

Drinking Water Quality Report



2020

CITY OF GRESHAM, OREGON GOING BEYOND

What is the cost of water versus the value of water?

What is the cost of water? There are several ways to answer this question. A 12-ounce glass of bottled water purchased from a retail store costs approximately \$0.46. If purchased from a water delivery service, the price drops to approximately \$0.10. And, if purchased from the City of Gresham the cost goes down to \$ 0.0003 (based on the current City rate of \$2.77 per unit with no water service charge). As you can see the water purchased from Gresham is far less expensive. Did you know it is also quality-tested and monitored to a greater extent than any bottled water on the market?

Looking ahead, Gresham has a big decision to make about the source of its water. The City purchases most of its water from the City of Portland and adds groundwater into the mix from Gresham wells during times of high demand. The City is exploring further developing Gresham's own groundwater supply to rely less on, or completely stop, buying water from Portland.

Why? Buying water will be more expensive in the future because Portland is required by the federal government to build a new water treatment plant costing up to \$1.2 billion. Gresham is looking at all available options to reduce future costs. Currently there are three options that are being considered.

1. Continue to purchase water from the City of Portland Bull Run supply, which the City has been doing since 1916. The estimated cost of Gresham's share of Portland's treatment plant, to be shared by ratepayers, is \$100 million.
2. The second option that Gresham is considering is to partner with Rockwood Water People's Utility District to develop groundwater wells to become water independent

from Portland by 2026. The cost to develop groundwater is approximately \$56 million.

3. A third option is a combined approach in which Gresham develops some groundwater wells in conjunction with purchasing less water from Portland.

In all three options, rates need to increase over time to pay for these infrastructure upgrades. We will do everything we can to control costs long-term, whether it is negotiating a more favorable contract with Portland or pursuing financing options to help offset the costs of constructing our own groundwater system. The City is also exploring improvements to its billing assistance program. The City's deadline to make a decision is June 2021. Stay informed and sign up for periodic email updates at GreshamOregon.gov/Water-Supply.

Stepping back from cost, what is the value of water? Water is essential for life, and safe drinking water supplies have allowed human civilization to advance to its current level. Safe water piped directly to our homes allows us to hydrate, cook, bathe and wash dishes and laundry. Clean water in streams allows fish and other wildlife to survive. If you factor in all the these uses and needs, the value of water is priceless.

City of Gresham staff will continue to provide customers with safe drinking water for years to come.

Andrew C. Degner
Water Resources Operations Manager
City of Gresham
503-618-2525

Emergency Preparedness

People can survive for weeks without food, but only a few days without water. Following a disaster, clean drinking water may not be available. Prepare yourself by building a supply of water that will meet your family's needs during an emergency. Store a minimum of one gallon per person for three days, for drinking, cooking and sanitation. Try to store a two-week supply if possible, and don't forget your pets!

The City of Gresham will be distributing three-gallon water bottles to residents from 10 a.m.–3 p.m. during the CityFest event at Gresham City Hall in September 2020. For more information visit GreshamOregon.gov/CityFest



Drinking Water Sources

The Bull Run Watershed

is Gresham's primary source of drinking water, located 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 from drinking water by 2027.

Portland's source water assessment is available at portlandoregon.gov/water/sourcewaterassessment or by calling 503-823-7525.

The Columbia South Shore Well Field

provides drinking water from 25 active wells located in three different aquifers. The well field is between the 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 Program staff 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.

The Cascade Well Field

is jointly owned and operated by Gresham and Rockwood Water People's Utility District. The wells are primarily used during the summer months to supplement our supply from Portland. This groundwater is from the Sand and Gravel Aquifer, located approximately 600 feet below the surface. Access to groundwater helps Gresham to manage both water expenses and water quality. The City works with Gresham and Fairview businesses to protect this important investment. For more information about the Cascade Well Field or our Groundwater Protection Program, visit GreshamOregon.gov/Well-Field-Protection-Program or contact the City at 503-618-2525.



Map provided by Regional Water Providers Consortium.



The City of Gresham

is a member of the Regional Water Providers Consortium.

The Consortium provides leadership in the planning, management, stewardship and resiliency of drinking water in

the Portland metropolitan region. Let the Consortium take the guesswork out of deciding how much water your landscape needs this summer by signing up for the Weekly Watering Number. Each week, between April and September, they will send you a zip-code-specific watering number, along with tips to help you use water efficiently. Visit www.regionalh2o.org/weekly-watering-number to sign up and learn more.



Learn More

You'll find information about these topics and more at GreshamOregon.gov/Water-Resources

- Emergency resilience
- FREE testing for lead
- Groundwater protection
- Toilet rebates
- Utility billing and rates
- Water conservation
- Water quality

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Gresham, OR 97030
503-618-2525
GreshamOregon.gov/Water-Resources
Gresham Public Water System #4100357

Oregon
Health
Authority

Oregon Health Authority
Drinking Water Program
971-673-0405
oregon.gov/oha/ph/healthyenvironments/drinkingwater

Monitoring for Unregulated Substances

Every five years, the EPA requires the City of Gresham and other water utilities across the country to test their water for contaminants that do not have a federal standard or limit, 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 City of Gresham tested its water for the following unregulated contaminants: 10 cyanotoxins; 2 metals; 5 disinfection byproducts and precursors; 9 pesticides and pesticide byproducts; 3 alcohols; and 3 semivolatile chemicals. Of these contaminants, only manganese and disinfection byproducts were detected in Gresham's water.

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 Gresham'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 Gresham's water, these are unlikely to lead to negative health effects.

Contaminant	Detected in Gresham's Water			Sources of Contaminant
	Minimum	Average	Maximum	
Metals				
Manganese (ppm)	0.023	0.094	0.21	Found in natural deposits
Disinfection Byproducts				
Haloacetic Acids-5 (ppb)	15	29.97	46	Byproduct of drinking water disinfection
Haloacetic Acids-6Br (ppb)	0.34	0.81472	1.2	
Haloacetic Acids-9 (ppb)	16	30.94	47	

Special Notice to Immuno-Compromised People

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people such as those with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, 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, Centers for Disease Control 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. See page 9 for more information on *Cryptosporidium*.**

Translation

Do you need this document translated into another language? Please call **503-618-2525**.

Por información en Español, llame al **503-618-2525**.

Для получения копии этого отчета на русском языке позвоните по указанному ниже номеру **503-618-2525**.

Public Participation

Interested in opportunities for public participation?

Please visit GreshamOregon.gov/Council-Meetings

GreshamOregon.gov/Council-Citizen-Advisory-Committees

Untreated Source Water from the Bull Run Watershed

Regulated Contaminant	Minimum Detected	Maximum Detected	Maximum Contaminant Level (MCL), Treatment Technique (TT) or Maximum Residual Disinfectant Level (MRDL)	Maximum Contaminant Level Goal (MCLG) or Maximum Residual Disinfectant Level Goal (MRDLG)	Sources of Contaminant
Turbidity (NTU)	0.19	1.32	5	N/A	Erosion of natural deposits
Fecal Coliform Bacteria (% > 20 colonies/100mL for 6 months)	Not Detected	0%	10%	N/A	Animal wastes
Giardia (#/1L)	Not Detected	0.08	TT	N/A	Animal wastes

Treated Drinking Water from Bull Run Watershed and the Columbia South Shore Well Field and Cascade Well Field Entry Points to Distribution System

Regulated Contaminant	Minimum Detected	Maximum Detected	Maximum Level (MCL)(MRDL)	Maximum Level (MCLG)(MRDLG)	Sources of Contaminant
Arsenic (ppb)	<0.50	1.09	10	0	Found in natural deposits
Barium (ppm)	0.00082	0.015	2	2	
Fluoride (ppm)	<0.025	0.140	4	4	
Nitrate Nitrogen (ppm)	<0.010	0.054	10	10	Natural aquifer deposits; Animal wastes
Unregulated Contaminant	Minimum Detected	Average Detected	Maximum Detected		
Radon (pCi/L)	<50	140	280		Found in natural deposits
Sodium (ppm)	3.2	8.1	14		

Treated Drinking Water from Points Throughout the Distribution System of Reservoirs, Tanks and Mains

Haloacetic Acids (1 Site / ppb)	16.7	40.2	60	N/A	Byproduct of drinking water disinfection
Locational Running Annual Average (All Sites / ppb)	33				
Total Trihalomethanes (1 Site / ppb)	22.2	49.3	80	N/A	Byproduct of drinking water disinfection
Locational Running Annual Average (All Sites / ppb)	26				
Total Chlorine Residual (ppb)	0.01	2.28	4	4	Chlorine/ammonia disinfection



Definitions

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.

Maximum Contaminant Level or MCL - 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.

Maximum Contaminant Level Goal or MCLG - 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.

Maximum Residual Disinfectant Level or MRDL - 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.

Maximum Residual Disinfectant Level Goal or MRDLG - 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.

Nephelometric Turbidity Units or NTU - The unit of measurement of turbidity or cloudiness in water as measured by the amount of light passing through a sample.

Part per Million (ppm) - One part per million corresponds to one penny in \$10,000 or approximately one minute in two years. One part per million is equal to 1,000 parts per billion.

Part Per Billion (ppb) - One part per billion corresponds to one penny in \$10,000,000 or approximately one minute in 2,000 years.

Picocuries Per Liter (pCi/L) - Measurement of radioactivity. One picocurie is one trillion times smaller than one curie.

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

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to help EPA determine their occurrence in drinking water and potential need for future regulation.

Notes On Contaminants

Arsenic, Barium, Fluoride and Vanadium – 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 Gresham's drinking water, they are unlikely to contribute to adverse health effects.

Disinfection Byproducts – During disinfection, certain byproducts form as a result of chemical reactions between chlorine and naturally occurring organic matter in the water. These byproducts can have negative health effects. Trihalomethanes and haloacetic acids are regulated disinfection byproducts that have been detected in Gresham's water. Adding ammonia to chlorine results in a more stable disinfectant and helps to minimize the formation of disinfection byproducts.

Fecal Coliform Bacteria – The presence of fecal coliform bacteria in source water indicates that water may be contaminated with animal wastes. The Portland Water Bureau uses chlorine to kill these bacteria.

Giardia – Wildlife in the watershed may be hosts to Giardia, the organism that causes giardiasis. The Portland Water Bureau uses chlorine to control these organisms.

Lead and Copper – There is no maximum contaminant level (MCL) for lead or copper at the entry point to the distribution system. The main source of lead and copper is the corrosion of building plumbing. Lead and copper are tested at customers' taps where levels are the highest. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. For more information, see Reducing Exposure to Lead on page 10.

Nitrate / Nitrogen – Nitrate, measured as nitrogen, can support microbial growth (bacteria and algae). Nitrate levels exceeding the standards can contribute to health problems. At the levels found in Gresham's drinking water, nitrate is unlikely to contribute to adverse 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, radon is unlikely to contribute to adverse health effects. For information about radon, visit www.epa.gov/radon or call the EPA's Radon Hotline at 800-SOS-RADON.

Sodium – There is currently no drinking water standard for sodium. Sodium is an essential nutrient. At the levels found in drinking water, it is unlikely to contribute to adverse health effects.

Total Chlorine Residual – Total chlorine residual is a measure of free chlorine and combined chlorine and ammonia in our distribution system. Chlorine residual is a low level of chlorine remaining in water and is designed to maintain disinfection through the entire distribution system.

Total Coliform Bacteria – Coliforms are bacteria that are naturally present in the environment. They are used as an indicator that other potentially-harmful bacteria may be present. The Portland Water Bureau uses chlorine to kill these bacteria.

Turbidity – Turbidity is a measure of the water's clarity. Increased turbidity is typically caused by large storms that suspend organic material in our source water. This can interfere with disinfection and provide an environment for microbial growth. When turbidity rises, Gresham has two groundwater supply options.

What the EPA Says About Contaminants

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 **Environmental Protection Agency's (EPA) Safe Drinking Water Hotline at 800-426-4791 or at www.epa.gov/safewater.**

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.

Contaminants in drinking water sources may include:

- **Microbial contaminants**, such as viruses and bacteria, which may come from wildlife or septic systems.
- **Inorganic contaminants**, such as salts and metals, which can occur naturally or result from urban stormwater runoff, industrial or domestic wastewater discharges, or farming.
- **Pesticides and herbicides**, which may come from a variety of sources, such as farming, urban stormwater runoff, and home or business use.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes, and can also come from gas stations, urban stormwater runoff and septic systems.
- **Radioactive contaminants**, which can occur naturally.

In order to ensure that tap water is safe to drink, the EPA has regulations that limit the amount of certain contaminants in water provided by public water systems and requires 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.

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 (PWB) to treat for *Cryptosporidium* based on data showing that *Cryptosporidium* was rarely found in the Bull Run Watershed. Since 2017, test results have showed low-level detections of *Cryptosporidium*. As a result OHA has determined that treatment is now necessary. Since then, 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 PWB is on track to have the filtration plant built and running by September 2027.



The PWB 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 PWB 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.

For more information, visit portlandoregon.gov/water/crypto

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

Number of Samples		Concentration Detected (oocysts/L)	
Total Tested	Positive for <i>Cryptosporidium</i>	Minimum	Maximum
179	41	Not Detected	0.06

Reducing Exposure to Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. These materials include lead-based solder used to join copper pipe—commonly used in homes built or plumbed between 1970 and 1985—brass components, and faucets.

The City of Gresham is responsible for providing high quality drinking water to more than 70,000 people, but cannot control the variety of materials used in plumbing components. The City removed all known lead service connections from the water distribution system and has never used lead service lines.

When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking.

If you are concerned about lead in your water, the City encourages you to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from

- **Leadline, 503-988-4000, www.leadline.org**
- **Safe Drinking Water Hotline, 1-800-426-4791, www.epa.gov/safewater/lead**

**FREE
LEAD TEST
KITS**

FREE LEAD TEST KITS and steps you can take to minimize exposure are available from **Leadline, 503-988-4000, www.leadline.org**

Routine testing at homes with higher risk of lead in water

The City of Gresham offers free lead-in-water tests to anyone in the service area. Twice each year, the City of Gresham also collects water samples from a group of over 60 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.

Lead and Copper Sampling at High-Risk Residential Taps

Regulated Contaminant	Detected in Residential Water Taps		EPA's Limits		Sources of Contaminants
	Fall 2019 Results ¹	Homes Exceeding Action Level ²	Action Level ²	MCLG ³	
Lead (ppb)	11	5 out of 64 (7.8%)	15	0	Corrosion of household and commercial building plumbing systems
Copper (ppm)	0.265	0 out of 64 (0%)	1.3	1.3	

¹ 90th Percentile: 90 percent of the sample results were less than the values shown.

² Action Level definition: The concentration of a contaminant which, if exceeded, triggers treatment or requirements of which a water system must follow.

³ See page 7 for definitions.



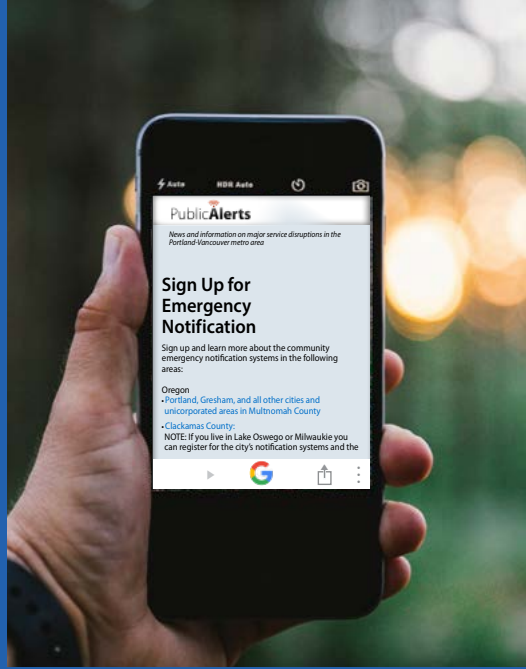
Sign Up For PublicAlerts

PublicAlerts is an emergency notification system that provides residents real-time information when emergencies are happening in their area. You can receive alerts via text message, phone call and/or e-mail when an emergency is happening in an area associated with the addresses in your profile.

When you register for PublicAlerts you will create a profile designating how you wish to receive alerts—via text message, phone call and/or e-mail, and what locations you want alerts for. This allows you to get emergency information quickly that is most relevant to you.

You must register your phone numbers with Public Alerts. Only registered phone numbers will receive emergency notifications.

Register now at **PublicAlerts.org** to receive critical information when an emergency is happening in an area that may affect you.



Here are some examples of emergencies that may activate a PublicAlerts message:

Water main breaks or other service outages | Major landslide | Flooding
Large fire | Public health emergency | Boil water notice
Severe weather event | Hazardous material spill | Police activity

For more information about the City of Gresham's efforts regarding emergency resilience, visit our website at

**GreshamOregon.gov/
Emergency-Management**

