BIRCH BAY WATER AND SEWER DISTRICT

2018 Drinking Water Quality Annual Report

The Birch Bay Water and Sewer District (BBWSD) is pleased to provide our customers with its annual "Consumer Confidence Report" for the calendar year 2018. 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.

The Birch Bay Water and Sewer District (BBWSD) 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 and cooperates 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 byproduct 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. All samples and sample results for Blaine and Birch Bay (and any other public system) 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 District's Operations Manager, Mike Sowers, at (360) 371-7100.

Your drinking water meets or exceeds all water quality parameters established by State and Federal Law.

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** (salts & metals, naturally occurring)
- **Pesticides & Herbicides** (agricultural, stormwater runoff, residential uses)
- **Organic Chemicals** (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.

Lead and Copper

The District is required to monitor for lead and copper in the distribution system. The District has taken 182 lead and copper samples in residences since 1998 with NO EXCEEDANCES (all below EPA limits). The samples are drawn at times during which lead and copper is expected to be at their highest levels. The latest tests included 21 samples taken in July of 2016: Over half of the samples were "non-detectable" for lead and the overall average for ALL samples was only 0.6 parts per billion (ppb), which is about 1/25th of allowable lead levels.

The District has been using LEAD FREE fittings & materials since 2014. Low-lead fittings (Less than 5% lead) were used prior to 2014. This included items such as pipe saddles, connectors, and water meter setters, all of which are only a fraction of the total distribution and piping system. Water main piping does not have any lead content. Residential service lines are typically copper or poly (polyethylene) pipe, which presents a very low health risk. The District has *never* installed lead taps or lead service lines, which have been 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 piping and/or plumbing fixtures as some faucets and fixtures have a combination of brass, copper, zinc and trace amounts of lead.

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.

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.

*INORGANIC CONTAMINANTS (MEASURED AT WELLS) *COLLECTED THROUGHOUT 2018*

Detected Compounds	Violation Yes/No	Detected Range	Units	MCLG	MCL	Source of Contamination
Nitrate	NO	ND – 1.36	mg/L	10	10	Erosion of natural deposits, runoff from fertilizer use, leaching septic tanks, sewage

*INORGANIC PARAMETERS (MEASURED AT HOMESITES) *COLLECTED JULY 2016 – 3 yr test cycle (Long cycle due to consistent low levels)*

Detected Compounds	Violation Yes/No	Detected Range	90th Percentile	UNITS	MCLG	AL	TYPICAL SOURCE
Lead	NO	ND—2	2	ppb	15	15	Erosion of natural deposits, corrosion of household plumbing systems
Copper	NO	0.0036-0.137	0.105	ppm	1.3	1.3	Erosion of natural deposits, corrosion of household plumbing systems

MICROBIOLOGICAL CONTAMINANTS (Over 100 samples taken in 2018)

Detected Compounds	Violation Yes/No	Level Detected	Units	MCLG	MCL	Maior Source of Contamination
Total Coliform	NO	NONE	MPN	0	0	Naturally present in the environment
Fecal Coliform & E-coli	NO	NONE	MPN	0	0	Human and animal fecal waste

DISINFECTION BYPRODUCTS

Detected Compounds	Violation Yes/No	Level Detected	Units	MCL
HAA5	NO	1.2	ppb	60
TTHM	NO	16.3	ppb	80

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.

CHLORINE (CL2) - A minimal free CL2 residual, typically 0.02-0.08 mg/l, is maintained in the distribution system to ensure that it remains free of pathogens and provide biological protection. A low chlorine residual helps to minimize the formation of Disinfection Byproducts. (MCL for chlorine is 4.0 mg/l)

SECONDARY/OTHER PARAMETERS (Aesthetic, cosmetic, technical ONLY)

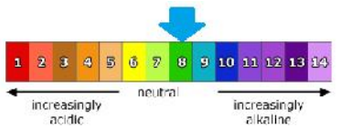
Detected Compounds	Violation Yes/No	Level Detected	Units	MCL
Manganese	NO	0.046	ppm	0.05
Iron	NO	< 0.10	ppm	0.3
Chloride	NO	< 20	ppm	250
Sulfate	NO	< 50	ppm	250
Fluoride	NO	0.11	ppm	4.0

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

HARDNESS - Water hardness is typically in the range or 50-95 mg/L; considered moderately hard. Hardness can vary seasonally; past samples indicate hardness may peak as high as 120 mg/l. Hardness is not a health hazard, but if water is too hard, deposits and scaling can occur and a water softener may be needed.

Water Hardness Scale		
Grains/Gal	mg/L & ppm	Classification
Less than 1	Less than 17.1	Soft
1 – 3.5	17.1 - 60	Slightly Hard
3.5 - 7	60 - 120	Moderately Hard
7 - 10	120 - 180	Hard
Over 10	Over 180	Very Hard

pH - Your water varies between a pH of 7.8 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.



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.*

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.*

SUMMER WATERING SCHEDULE

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
ODD ADDRESS	NO WATERING	EVEN ADDRESS	ODD ADDRESS	EVEN ADDRESS	ODD ADDRESS	EVEN ADDRESS

From June 1 to September 15, the District implements a voluntary summer watering schedule to help manage our water supply during the summer months. Residents with odd numbered street addresses may water on Wednesdays, Fridays and Sundays. Residents with even numbered street addresses may water on Tuesdays, Thursdays and Saturdays. Mondays are non-watering days to allow reservoirs to recharge after the weekend. For more information visit www.bbwsd.com or contact the District at 360-371-7100.

Birch Bay Water and Sewer District is a partner of the Whatcom Water Alliance, a regional water conservation group in Whatcom County. Alliance members share a passion in providing clean and safe water to protect your health, planet and quality of life.