



WATER QUALITY REPORT 2016



CITY OF
ISSAQUAH
WASHINGTON



Issaquah's Commitment: Safe Drinking Water

Each year, we publish a water-quality report to educate you — our valued customers — about where your water comes from, how it's delivered and how to conserve it.

Our top priority is simple: Providing you the highest-quality water possible.

Once again, as you'll see in this report, we have met all water quality requirements.

Meanwhile, our dedication to conservation will help ensure our region's water remains safe, clean and reliable for generations to come.

Questions? Please Ask!

If you have any questions, please call us at 425-837-3470, visit issaquahwa.gov/water or connect with us via social media.

Would you like to get involved? Share your opinions on the City's drinking water! The Issaquah City Council meets at 7 p.m. the first and third Monday of each month at City Hall South, 135 E. Sunset Way.

The Council Infrastructure Committee also meets at 6:30 p.m. the third Thursday of each month in the Council Chambers, 135 E. Sunset Way.

City Starts Well 4 Water Filtration

Issaquah is now pumping from Well 4, thanks to a new filtration system that removes perfluorochemicals, or PFCs, from the water before it enters the City's distribution system.

Monthly test results show the system is working – there are no detections of PFCs from Well 4.

Issaquah participates in the Environmental Protection Agency's (EPA) unregulated monitoring program by performing additional tests on our drinking water.

During that testing, detections of PFCs were found in Well 4, the City's smallest well. In the winter of 2016, the City stopped running Well 4 until the filtration system was installed and tested.

Issaquah meets all standards set for safe drinking water.

Based on the latest science, the EPA recently released drinking water health advisories (which are not enforceable or regulated) on two PFCs, called PFOA and PFOS. Issaquah meets these advisories.

Meanwhile, more stringent testing has been conducted – even below levels defined by EPA as an actual detection – to better understand the potential sources of PFCs. All of Issaquah's wells have tested below EPA's detection threshold for PFCs.

Learn more at issaquahwa.gov/PFCs.



Resource-Efficient Water Management

Water conservation protects our local and regional streams, and helps Issaquah use our infrastructure wisely. As warmer, drier summers become more frequent, it is even more important to conserve.

Water use is tracked as a Sustainable City Indicator to help gauge progress toward our long-term goals. Together with the community, the City works to reduce the amount of water used in Issaquah.

In 2016, the City focused on reducing peak-season demand from commercial irrigation. Customers received reminders to adjust their irrigation settings, and they heard more about best practices to use water efficiently, while also saving money.

In addition, the City helps to reduce water leakage with investments in water mains, reservoirs and other infrastructure. Ongoing operational improvements, meter testing, and other programs continue to keep this figure below the state-required 10 percent.

2016 Water Production and System Leakage

Water production and purchases	871.59 million gallons
Authorized consumption	808.42 million gallons
Distribution system leakage	63.17 million gallons
2016 leakage	7.25%
3-year average	8.15%

The City is a member of the Cascade Water Alliance, and has adopted regional water use efficiency goals. The following regional goal was adopted for 2014 – 2019: Cascade will dedicate resources necessary to achieve a cumulative drinking water savings of 0.6 million gallons per day on an annual basis and 1 million gallons per day on a peak season (June – September) basis by 2020.

Both the City and Cascade provide water efficiency programs and services for water customers in Issaquah and in the region. In 2016, Cascade programs and services resulted in approximately 20,000 direct customer interactions promoting water efficiency and a savings of an estimated 257,728 gallons of water per day, or 43% of Cascade's 2014-19 goal.

For more information about the water conservation programs, go to issaquahwa.gov/sustainability or call 425-837-3400.



Where Does Our Water Come From?

In 2016, the City of Issaquah provided 871 million gallons of high-quality drinking water to about 29,900 customers through more than 12,800 water connections. Most of Issaquah's water is produced from four groundwater wells, which range in depth from 100 to 400 feet. Chlorine is added at the well sites to disinfect the drinking water, which is then conveyed through 112 miles of water main and 13 water booster stations before it's stored in one of 21 reservoirs, which hold a total of 12 million gallons.

Along with well water, Issaquah also purchases regional water from Cascade Water Alliance (CWA). Talus and South Cove-area residents currently receive this regional water, while Issaquah Highlands receives a blend of regional and well water. CWA also includes the cities of Bellevue, Kirkland, Redmond and Tukwila, as well as the Sammamish Plateau and Skyway water and sewer districts.

The alliance currently gets its water from the City of Seattle water system, which sources from the Tolt and Cedar river watersheds.

With the exception of Issaquah Highlands, the City's well water and CWA water are not mixed, as the distribution systems are separated. Water purchased from the CWA is fluoridated, while Issaquah well water is not.

Several years ago, CWA also purchased Lake Tapps in eastern Pierce County as the region's newest water supply in decades. As a result of customers' wise use of water, responsible plumbing codes and water-efficient appliances, CWA will have enough water for the future and likely won't develop Lake Tapps until it is needed. Planning for water takes time. That's why we are planning now for that future!

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 water.epa.gov/drink/hotline.

SUBSTANCES THAT COULD BE IN WATER

In order to ensure that tap water is safe to drink, the U.S. EPA and/or the Washington state board of health prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration 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.

CRYPTOSPORIDIUM

Cryptosporidium is a microbial parasite found in surface water throughout the United States. Although filtration removes cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Symptoms of infection include nausea, diarrhea and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immune-compromised people are at greater risk of developing life-threatening illness. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

Since the Lower Issaquah Valley Aquifer is a groundwater source, it is not required to be tested for cryptosporidium. The CWA water sources (the Cedar and Tolt supplies), were tested for cryptosporidium in 2016 with no detections from the Tolt supply (12 samples). It was detected in 2 of 12 samples from the Cedar supply. This monitoring is not required for the wells. Ozone disinfection, which is used at the Cedar and Tolt treatment plants, is very effective at destroying cryptosporidium and other microbes. The U.S. EPA/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 or water.epa.gov/drink/hotline.



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. Issaquah is responsible for providing high-quality drinking water, but 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 or at epa.gov/safewater/lead.



HELP KEEP OUR WATER SAFE

If you have a water connection to an irrigation or fire sprinkler system, boiler, pool/spa, water feature or photo development equipment, state law requires that you install a backflow prevention assembly and have it tested annually.

A backflow prevention assembly will prevent contaminated water from flowing back into your drinking water or into the City's water system. Most residences and businesses with backflow prevention assemblies are registered with the City of Issaquah.

If you haven't been testing your backflow assembly, call 425-837-3470 for assistance in finding a tester to help protect the water you drink. Please also call us if you know of a potential threat to our drinking water.

ARSENIC IN WATER

While your drinking water meets U.S. EPA's standard for arsenic, it does contain low levels of arsenic. U.S. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. U.S. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Water Quality Results 2016 (PWSID#: 363505)

During the past year, we have taken hundreds of water samples in order to determine the presence of any herbicides, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain

Finished Water				Lower Issaquah Valley Aquifer (Wells 1,2,4,5-Talus-Issaquah Highlands)		CWA-Cedar Supply (Montreux, Lakemont, Issaquah Highlands, Talus)	
Substance	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Range Low- High	Average Amount Detected	Range Low-High	Average Amount Detected
Arsenic (ppb)	2016	10	0	2 to 9	4	0.4 to 0.6	0.5
Barium (ppb)	2016	2000	2000	3 to 13	6	1.5 to 1.8	1.6
Bromate ^ (ppb)	2016	10	0	NA	NA	ND	ND
Chloride (ppm)	2016	250	NA	3.8 to 5.73	4.6	NA	NA
Chlorine (ppm)	2016	[4]	[4]	0.03 to 1.35	0.44	0.02 to 1.61	0.68
Chromium (ppb)	2016	100	100	NA	NA	0.25 to 0.33	0.27
Color (Color Units)	2016	15	NA	5 to 6	5.75	NA	NA
Copper (ppm)	2016	1.3	1.3	ND to .005	0.001	NA	NA
Electrical Conductivity (µS/cm)	2016	700	NA	158 to 293	215	NA	NA
Hardness as Calcium Carbonate (ppm)	2016	NA	NA	52.6 to 100.2	74	NA	NA
Fluoride (ppm)	2016	4	4	NA	NA	0.6 to 0.9	0.7
Haloacetic Acids [HAA]- Stage 2 (ppb)	2016	60	NA	NA	NA	17.5 to 56.6	36.9
Manganese (ppm)	2016	0.05	NA	ND to 0.062	0.02	NA	NA
Nitrate-N (ppm)	2016	10	10	ND to .54	0.32	(one sample)	0.02
Sodium (ppm)	2016	NA	NA	8.1 to 23.3	12.25	NA	NA
Sulfate (ppm)	2016	250	NA	6 to 30	12.9	NA	NA
Total Trihalomethanes [TTHMs]- Stage 2 (ppb)	2016	80	NA	NA	NA	30.7 to 51.5	47.4
Turbidity (NTU)	2016	TT	NA	ND to 0.16	0.04	0.2 to 2.3	0.3

^ Note from Seattle Public Utilities - We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During June 2016, we did not collect the monthly sample for bromate for the Tolt supply, and therefore cannot be sure of the quality of your

Raw Water				Lower Issaquah Valley Aquifer (Wells 1,2,4,5-Talus-Issaquah Highlands)		CWA-Cedar Supply (Montreux, Lakemont, Issaquah Highlands, Talus)	
Total Organic Carbon (ppm)	2016	NA	NA	NA	NA	0.3 to 2.1	0.8
Cryptosporidium (#/100L)	2016	NA	NA	NA	NA	ND to 2	0.3

Lead and Copper	Year Sampled	AL	MCLG	Amount Detected 90th Percentile	Sites above AL/Total sites	Violation	Typical Source
Copper (ppm)	2015	1.3	1.3	0.364	0/51	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2015	15	0	0.001	0/51	No	

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

CWA-Tolt Supply: (Montreux, Lakemont, Issaquah Highlands, Talus)		Range Low-High	Average Amount Detected	Violation	Typical Source
		0.4 to 0.6	0.5	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics waste
		1.0 to 1.6	1.3	No	Discharge of drilling wastes; discharge from metal refineries; Erosion of natural deposits
		ND to 1	0.1	No	By-product of drinking water disinfection
		NA	NA	No	Erosion of natural deposits
		0.02 to 1.61	0.68	No	Water additive used to control microbes
		ND to 0.24	0.2	No	Erosion of natural deposits
		NA	NA	No	Erosion of natural deposits
		NA	NA	No	Corrosion of household plumbing systems; Erosion of natural deposits.
		NA	NA	No	Erosion of natural deposits
		NA	NA	No	Erosion of natural deposits
		0.6 to 0.9	0.7	No	Water additive, which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
		17.5 to 56.6	36.9	No	By-product of drinking water chlorination
		NA	NA	No	Erosion of natural deposits
		(one sample)	0.09	No	Runoff from Fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
		NA	NA	No	Erosion of natural deposits
		NA	NA	No	Erosion of natural deposits
		30.7 to 51.5	47.4	No	By-product of drinking water chlorination
		0.01 to 0.2	0.07	No	Soil runoff

drinking water during that time. Based on historical data, most bromate results for the Tolt supply are non-detect.

CWA-Tolt Supply: (Montreux, Lakemont, Issaquah Highlands, Talus)		Range Low-High	Average Amount Detected	Violation	Typical Source
		1.2 to 1.7	1.4	No	Naturally present in the environment
		ND	ND	No	Naturally present in the environment

Definitions

AL: Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that 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 Unit - Turbidity is a measure of how clear the water looks. The turbidity MCL that applied to the Cedar supply in 2015 is 5 NTU, and for the Tolt it was 0.3 NTU for at least 95% of the samples in a month. 99.96% of the samples from the Tolt in December 2015 were below 0.3 NTU. 100% of the samples for the remainder of the year were below 0.3 NTU.

pCi/L: Picocuries per liter

ppb: 1 part per billion = 1 ug/L = 1 microgram per liter

ppm: 1 part per million = 1 mg/L = 1 milligram per liter

1 ppm: 1000 ppb

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



Be Water Smart!

Play a role in using water wisely, and you can save money at the same time! Here are a few simple tips that conserve a lot of water:



Take a five minute shower! Every time you shave minutes off your use of hot water, you also save energy and keep dollars in your pocket.



Adjust settings for your clothes washer. Nearly 22% of indoor home water use comes from doing laundry. Save water by making sure to adjust the settings on your machine to the proper load size.



Pay attention to outdoor water use. Water your lawn in the early morning or evening to reduce evaporation and avoid big water bills. Or consider allowing your lawn to go dormant for the summer, it will come back in the fall.



Turn off the tap! This is an easy way to save water when brushing your teeth, shaving or washing dishes.



Shop for WaterSense labeled faucets, toilets and showerheads – they've been tested to reduce water use and provide exceptional performance.

Contact the Office of Sustainability if you have questions or to order a free shower timer. Learn more at issaquahwa.gov/sustainability.