduces corrosion of lead in plumbing by adding sodium hydroxide to the water, which increases the pH. To further reduce corrosion, Portland has begun the process of improving corrosion control treatment by 2022. Learn more on page 28.
- **Lead-in-Water Testing** Anyone in the service area can test their water for lead for free through the Portland Water Bureau. The Portland Water Bureau targets outreach to households most at risk from lead in water (houses built between 1970 and 1985).
- **Education, Outreach, and Testing** Agencies and organizations receive grant funds to help people reduce their exposure to all sources of lead.
- **Home Lead Hazard Reduction** The Portland Housing Bureau's Lead Hazard Control Program, through support from the Portland Water Bureau, removes lead paint hazards in homes.

## **Routine Testing at Homes with Higher Risk of Lead in Water**

The Portland Water Bureau offers free lead-in-water tests to anyone in the service area. Twice each year, the Portland Water Bureau also collects water samples from a group of over 100 homes that have lead solder and are more likely to have higher levels of lead in water. Testing results exceed the federal action level for lead when more than 10 percent of results from these homes are above 15 parts per billion. In the most recent round of testing, less than 10 percent of homes exceeded the lead action level.

## **Definitions and acronyms used in the following data table of lead and copper results**

### **90th Percentile:**

90 percent of the sample results were less than the values shown.

### **Action Level:**

The concentration of a contaminant which, if exceeded, triggers treatment or requirements of which a water system must follow.

### **MCLG: Maximum Contaminant Level Goal.**

The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**ppm:** parts per million.

Water providers use ppm to describe a small amount of a substance within the water. In time measurement, one part per million is about 32 seconds out of one year.

**ppb:** parts per billion.

Water providers use ppb to describe a very small amount of a substance within the water. In time measurement, one part per billion is about 3 seconds out of 100 years.



**Data table of lead and copper results from high-risk residential water taps**

| <b>Regulated Contaminant</b> | <b>Fall 2019 90<sup>th</sup> percentile results</b> | <b>Homes Exceeding Action Level</b> | <b>EPA Standard: Action Level</b> | <b>EPA Standard: MCLG</b> | <b>Sources of Contaminant</b>                                   |
|------------------------------|---|-------------------------------------|-----------------------------------|---------------------------|---|
| Lead (ppb)                   | 11.6  | 6 out of 105<br>(5.7%)              | 15                                | 0                         | Corrosion of household and commercial building plumbing systems |
| Copper (ppm)                 | 0.216   | 0 out of 105<br>(0%)                | 1.3                               | 1.3                       | Corrosion of household and commercial building plumbing systems |

## **Home Plumbing Can Add Lead to Your Drinking Water**

### **Lead Free:**

- **Water Main:** Portland Water Bureau never used lead pipes in water mains.
- **Lead Pigtails:** Used prior to WWII. All known pigtails removed by 1998.
- **Service Lines:** Portland Water Bureau never used lead pipes for service lines.
- **Water Meter:** Portland Water Bureau has used lead-free meters since 1986. As a result, over 95% of homes have a lead-free meter.

### **May Contain Lead:**

- **Faucets and Fixtures:** Faucets installed before 2014 could contain leaded brass.
- **Lead Solder:** Lead solder was commonly used to join copper pipe before 1985.

### **Reduce your exposure to all sources of lead.**

**Contact the [LeadLine: leadline.org](https://www.leadline.org) or 503-988-4000**

- Free lead-in-water testing
- Free blood lead testing for children
- Free lead reduction services

## Easy Steps to Reduce Possible Exposure to Lead from Household Plumbing

- **Run your water to flush the lead out.** If no one has used your water in several hours, run the tap for 30 seconds to 2 minutes or until the water becomes colder before using the water for drinking or cooking. Running the tap flushes water that could contain lead.
- **Use cold, fresh water for cooking, drinking, and preparing baby formula.** Lead dissolves more easily into hot water. Do not use water from the hot water tap for cooking, drinking, or to make baby formula.
- **Do not boil water to remove lead.** Boiling water will not reduce lead.
- **Test your child for lead.** Ask your doctor or contact the **LeadLine** to find out how to have your child tested for lead. A blood lead level test is the only way to know if your child is being exposed to lead.
- **Test your water for lead.** Contact the **LeadLine** to find out how to get a FREE lead-in-water test.
- **Consider using a filter.** Check to make sure it reduces lead —not all filters do. To protect your water quality, follow the manufacturer’s instructions for maintaining and replacing your filter. To find out more about [water filter performance standards: nsf.org](https://www.nsf.org) or 800-NSF-8010.
- **Clean your faucet aerators every few months.** Faucet aerators can trap particles from household plumbing and the particles may contain lead. Every few months, unscrew and rinse your aerators.



- **Consider replacing old fixtures.** Since 2014, all pipes, fittings, and fixtures are required to contain less than 0.25 percent lead.

## **Questions? We're here to help.**

### **Central Information Line**

For general information about projects, programs, and public meetings, call 503-823-7404.

### **Customer Service and Financial Assistance**

[For questions or information about your account or to apply for financial assistance, email PWBCustomerService@portlandoregon.gov](#) or call 503-823-7770.

### **Water Quality Line**

[For questions regarding water quality or water pressure, email WBWaterLine@portlandoregon.gov](#) or call 503-823-7525.

### **Emergency Line**

Hotline for water system emergencies, call 503-823-4874, available 24 hours a day, 7 days a week.

Connect with us:

[Portland Water Bureau homepage: portlandoregon.gov/water](http://portlandoregon.gov/water)

[Portland Water Bureau Facebook: facebook.com/portlandwaterbureau](https://facebook.com/portlandwaterbureau)

[Portland Water Bureau Twitter: @portlandwater](https://twitter.com/portlandwater)



# Portland Water Bureau

## 2020 Drinking Water Quality Report

Page | 38

### Additional Drinking Water Information:

[Oregon Health Authority – Drinking Water Services:](#)

[public.health.oregon.gov/HealthyEnvironments/DrinkingWater/](https://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/) or call  
971-673-0405

Portland Water Bureau's Water System ID: 4100657

[Commissioner Amanda Fritz's Office: Amanda@portlandoregon.gov](mailto:Amanda@portlandoregon.gov)

Contact Yesenia Carrillo: 503-823-3008 (Hablo español)

[Regional Water Providers Consortium \(regionalh2o.org\)](http://regionalh2o.org). The Portland  
Water Bureau is a member.

Contact Information:

Portland Water Bureau

1120 SW 5<sup>th</sup> Avenue/Room 600

Portland, Oregon 97204

[Portland Water Bureau's website: portlandoregon.gov/water](http://portlandoregon.gov/water)

Para obtener una copia del informe de calidad del agua potable en español,  
comuníquese con:

Здесь можно получить копию отчёта о качестве воды на русском языке:



Để có bản sao báo cáo chất lượng nước uống này bằng tiếng Việt, vui lòng liên lạc:

欲索取此饮用水报告的中文版本，请联系：

[Drinking water quality report home page:](#)

[portlandoregon.gov/water/wqreport](http://portlandoregon.gov/water/wqreport) (503) 823-7525

Please contact us for translation or interpretation, or for accommodations for people with disabilities.

More Information · Más información · Дополнительная информация ·

Thêm thông tin · 欲了解更多信息 · Mai multe informații · Macluumaad

dheeri ah · Подробности · Tichikin Poraus · अधिक सूचना

[Request accommodations from the Portland Water Bureau](#)

[portlandoregon.gov/water/access](http://portlandoregon.gov/water/access) 503-823-7525 (Relay Service: 711)

[Copies of this report and past reports are available at](#)

[portlandoregon.gov/water/wqreport](http://portlandoregon.gov/water/wqreport).

Printed June 2020