1999 City of Port Townsend Drinking Water Report

WATER SOURCES

Water for the City of Port Townsend and much of the outlying service areas managed by the Jefferson County PUD (Glen Cove and LUD3) is surface water that comes from the Big and Little Quilcene Rivers in the northeast corner of the Olympic National Forest. This water is stored in Lords Lake Reservoir, northwest of Quilcene, and City Lake Reservoir, at the south end of Discovery Bay.

The City and Forest Service have cooperated in a joint effort to protect and enhance this important resource for over 70 years. In 1993 the Cooperative Watershed Protection Program for the Big and Little Quilcene Municipal Watershed assessed the source water and outlined additional programs to protect it. This document is available for review at the City library. By minimizing opportunities for contaminants to enter at the water=s source, we continue to meet the stringent criteria required to remain an unfiltered surface

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 the source water include:

- $ Microbial contaminants, such as viruses, protozoans, and bacteria, which may come from wildlife.
- $ Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from stormwater runoff.
- $ Pesticides and herbicides, which may come from a variety of sources such as forestry and stormwater runoff.
- $ Organic chemical contaminants, including synthetic and volatile organic chemicals which come from stormwater runoff.
- $ Radioactive contaminants, which can be naturally occurring.

In order to ensure that tap water is safe to drink, EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which

CURRENT OPERATIONS

In 1998 the City completed construction of pipeline modifications which enabled the City to comply with the surface water treatment technique for microbiological contaminant disinfection. Disinfectant that remains in contact with drinking water for a specified length of time removes or destroys microbiological contaminants and the water is then considered by the EPA safe to drink.

Prior to the completion of water system improvements the City was unable to provide the required contact time to all of its customers. Through agreement with the Washington Department of Health, the City was allowed to continue water service without adequate contact time to a few customers while constructing the necessary improvements. Affected customers were notified by public notice until the situation was corrected.

LAB TESTING & MONITORING

The Port Townsend Water Department is involved in an extensive testing and monitoring program to ensure that the safety and quality of our drinking water meets, and in most cases exceeds all state and federal drinking water regulations.

We collect a minimum of 4 untreated water samples per week at the entrance to the distribution system, and a minimum of 10 samples per month throughout the distribution system for microbiological testing (fecal and total coliform, types of bacteria). The City also has an inorganic analysis performed on water samples once a year for such substances as nitrates, arsenic and iron. A wide spectrum of testing is conducted for organic contaminants including herbicides and pesticides, as required by the State Department of Health.

All samples are sent to state certified laboratories for testing. As shown in the analysis on the next pages, only minute traces of a few contaminants were even detected.

Little Quilcene River Diversion

1998 ANNUAL WATER QUALITY ANALYSIS

The EPA regulates monitoring of over 80 contaminants. The ones listed in the tables below are the only contaminants detected in your drinking water during the 1998 calendar year. Presence of these chemicals in the water does not necessarily indicate that the water poses a health risk. Data presented in this table is from testing done January 1- December 31, 1998. The State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year.

Organic Chemical Contaminants	MCL	MCLG	Port Townsend Water (average)	Range of Detections	Violation	Typical Source of Contaminant
Total Trihalomethanes (TTHMs) (ppb)	100	n/a	33	18-49	No	By-product of drinking water chlorination

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.

	MCL	MCLG	Port Townsend Water (highest)	Range of Detections	Violation	Typical Source of Contaminant
Turbidity (NTU)	5	n/a	0.88	0.16-0.88	No	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.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those 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).

Lead In Your Water

While the City's drinking water sources do not contain measurable amounts of lead, your home's plumbing system may leach lead into your water. Congress banned the use of lead solder in 1986. Still, many homes in our community are plumbed with this material, along with lead or galvanized pipe, and brass fixtures that may contain lead.

We have conducted repeated testing at high-risk customer taps since 1992. Results indicate lead and copper levels are well below action thresholds. This is in part due to the neutral pH of the water, limiting its corrosive potential.

Nonetheless, there is still some risk of lead contamination from water that sits longer than six hours in contact with lead containing materials. To reduce the risk of lead in your drinking water remember the following:

- Lead dissolves more quickly in hot water than in cold, so always use cold water for drinking and cooking.
- If the water has been sitting more than 6 hours, before drinking, run the tap until you feel a change in temperature. Do this in the morning and, if you have been gone all day, again in the evening.

Children and pregnant women are most at risk to lead exposure. To reduce exposure, do not use warm tap water for baby formula or other drinks or foods. Start with water taken from the cold-water faucet after flushing and warm it if necessary.

Micro-Organisms

Some disease-causing organisms, such as cryptosporidium and giardia, are difficult for microbiological labs to analyze. Chlorine disinfection, is effective at controlling or eliminating bacterial growth, viruses and giardia in our water. It does not, however, effectively control cryptosporidium.

Our water has never caused an outbreak of cryptosporidium's flu-like systems, like the infection of 400,000 people in Milwaukee during April of 1993. Still, low levels of these micro-organisms likely exist in our drinking water and probably always have; this micro-organism is found in the digestive systems of warm blooded animals which inhabit our watersheds, and for that matter, most watersheds across the country.

Health risks associated with cryptosporidium are not believed to be significant for healthy individuals. Infants, elderly and immune-compromised individuals may be at greater risk and should consider boiling or filtering their drinking water or purchasing bottled water that has been distilled or adequately filtered.

Home Water Filters

Should you filter your water at home? Home water filters and other point-of-use purification systems are used for a variety of reasons. Often people filter to remove chlorine because they feel it improves the taste of their water. Immune compromised or other high-risk individuals often need purer water than most water systems, including our system can deliver. Others are concerned about lead leaching from their home plumbing or chlorine byproducts.

There are three basic types of water purification systems: filtration, usually by carbon filters; reverse osmosis; and distillation. Expense and effectiveness in removing impurities vary among the systems. For information on specific home filter systems, contact the National Sanitation Foundation (NSF) at 1-800-673-8010 or P.O. Box 130140, Ann Arbor, Michigan 48113-0140.

Home water filters can be effective at removing contaminants. But if they are not regularly cleaned and maintained, they can become a breeding ground for other microbes, and cause health risks of their own. Therefore proper maintenance is a critical part of any home filter system.

ADDITIONAL MONITORING INFORMATION

While not required by the Environmental Protection Agency, we are including the information below to help answer customer questions regarding what is in the water. State and federal drinking water standards are set in two categories. Primary Standards relate to public health. Secondary Standards relate to aesthetic qualities such as taste, odor and appearance.

In the tables below you can see how Port Townsend complies with both types of standards. The first column lists each category and parameter in drinking water for which we routinely test. Column two lists the maximum contaminant levels (MCLs) for each compound if there is one. To comply with state and federal standards, drinking water may not contain more than this amount. The last column lists the levels of compounds observed in a mixture of Port Townsend's two surface water sources.

Water Quality Parameter	MCL	Big/Little Quilcene Rivers
Inorganic Contaminants		
Arsenic (ppb)	50	<10
Asbestos (MFL)*	7	n/d
Barium (ppm)	2	<0.1
Beryllium (ppb)	4	<3
Cadmium (ppb)	5	<2
Chromium (ppb)	100	<10
Copper (ppm)**	1.3	<0.2
Cyanide (ppb)	200	<50
Fluoride (ppm)	4	<0.2
Lead (ppb)***	15	<2
Mercury (ppb)	2	<0.5
Nickel (ppb)	100	<40
Nitrate-nitrogen (ppm)	10.0	<0.5
Nitrite-nitrogen (ppm)	1.0	<0.5
Selenium (ppb)	50	<5
Thallium (ppb)	2	<2
Secondary Standards		
Chloride (ppm)	250	<20
Iron (ppb)	300	<10
Manganese (ppb)	50	<10
Silver (ppb)	50	<10
Sulfate (ppm)	250	<10
Zinc (ppm)	5.0	<0.2
State or Non-Regulated Parameters		
Aluminum (ppb)	None set	<50
Color (color units)	15	5
Hardness (ppm)****	None set	42
Magnesium (ppm)	None set	2.6
pH	None set	6.9
Sodium (ppm)	None set	<5
Specific Conductivity	700 (μmhos/cm)	95
Organic Chemicals		
Pesticides & PCBs*****	Various	n/d
Herbicides*****	Various	n/d
Volatile Organics (VOC)*****	Various	n/d

* MFL - results are Million Fibers greater than 10 microns/Liter. The MCL is 7 million fibers/liter that are longer than 10 microns.
** Maximum contaminant action level 1.3 ppm. Measurements at taps from homes with copper pipes were 0.5 ppm or less.
*** Maximum contaminant action level 15 ppb. Measurements at taps from homes with lead based solder were 3 ppb or less.
**** Water with less than 75 parts per million as calcium carbonate is considered soft (42 ppm is equivalent to 2.5 grains/gal).
***** Includes 25 different pesticides and PCBs, 8 herbicides and 54 VOCs with a variety of MCLs.

DEFINITIONS:

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.

n/a: Not applicable

n/d: Not detectable at testing limit

ppm: Parts per million or milligrams per liter (mg/L). 1 ppm is equivalent to 1 drop in 10 gallons.

ppb: Parts per billion or micrograms per liter (μg/L). 1 ppb is equivalent to 1 drop in 10,000 gallons

NTU: Nephelometric Turbidity Units - a measure of the cloudiness of the water.

CHLORINE DISINFECTION

Port Townsend has disinfected its drinking water with chlorine since 1929. Chlorination, the standard disinfectant for water systems around the world, is the treatment that eliminated water-borne diseases such as cholera and typhoid fever from this country in the early part of this century.

Chlorine reacts with naturally occurring organic material in water, such as decaying leaves, to produce chemicals called trihalomethanes, or THMs. These disinfection byproducts include a variety of compounds. Chloroform is one such compound. Scientific research today concludes these byproducts may, in the long-run, increase a person's risk of cancer. Due to this potential risk, THMs are regulated. State and federal standards currently regulate the level of disinfection byproducts to 80 parts per billion. See the report for monitoring results.

City of Port Townsend
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REPORTING

To comply with the Safe Drinking Water Act amendments, the City of Port Townsend is issuing an annual report on water quality monitoring performed during the past year. The purpose of the report is to educate consumers about their drinking water and the need to protect this precious resource.

Big Quilcene River Diversion

More Information

The City of Port Townsend=s water meets or exceeds all EPA and State drinking water health standards. We are happy to answer any questions you may have about drinking water quality. Please call the Port Townsend Water Quality Department at 379-5001