Birch Bay Water and Sewer District

2023 Drinking Water Quality Report

Birch Bay Water and Sewer District (BBWSD) is pleased to provide our customers with its annual "Consumer Confidence Report" for the calendar year 2023. This report explains the quality of drinking water provided by BBWSD. The report includes results from required water quality tests, as well as an explanation of where our water comes from and tips on how to interpret the data.

Why Monitor?

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 can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- **Microbial Contaminants** (viruses, bacteria & parasites)
- **Inorganic Contaminants (IOC)** (salts & metals, naturally occurring)
- **Pesticides & Herbicides (SOC)** (agricultural, stormwater runoff, residential uses)
- **Organic Chemicals (VOC)** (industrial by-products, septic tanks, gas stations
- **Radioactive Contaminants** (naturally occurring or as a result of mining and /or gas production)

In order to ensure that tap water is safe to drink, the WA Department of Health and the United States Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems.

Overview

Birch Bay Water and Sewer District purchases water from the City of Blaine. The water comes from several deep wells within the City of Blaine's well field. The City of Blaine protects, provides and treats the water supply with a small amount of chlorine. Sampling occurs at specific frequencies (continuously, daily, monthly, quarterly or annually) and at different locations (prior to treatment, as it enters the distribution system, and throughout the distribution system) in accordance with federal and state regulations. City testing includes inorganic compounds (IOC), synthetic organic compounds (SOC), volatile organic compounds (VOC), microbial substances and chlorine disinfection by-products.

BBWSD coordinates with the City of Blaine to provide water, test for new sources, and protect water rights. The District designs, operates, repairs and maintains your water storage and distribution system in the Birch Bay area. BBWSD also checks chlorine levels, monitors and inspects new construction, and follows coliform bacteria, lead & copper, chlorine disinfection byproducts (DBP) and other sampling, testing, and monitoring plans as required. Samples are taken at several locations throughout the system to ensure that the entire system is tested and monitored. Results for Blaine and Birch Bay can be viewed at https://fortress.wa.gov/doh/eh/portal/odw/si/Intro.aspx. Specific District water quality questions can be directed to the Operations Manager, Mike Kim, at (360) 371-7100.

Your drinking water meets all water quality parameters established by State & Federal Law.

Lead and Copper

The District has been using lead-free fittings & materials since 2014. Low-lead fittings (Less than 5% lead) were used prior to 2014. Water main piping does not have any lead content. Residential service lines are typically copper or polyethylene pipe, which presents a very low health risk. The District has *never* installed lead taps or lead service lines, which were significant sources of lead in other areas such as Flint, MI. If lead is detected within a residence in our service area, it is likely due to residential plumbing fixtures as some older fixtures can have trace amounts of lead.

The District has taken hundreds of lead and copper samples in residences since 1998, with results typically extremely low to less-than-detectable levels, all under EPA limits. Lead and Copper samples are drawn every three years.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. If water has been sitting for several hours (such as overnight), 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.

PFAs (Per- and Polyfluoralkyl Substances)

Per- and Polyfluoroalkyl substances are a diverse group of human-made chemicals used in a wide range of consumer and industrial products. PFAS do not easily breakdown and some types have been shown to accumulate in the environment and in our bodies. Exposure to some types PFAs have been linked to serious health effects.

Due to deep, sealed aquifers, our water sources are not easily susceptible to runoff or industrial contamination, such as PFAs, herbicides, and insecticides. As a precautionary check, PFA samples were taken in 2020. Results were "non-detectable". However, due to the hazardous nature of PFAs, the EPA is mandating new and frequent PFA testing requirements for all water systems in 2024.

All 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 (1-800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population.
***Immuno-compromised 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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. 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 (1-800-426-4791)*

The Safe Drinking Water Hotline is also available online at water.epa.gov/drink/hotline.

2023 Water Quality Monitoring Results

In accordance with State and Federal Standards, we continually monitor and test our drinking water. BBWSD took 111 bacteriological samples throughout the system in 2023. The City of Blaine (our water source) took 88 additional bacteriological samples, along with 19 IOC and DBP samples. The following table lists the compounds that were detected or specifically tested for in 2023. None of the compounds were above EPA limits.

	EPA LIMITS		BIRCH BAY RESULTS			
Inorganic Parameters	**Goal MCLG**	**Action Level MCL**	**Detected levels**	**Violation**	**90% Percentile**	**Typical Sources**
Lead (2022)	0 ppb	15 ppb	ND-2.7 ppb	No	1.8 ppb	Erosion of natural deposits, corrosion of household plumbing systems
Copper (2022)	1.3 ppm	1.3 ppm	ND-0.13 ppm	No	0.115 ppm	Erosion of natural deposits, corrosion of household plumbing systems
Inorganic Contaminants	**Goal MCLG**	**Action Level MCL**	**Range of Tests**	**Violation**	**Highest Result**	**Typical Sources**
Nitrates (2023 - Blaine)	2 ppm	2 ppm	0.5-1.19 ppm	No	1.19 ppm	Erosion of natural deposits, runoff from fertilizer use
Organic Contaminant	**Goal MCLG**	**Action Level MCL**	**Detected Levels**	**Violation**	**Typical Sources**	
Total Coliform (2023)	0	> 1 positive sample	1 positive sample*	No	Naturally present in the environment	
Fecal Coliform & E-Coli	0 mpn	0 mpn	0 mpn	No	Human and animal fecal waste	
HAA5[1] (2023 - Blaine)	60 ppb	60 ppb	1.9 ppb	No	By-product of drinking water chlorination	
TTHM[1] (2023 - Blaine)	80 ppb	80 ppb	3 ppb	No	By-product of drinking water chlorination	

* BBWSD had one bacteriological sample with the presence of coliform. Operators collected repeat samples immediately after receiving the result and all repeat samples were satisfactory.

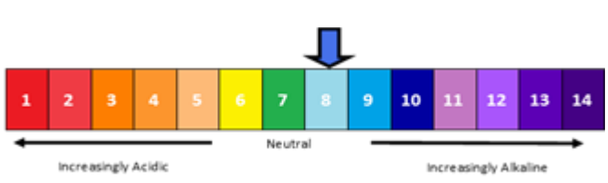
1. Disinfection Byproducts (DBPs) can form in water when disinfectants (such as chlorine) used to control microbial pathogens combine with naturally occurring minerals. Some studies have shown that high levels of DBPs are associated with an increased risk of some cancers.

Secondary Parameters	Units	MCL	Results	Compliance
Manganese	ppm	0.05	ND - 0.0485	✓
Iron	ppm	0.3	ND - 0.10	✓
Chromium	ppb	100	ND – 0.007	✓
Sulfate	ppm	250	13.4	✓
Fluoride	ppm	4.0	ND – 0.15	✓

Iron and Manganese can fluctuate throughout the year and may be noticeable as reddish, rusty deposits or surface film. They are not health hazards; just aesthetic (visual, appearance) concerns.

Water Hardness Scale		
Grain/Gal	Mg/L & pp,	Classification
Less than 1	Less than17.1	Soft
1-3.5	17.1-60	Slightly Hard
3.5	60-120	Moderately Hard
7-10	120-180	Hard
Over 10	Over 180	Very Hard

Hardness- The water hardness is typically in the range of 50-95 m g/L which is considered moderately hard. Hardness is not a health hazard, but if the water is too hard, deposits and scaling can occur and a water softener may be needed.



pH - Your water varies between a pH of 7.7 and 8.2, with an average of about 8.0. This higher pH helps to minimize corrosion and the leaching of metal Ions (iron, copper, lead, etc.) from plumbing fixtures into the system.

CHLORINE (CL2) - A free CL2 residual, typically 0.03-0.20 mg/l, is maintained in the distribution system to ensure that it remains free of pathogens and provides biological protection. A minimal chlorine residual helps to minimize the formation of

Definitions and Acronyms

Maximum Contaminant Level (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 (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; an individual would have to drink 2 liters of water/day at the MCL level every day to have a one-in-a-million chance of having the described health effect.*

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

90th Percentile: *90% of all values were less than this amount.*

Parts Per Million (PPM): *One part per million corresponds to one minute in two years; a single penny in $10,000.*

Parts Per Billion (PPB): *One part per billion corresponds to one minute in 2,000 years; a single penny in $10,000,000.*

Milligrams per Liter (mg/L): *A unit of concentration, representing 0.001 grams of a constituent in 1 liter of water.*

Picocuries Per Liter (pCi/L): *A unit of measuring radionuclide levels.*

Most Probable Number Index (MPN): *The concentration of coliform bacteria in the sample (expressed as the number of bacteria per 100mL of sample).*

No Detect (ND): *A compound that was analyzed and not detected at a level greater than or equal to the state reporting level (which is based on instrument & procedure accuracy and sensitivity)*

HAA5: *Refers to a collective group of halo acetic acids which are undesirable disinfection byproducts.*

TTHM (Total Trihalomethanes): *A group of disinfection byproducts that form when chlorine compounds that are used to disinfect water react with other naturally occurring chemicals in the water.*