2017 Port Townsend
Annual Drinking Water Report

Water Sources

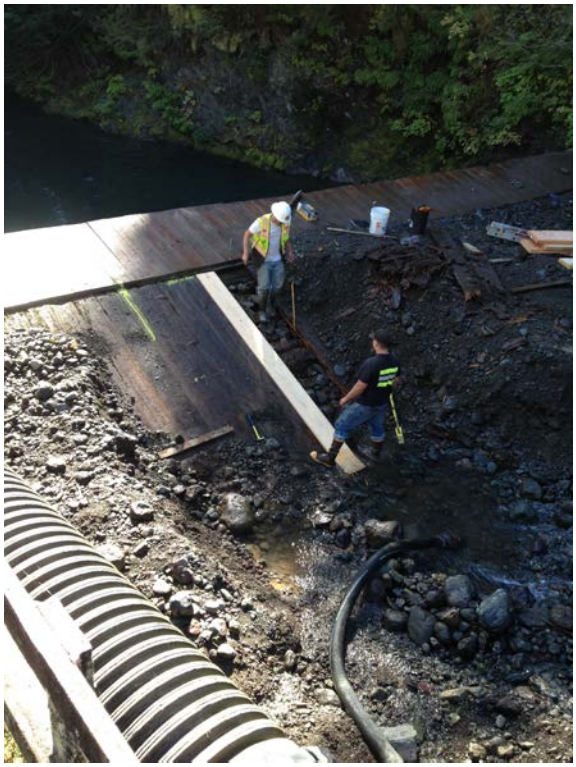
The City of Port Townsend's water supply (System ID # 69000R) is surface water from the Big Quilcene and Little Quilcene Rivers (Source # 01 and 02) in the northeast corner of the Olympic National Forest. Water is stored in Lords Lake and City Lake Reservoirs. As with all surface water sources, the Washington Department of Health (DOH) rates the City's source water as highly susceptible to contamination. The City and U.S. Forest Service continue to cooperate in a joint effort to manage and protect the municipal watershed to maintain the high quality of the source water and minimize treatment requirements.

System Operation and Treatment

On January 17, 2017 the City's new membrane filtration treatment plant that is designed to remove potential microbial contaminants began operation. Chlorine is added after filtration to provide an additional safety barrier and to maintain the required disinfectant residual throughout the distribution system.

Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as, nausea, cramps, diarrhea, and associated headaches.

Port Townsend's water system is operated and maintained by trained personnel certified by the State. Water quality sampling results are for the monitoring performed January 1 – December 31, 2017. Drinking water quality continues to meet or exceed all federal and state health standards.



Big Quilcene Diversion Inspection

Big Quilcene Diversion Repair

The Big Quilcene Diversion is a rock filled timber crib structure that has been in place since 1928. Periodic condition assessments of the diversion structure over the past 18 years have revealed deterioration of some of the timbers. While the structure remains serviceable, deterioration of some elements have the potential to lead to structural failure. Repairs are planned for the late summer of 2018 when low stream flows permit construction.

Water Use Efficiency Report

Efficient water use benefits the environment, water system operations, and our customers by maintaining more water in the streams and lowering operating costs. Last year an average of 926,960 gallons of water per day was delivered to our 10,592 customers and many visitors. Total City consumption was 364 million gallons with residential consumption averaging 62 gallons per person per day.

Of the total consumption, 5.6% or 20.6 million gallons was unaccounted for by customer meters or other

measurement, while the 3 year average loss was 5.4%. Unaccounted for water is lost through such things as under-registering meters, use of fire hydrants, and leaking underground pipes. Port Townsend has an ongoing leak detection program to inspect the water system for leaks to reduce unaccounted for water. During 2017, approximately 8.5 miles of distribution system piping were surveyed for leaks.

Potential 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 EPA's Safe Drinking Water Hotline (1-800-426-4791).

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 that may be present in source water include:

Microbial contaminants, such as viruses, protozoans, and bacteria, which may come from wildlife, people and pets visiting the watershed.
Inorganic contaminants, such as salts and metals, which can be naturally occurring.
Pesticides and herbicides, which may come from sources such as forestry management.
Organic chemical contaminants, including synthetic and volatile organic chemicals, which can come from vehicles in the watershed or that result from chlorine combining with naturally occurring organic matter.

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).

In order to ensure tap water is safe to drink, the Department of Health and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) and the Washington Department of Agriculture regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. While the City tests for more than eighty different contaminants, the substances listed in the following tables are the only ones detected in our drinking water. Sampling for certain contaminants occurs less than once per year because concentrations of these contaminants are not expected to vary significantly from year to year. All data shown were collected during the last calendar year unless otherwise noted in the tables.

Lead & Drinking Water

Lead does not commonly occur in source water but may come from corrosion of building plumbing and water fixtures. The City of Port Townsend did not use lead service lines, however homes built before 1987 were often constructed with copper pipes and lead based solder. Faucets, valves, and other components made of brass also typically contained a small amount of lead. Congress banned the use of pipes, solder or flux that were not "lead free" in public water systems or plumbing in facilities providing water for human consumption in 1986.

In order to determine if water the City serves is causing corrosion of a home's plumbing and lead leaching, the City has regularly tested water at a number of houses identified as having copper plumbing with lead based solder. Since sampling began in 1992, lead test results have always been below the EPA regulatory action levels.

To minimize the chance of lead exposure it is recommended to flush faucets when they have gone unused for more than a few hours. It takes time for lead to dissolve in water, so the first water drawn from the tap in the morning or after a long period of non-use can contain higher levels of lead. Flushing clears standing water from

your plumbing fixtures and home service lines to ensure you are getting drinking water from the water distribution mains, where lead is not likely to be present. Let the water run from the tap until it is noticeably colder (this may take a minute or two) before using it for cooking or drinking. Remember to flush any faucet used for drinking after long periods of non-use. Lead leaches more easily into hot water than cold water so use only cold water for cooking or drinking.

Residential Testing	MCL	MCLG	90th Percentile	Number of Samples Exceeding AL	Year Sampled	Meets Standards	Typical Source of Contaminant
Copper (ppm)	AL=1.3	0	0.71	0 of 30	2016	Yes	Corrosion of household plumbing systems
Lead (ppb)	AL=15	0	6	2 of 30	2016	Yes	Corrosion of household plumbing systems

- 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. Port Townsend is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. 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 http://www.epa.gov/safewater/lead.
- Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short period of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

Port Townsend Annual Water Quality Analysis

Microbiological Constituents	MCL	MCLG	Range of Detections	Testing Frequency	Meets Standards	Typical Source of Contaminant
Turbidity (NTU)	TT	0	0.009-2.001	Continuous	Yes	Soil runoff

- Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.

Disinfection Constituents	MCL	MCLG	Range of Detections	Testing Frequency	Meets Standards	Typical Source of Contaminant
Chlorine (ppm)	MRDL=4	MRDLG=4	0.20-2.11	Continuous	Yes	Water additive used to control microbes
Haloacetic Acids (HAAs) (ppb)	60	NA	15.0-94.7 LRAA 51.6	Quarterly	Yes	By-product of drinking water chlorination
Total Organic Carbon (ppm)	TT	NA	0.50-0.99	Quarterly	NA	Naturally present in the environment
Total Trihalomethanes (TTHMs) (ppb)	80	NA	16.5-65.6 LRAA 44.1	Quarterly	Yes	By-product of drinking water chlorination

- Chlorine is used for microbiological disinfection of the drinking water. Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
- Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects and may lead to an increased risk of getting cancer.
- Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
- Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Inorganic Constituents (Source Water)	MCL	MCLG	Port Townsend Water	Range of Detections	Year Sampled	Meets Standards	Typical Source of Contaminant
Barium (ppm)	2	2	0.003	One sample	2013	Yes	Erosion of natural deposits

Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

Definitions

Action Level (AL): The concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.
Lead and Copper 90th Percentile: Out of every 10 homes sampled, 9 were at or below this level.
Locational Running Annual Average (LRAA): Highest quarterly average of four samples taken at four sampling locations.
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.
Maximum Residual Disinfectant Level (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 (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.
NA: Not Applicable
ND: Not Detected or below State Reporting Limit.
NTU: Nephelometric Turbidity Units - a measure of the cloudiness of the water.
ppb: Parts per billion or micrograms per liter (µg/L).
ppm: Parts per million or milligrams per liter (mg/L).
Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Public Comment

The public is invited to participate in decisions that affect drinking water through comment to the Port Townsend City Council. Information about scheduled meetings is available through the City Administration Office (379-5047) or via the City's web site: http://www.cityofpt.us/calendar/events.asp?action=week&calendar=1. If you have any additional questions about the drinking water or would like a complete list of substances we test for please call Ian Jablonski at the Port Townsend Department of Water Quality (379-5001). Information is also available on the City's web site: http://www.cityofpt.us/Water/