2009 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 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 rates the City's source water as highly susceptible to contamination. The City and U.S. Forest Service cooperate in a joint effort to manage and protect the municipal watershed. By minimizing opportunities for contaminants to enter the source water, we continue to meet the stringent criteria required to remain an unfiltered surface water system. Water treatment consists of the addition of chlorine gas to provide protection from microbial contaminants. The water quality sampling results below are for monitoring performed January 1 – December 31, 2009. We are pleased to report that the City's drinking water meets or exceeds all federal and state health standards.

Little Quilcene River Municipal Diversion

Water Use Efficiency Report

Last year an average of 1 million gallons of water per day was delivered to more than 9600 customers as well as thousands of visitors. Total City consumption was 367 million gallons with residential consumption averaging 70 gallons per person per day. Of the total consumption, 6% or 22 million gallons was unaccounted for by customer meters or other measurement. Unaccounted for water is lost through such things as under-registering meters, use of fire hydrants, and leaking underground pipes. Port Townsend is continuing its leak detection program to reduce unaccounted for water. In 2009 34% of the distribution system piping was 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. Substances listed in the following tables are the only ones detected in the drinking water. Sampling for certain contaminates occurs less than once per year because concentrations of these contaminants are not expected to vary significantly from year to year.

Port Townsend Annual Water Quality Analysis

Inorganic Constituents	AL	MCLG	90th Percentile Value	# of home sites tested above AL	Range of Results	Testing Frequency	Violation	Typical Source of Contaminant
Copper (ppm)	AL=1.3	0	0.41	0 of 20	0.09-0.53	Once every 3 years	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	AL=15	0	4	0 of 20	1-8	Once every 3 years	No	Corrosion of household plumbing systems; erosion of natural deposits

- Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. Flush your tap for 30 seconds to 2 minutes before using tap water to reduce lead content.
- 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.

Disinfection Constituents	MCL	MCLG	Range of Detections	Testing Frequency	Violation	Typical Source of Contaminant
Chlorine (ppm)	MRDL=4	MRDLG=4	0.05-1.00	Continuous	No	Water additive used to control microbes
Haloacetic Acids (HAAs) (ppb)	60	NA	13.9	Once a year	No	By-product of drinking water chlorination
Total organic carbon	TT	NA	ND-1.22	Quarterly	NA	Naturally present in the environment
Total Trihalomethanes (TTHMs) (ppb)	80	NA	26.3	Once a year	No	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.

Microbiological Constituents	MCL	MCLG	Range of Detections	Testing Frequency	Violation	Typical Source of Contaminant
Total Coliform Bacteria	1 positive monthly sample	0	0-1	15-20 samples per month	No	Naturally present in the environment
Cryptosporidium	Unregulated contaminant for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.	0	0-1	1 sample per month	No	Human and animal fecal waste
Turbidity (NTU)	TT=5	0	0.13-1.00	Continuous	No	Soil runoff
	TT = percentage of samples <0.5 NTU		100%			

- Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present.
- Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Our monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.
- 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.

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.

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 (e.g. chlorine, chloramines, chlorine dioxide).

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 City of Port Townsend City Council. Information about scheduled meetings is available through the City Administration Office (379-5047) or via the City's web site: www.cityofpt.us/CityCouncil/Meetings.asp.

More Information

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: www.cityofpt.us/Publicworks/WaterQuality.asp.