

2024

# WATER QUALITY REPORT



PALATINE HILL WATER DISTRICT

1/1/2024



## Palatine Hill Water District 2024 Drinking Water Quality Report

### About this report

Each year the Palatine Hill Water District provides this Drinking Water Quality Report to all of its customers. This report is required by the State and the EPA and contains important information about the Palatine Hill and Portland's drinking water and water system. The following 2024 Drinking Water Quality Report contains results of all the regulated contaminants the bureau detected in drinking water in 2023.

The contaminants reported in this report are just part of the over 200 regulated and unregulated contaminants that Palatine Hill and Portland tests for in our drinking water. Additional results are available on our Drinking Water Test Results page: [portland.gov/water/TestResults](https://portland.gov/water/TestResults).

### Palatine'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 US Forest Service carefully manage the watershed to sustain and supply clean drinking water for nearly one million people. 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. More information about the Bull Run: [portland.gov/water/BullRun](https://portland.gov/water/BullRun).

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 September 2027.

Portland's source water assessment is available online at [portland.gov/water/SWA](https://portland.gov/water/SWA) 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. More information about groundwater: [portland.gov/water/groundwater](https://portland.gov/water/groundwater).

## Drinking water treatment

Portland treats our drinking water to keep our community safe. 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 carbonate and carbon dioxide** are added to Bull Run water and **sodium hydroxide** is added to groundwater to reduce the corrosion of metals such as lead.

**Portland is in the process of changing our Bull Run treatment by 2027.** Portland does not currently filter the Bull Run drinking water. In response to a series of low-level detections of *Cryptosporidium* in Bull Run water in 2017, Portland is installing a filtration plant to treat for *Cryptosporidium*. Bull Run water will be filtered by September 2027.

## Frequently asked questions about water quality

### Has Portland tested its drinking water for PFAS?

Yes, and fortunately PFAS have not been detected in drinking water from either of our water sources. PFAS — perfluoroalkyl and polyfluoroalkyl substances — are a group of chemicals that are a growing concern for consumers and water providers across the country. Portland shares this concern and is taking steps to protect and monitor our drinking water for PFAS. More information: [portland.gov/water/PFAS](https://portland.gov/water/PFAS).

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

Bull Run water—Portland's main water supply—is soft. It typically has a total hardness of 7-11 parts per million (ppm), or approximately ½ 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 8.0 and 9.0.



## Does Portland 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.

## How can I get my water tested?

For free lead-in-water testing, residents and child care providers can order a kit at [portland.gov/water/LeadTest](https://portland.gov/water/LeadTest) or by calling **503-823-7525**. For other testing, you can pay a private, accredited laboratory to test your tap water. For information about accredited labs in Oregon, 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?

Sediment and organic material from the Bull Run Watershed settle at the bottom of water mains. These can sometimes be stirred up during hydrant use or a main break. They can also be seen in the fall as a harmless tea-colored tint. Discolored water can also be caused by older pipes in buildings that add rust to the water. More information: [portland.gov/water/DiscoloredWater](https://portland.gov/water/DiscoloredWater)

## How should property managers maintain water quality in large buildings?

Managers of large buildings should implement a water management program to protect their water quality and address the risk of *Legionella* growth. This is especially important for healthcare facilities and residential buildings for people 65 or older. More information: [portland.gov/water/WQBuilding](https://portland.gov/water/WQBuilding)

## 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) prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Contaminants that may be present in source water 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.gov/safewater](https://www.epa.gov/safewater).

## Contaminants Detected in 2023

### Definitions of acronyms used in data tables

- **CFU: colony forming units.** A unit used to estimate the number of live bacteria in a water sample.
- **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.
- **MPN: most probable number.** A statistical method used to estimate the concentration of bacteria in a water sample.
- **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, or the MCL or MCLG does not apply to that result.
- **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 terms of time, 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 terms of time, one part per billion is about 3 seconds out of one hundred years.
- **pCi/L: picocuries per liter.** Picocurie is a measurement of radioactivity.
- **Regulated contaminant.** A substance in drinking water that has a limit set by the EPA based on health risk or aesthetic characteristics.
- **TT: treatment technique.** A required process intended to reduce the level of a contaminant in drinking water.
- **Unregulated contaminant.** A substance in drinking water that does not have a limit set by the EPA but may have one set in the future.



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

Regulated contaminant	Levels detected in Portland's water	EPA limit: MCL or TT	EPA goal: MCLG	Sources of contaminant
Turbidity (NTU)	0.23 – 3.69	5	N/A	Erosion of natural deposits
Fecal coliform bacteria % samples more than 20 CFU/100 milliliters in 6 months	0%	No more than 10% of samples in 6 months can have more than 20 CFU/100 milliliters of water.	N/A	Animal wastes
Fecal coliform bacteria (CFU/100 milliliters) Range of single results	0 – 11	N/A	N/A	Animal wastes
Total coliform bacteria % samples more than 100 MPN/100 milliliters in 6 months	0.5%	No more than 10% of samples in 6 months can have more than 100 MPN/100 milliliters of water.	N/A	Found throughout the environment
Total coliform bacteria (MPN/100 milliliters) Range of single results	79.8 – 387.3	N/A	N/A	Found throughout the environment
<i>Giardia</i> (#/liter)	0 - 0.08	TT	N/A	Animal wastes

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

Regulated contaminant	Levels detected in Portland's water	EPA limit: MCL	EPA goal: MCLG	Sources of contaminant
Arsenic (ppb)	<0.50 – 0.90	10	0	Found in natural deposits
Barium (ppm)	0.00082 - 0.01000	2	2	Found in natural deposits
Fluoride (ppm)	<0.025 - 0.13	4	4	Found in natural deposits
Nitrate (as nitrogen) (ppm)	0.02 – 0.11	10	10	Found in natural aquifer deposits, animal wastes

**Data table of regulated microbial contaminants detected in Palatine Hill Water District's treated water in the distribution system**

Regulated contaminant	Levels detected in Palatine Hill's water	EPA limit: TT	EPA goal: MCLG	Sources of contaminant
Total coliform bacteria (% positive per month)	0%	TT	N/A	Found throughout the environment

**Data table of regulated disinfection residuals and byproducts detected in Palatine's treated water in the distribution system**

Regulated contaminant	Levels detected in Palatine's water	EPA limit: MCL	EPA goal: MCLG	Sources of contaminant
Total chlorine (ppm) running annual average	0.14-2.50	4 [MRDL]	4 [MRDLG]	Chlorine used to disinfect water
Total chlorine (ppm) range of single results at all sites	0.14-2.50	N/A	N/A	Chlorine used to disinfect water



Regulated contaminant	Levels detected in Palatine’s water	EPA limit: MCL	EPA goal: MCLG	Sources of contaminant
Haloacetic acids (ppb) running annual average at any one site	19.4	60	N/A	Byproduct of drinking water disinfection
Haloacetic acids (ppb) range of single results at all sites	19.4	N/A	N/A	Byproduct of drinking water disinfection
Total trihalomethanes (ppb) running annual average at any one site	27.4	80	N/A	Byproduct of drinking water disinfection
Total trihalomethanes (ppb) range of single results at all sites	27.4	N/A	N/A	Byproduct of drinking water disinfection

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

Unregulated contaminant	Levels detected in Portland’s water	Average level detected in Portland’s water	Sources of contaminant
Manganese (ppb)	2.5-33.7	15.8	Found in natural deposits
Radon (pCi/L)	<12 - 333	167	Found in natural deposits
Sodium (ppm)	11 - 12	11.5	Found in natural deposits

*Cryptosporidium* data and lead data are listed below. Looking for additional data, such as pH, hardness, or PFAS? Find it at: [portland.gov/water/TestResults](http://portland.gov/water/TestResults).

**About These Contaminants**

**Arsenic, barium, fluoride, and manganese**

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 result in negative health effects.

**Fecal coliform bacteria**

Fecal waste from wildlife in the watershed is the source of fecal coliform bacteria, a microorganism that can cause gastrointestinal illness. Portland is required to test for fecal coliform bacteria before disinfectant is added. After testing our untreated water for fecal coliform bacteria, Portland treats its water with 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. After testing our untreated water for *Giardia*, Portland treats its water with chlorine to control these organisms.

**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 the water to form a more stable disinfectant, which helps minimize disinfection byproducts.

## **Nitrate (as 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 result in 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. At the levels found in Portland's drinking water, radon in water is unlikely to result in negative health effects. Find more information about radon from the EPA at [epa.gov/radon](https://www.epa.gov/radon).

## **Sodium**

There is currently no drinking water standard for sodium. At the levels found in Portland's drinking water, sodium is unlikely to result in negative health effects.

## **Total chlorine**

Total chlorine is a measure of free chlorine and combined chlorine and ammonia in the water distribution system. Low levels of chlorine remaining in the water are necessary to keep Portland's drinking water safe from bacteria and other microorganisms. At the levels found in Portland's drinking water, chlorine is unlikely to result in negative health effects.

## **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. Portland tests for coliform bacteria in both untreated source water and treated water in the distribution system. After testing the untreated water for coliform bacteria, Portland treats its water with chlorine to control these bacteria. If these bacteria are found in more than 5 percent of distribution system samples in a month, the treatment technique requires an investigation to identify and correct any possible causes.

## **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 Portland does not yet filter Bull Run water, we are required to test for turbidity and the treatment technique limit 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*

*Cryptosporidium* is a potentially disease-causing microorganism that lives in virtually all freshwater ecosystems. Drinking water treatment for *Cryptosporidium* 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. In 2017, after the start of low-level *Cryptosporidium* detections, OHA determined that treatment is now necessary. Detections of *Cryptosporidium* from the Bull Run have continued, primarily during the rainy season.

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 September 30, 2027 under a compliance schedule with the OHA. In the meantime, 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 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.

Total number of samples tested	Total number of samples positive for <i>Cryptosporidium</i>	Levels detected in Portland’s water (oocysts/liter)
217	59	Not detected – 0.2

More information: [portland.gov/water/crypto](http://portland.gov/water/crypto)

### Notice for Immunocompromised Special 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**.

## Reducing exposure to lead

### What to know about lead

The Portland Water Bureau cares about the health of the families in our community and is committed to helping you reduce your exposure to lead. If present, elevated levels of lead 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. Portland treats its water to reduce lead levels at the tap. Sodium carbonate and carbon dioxide are added to Bull Run water to increase the pH and alkalinity and sodium hydroxide is added to groundwater to increase the pH, which protects our water from lead in plumbing materials.

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 painted antique furniture, barro pottery, cultural cosmetics (sindoor, kumkum, tikka, roli, and kohl), and turmeric purchased overseas. Find more information about all sources of lead at the **LeadLine: [leadline.org](https://leadline.org)** or **503-988-4000**.

### What you can do

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 at [portland.gov/water/LeadTest](https://portland.gov/water/LeadTest) or call 503-823-7525. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from EPA's Safe Drinking Water Hotline: **800-426-4791** or **[epa.gov/SafeWater/lead](https://epa.gov/SafeWater/lead)**.

### Additional steps to reduce exposure to lead from plumbing

- Run your water to flush any lead out.
- Use cold, fresh water for cooking, drinking, and preparing baby formula.



- Do not boil water to remove lead.
- Test your child's blood for lead.
- Test your water for lead.
- Consider using a filter certified to remove lead.
- Clean your faucet aerators every few months.
- Consider replacing faucets or fixtures installed before 2014.

## Lead and copper test results from homes with higher risk of lead in water

The Portland Water Bureau offers free lead-in-water tests to anyone in the service area. Every 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 from 2023 were below the EPA action level.

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

Regulated contaminant	Fall 2023 90th percentile results	Homes exceeding action level	EPA limit: action level	EPA goal: MCLG	Sources of contamination
Lead (ppb)	7.7	3 out of 113 (2.6%)	15	0	Corrosion of household and commercial building plumbing systems
Copper (ppm)	0.168	0 out of 113 (0%)	1.3	1.3	Corrosion of household and commercial building plumbing systems

- **90th percentile:** 90 percent of the samples results were less than the values shown.
- **Action level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **ppm: parts per million.** Water providers use ppm to describe a small amount of a substance within the water. In terms of time, 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 terms of time, one part per billion is about 3 seconds out of one hundred years.

## Message From Palatine Hill Water District Board of Commissioners

The Palatine Hill Water District Board of Commissioners is pleased to share the 2024 Drinking Water Quality Report with you. Palatine Hill Water District works diligently to protect and preserve this essential resource and enhance the system that delivers water to your home or business. We urge you to take a minute to look through this report and learn about your water system and what goes into delivering water to your tap. If you have any questions or comments about this, please call Palatine Hill Water District at 503-639-5096 or visit [www.palatinehillwaterdistrict.com](http://www.palatinehillwaterdistrict.com).

Maya Klein  
Chairman