

ANNUAL WATER QUALITY REPORT

Reporting Year 2022



Presented By
City of Mercer Island



Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2022. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users. Please remember that we are always available should you ever have any questions or concerns about your water.

Variations and Exemptions

As a consumer, you are entitled to know what variances and waivers are in force with your water utility. The City of Mercer Island currently has one waiver from DOH, and it concerns asbestos-cement (AC) water main piping. DOH does not require any water supplier to report on systems with less than 10 percent total AC piping. Our waiver simply acknowledges that a very small amount of AC pipe exists in our system. The water distribution system on Mercer Island is composed of 96 percent cast iron, ductile iron, or steel; the remaining 4 percent is AC pipe. AC is an old material that is no longer used in construction, and the small amounts of AC piping in our system pose no threat to drinking water quality. SPU has not detected any naturally occurring asbestos in its watersheds.

“Thousands have lived without love, not one without water.”
—W.H. Auden

Source Water Assessment

Washington’s Source Water Assessment Plan is now available from DOH at <https://fortress.wa.gov/doh/swap>. This plan, conducted by the DOH Office of Drinking Water, is an assessment of the delineated area around listed sources through which contaminants, if present, could migrate and reach our source water. By default, the DOH assigns a susceptibility rating of high for all surface water sources.

Where Does My Water Come From?

The City of Mercer Island receives its surface water supply from Seattle Public Utilities (SPU). Our primary water source is the Cedar River watershed; the Tolt River’s South Fork provides an alternative supply. SPU’s uninhabited watersheds are supplied by the melting snowpack in the Cascade Mountains and supplemented from annual rainfall.

Each watershed is closed to unauthorized access and carefully managed to supply clean, pristine drinking water to more than 1.4 million people in the greater Seattle area. The rainfall and snowmelt collected in the Cedar and Tolt Rivers meets or surpasses all federal standards for drinking water. Water samples are tested every day for a wide variety of substances. To learn more about SPU’s watersheds, treatment facilities, and water quality analysis, visit <http://www.seattle.gov/utilities/services/water>.

Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we cannot control the variety of materials used in plumbing components. 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, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at (800) 426-4791 or at www.epa.gov/safewater/lead.

Important Health Information

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, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 or <http://water.epa.gov/drink/hotline>.



QUESTIONS? For more information about this report, or for any questions related to your drinking water, please contact the City of Mercer Island Public Works Department at (206) 275-7608. This 2023 report of water testing done in 2022 is also available at www.mercerisland.gov/2022WaterQualityReport.



BY THE NUMBERS

The number of Olympic-sized swimming pools it would take to fill up all of Earth's water.

800
TRILLION

1 The average cost in cents for about 5 gallons of water supplied to a home in the U.S.

The percent of Earth's water that is salty or otherwise undrinkable, or locked away and unavailable in ice caps and glaciers.

99

50 The average daily number of gallons of total home water use for each person in the U.S.

The percent of Earth's surface that is covered by water.

71

330
MILLION The amount of water on Earth in cubic miles.

The percent of the human brain that contains water.

75

Community Participation

You are invited to participate in our public forum and share your comments about your drinking water. The Utility Board meets, as needed, on the second Tuesday of the month at 5:00 p.m. Board and commission meetings are held in a hybrid format. The public is welcome to join meetings in person at Mercer Island Community & Event Center, 8236 SE 24th Street, or remotely using Zoom. You can find upcoming meeting and contact information at www.mercerisland.gov/bc-utilityboard. Comments are always welcome at publicworks@mercerisland.gov.

What's a Cross-Connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air-conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).



Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test backflow preventers to make sure that they provide maximum protection. For more information on backflow prevention, contact the Safe Drinking Water Hotline at (800) 426-4791.

How Is My Water Treated and Purified?

The City of Mercer Island receives its water primarily from the Cedar River water supply via SPU's transmission system. At SPU's Cedar treatment facility, the water is screened to remove debris (e.g., twigs, leaves), disinfected with chlorine to remove microbial contaminants, and fluoridated for dental health protection. Its pH is adjusted with lime for corrosion control to minimize lead leaching in older plumbing systems. SPU also uses ozonation for odor and taste improvement and Giardia control and ultraviolet light disinfection to disable microbial contaminants such as chlorine-resistant Cryptosporidium. Treatment for the Tolt water supply includes ozonation, filtration, chlorination, fluoridation, and pH and alkalinity adjustment.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	Levels in Cedar Water		Levels in Toft Water		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Arsenic (ppb)	2022	10	0	0.43	0.34–0.52	0.28	0.22–0.38	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2022	2	2	0.00126	0.00102-0.00143	0.00121	0.00114–0.00130	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Bromate (ppb)	2022	10	0	0.4	ND–5	ND	NA	No	By-product of drinking water disinfection
Chlorine (ppm)	2022	[4]	[4]	0.92	0.30–1.63	0.92	0.30-1.63	No	Water additive used to control microbes
Fluoride (ppm)	2022	4	4	0.7	0.6–0.8	0.7	0.6–0.8	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2022	60	NA	29	17.1–40.3	29	17.1–40.3	No	By-product of drinking water disinfection
Nitrate (ppm)	2022	10	10	0.1	NA	0.1	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [total trihalomethanes] (ppb)	2022	80	NA	29	21.9–42.4	29	21.9–42.4	No	By-product of drinking water disinfection
Turbidity¹ (NTU)	2022	TT	NA	1.93	0.19–1.93	0.24	0.02–0.24	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2022	TT = 95% of samples meet the limit	NA	NA	NA	100	NA	No	Soil runoff

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

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.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL		Levels in Cedar Water		Levels in Tolt Water		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/ TOTAL SITES	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/ TOTAL SITES		
Copper (ppm)	2022	1.3	1.3	0.05	0/50	0.19	0/55	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2022	15	0	2.2	0/50	3.8	0/55	No	Lead service lines; Corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

¹ Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The turbidity MCL that applied to the Cedar supply in 2022 is 5 NTU, and for the Tolt supply, it was 0.3 NTU for at least 95% of the samples in a month. All Tolt samples in 2022 were below the 0.3 NTU.

Substances That Could Be in Water

In order to ensure that tap water is safe to drink, the U.S. EPA and the Department of Health (DOH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration and the Washington Department of Agriculture regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

What Are “Forever Chemicals” (PFAS) and Are They in Our Drinking Water?

Per- and polyfluoroalkyl substances (PFAS) are manufactured chemicals that have been used in everyday products like waterproof jackets, food packaging, and nonstick pans since the 1940s. PFAS are also found in fire-fighting foams, and their use at airports and military bases has been linked to the contamination of aquifers. Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) are types of PFAS.

Because PFAS don't break down in the environment, they are sometimes called “forever chemicals.” Scientific studies have shown that exposure to some PFAS in the environment may be linked to harmful health effects in humans and animals. To protect human health, our supplier, SPU, monitors your drinking water for PFAS. Routine testing was only recently required, but SPU conducted testing in 2015 and 2018, and there were no detections of PFAS in Seattle's drinking water supply from the Cedar and Tolt watersheds. Those results can be found at seattle.gov/utilities/PFAS. You can learn more about PFAS at <https://doh.wa.gov/community-and-environment/contaminants/pfas>.

In March 2023, SPU conducted another round of PFAS testing. Those test results were not available at the time of publication for this report, but will be posted on the website as soon as SPU receives the results from the lab.