



This report was prepared by:
City of Snohomish
116 Union Avenue
Snohomish, WA 98290

Quality First

Once again we are proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2010. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all of our water users. Thank you for allowing us to continue providing you and your family with quality drinking water.

We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions or concerns, we are always available to assist you.



For more information about this report, or for any questions relating to your drinking water, please call Ann Ray, Water Quality Control Specialist, at (360) 568-7070 x232.

Community Participation

You are invited to participate in our public City Council meetings and voice your compliments or concerns about our drinking water. We meet on the first and third Tuesday of each month, beginning at 7:00 p.m., at the Snohomish School District Resource Center in the George Gilbertson Room, 1601 Avenue D, Snohomish, Washington 98290.

Where Does My Water Come From?

The City of Snohomish has two sources for providing drinking water: the Pilchuck River and water purchased from the City of Everett.

The City of Snohomish surface water treatment plant is located about 16 miles northeast of the city, near Granite Falls on the Pilchuck River. The plant (built in 1981) treats an average of 275,000 gallons of water daily, drawn from the Pilchuck River at the weir dam (built in 1936), and sends it through 16 miles of transmission main to reservoirs with the capacity to hold over six million gallons of water. It is then distributed to the south pressure zone, which is generally the area south of Tenth Street and includes the outlying areas of Ludwig Road, Sexton Road, 92nd Street, and Airport Road.

The area north of Tenth Street – the north pressure zone – is supplied with water purchased from the City of Everett. This water is delivered directly to customers and is stored in a 2.7-million-gallon reservoir located off of Terrace Avenue.

City of Everett water is supplied from Spada Reservoir, which was created in 1965. The reservoir holds about 50 billion gallons of water and is located about 30 miles east of Everett in the Sultan Basin Watershed. From Spada Lake, the water flows through about 7 miles of tunnels and pipelines to Chaplain Reservoir, where the City of Everett water treatment facility is located. Chaplain Reservoir holds about 4.5 billion gallons of water.

Lead and Drinking Water

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. We are responsible for providing high-quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, 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. 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

Substances That Could Be in Water

In order to ensure that tap water is safe to drink, the U.S. EPA and/or the Washington State Department of Health prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include: Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife; Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; Pesticides and Herbicides, which may come from a variety of sources, such as agriculture, urban stormwater runoff, and residential uses; Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, septic systems; and Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Water Conservation

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.

Turn off the tap when brushing your teeth.

Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.

Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.

Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

Water Treatment Process

The treatment process for providing safe, quality drinking water consists of a series of steps. First, raw water is drawn from our water source (Pilchuck River) and sent to a mixing tank where Alum, polymer, and soda ash are added. The addition of the Alum and polymer causes small particles to adhere to one another (referred to as floc), making the particles large enough to be removed from the water by filtration. The addition of soda ash adjusts the pH of the water, making it less corrosive to pipes and plumbing. Next, the water is filtered through layers of gravel, sand, and fine coal, to remove floc created in the first step. Finally, chlorine is added for disinfection to remove harmful viruses and bacterial parasites that may remain in the water following filtration.

What's a Cross-connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers or garden chemicals.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention assemblies, are installed and maintained. For more information, review the Cross-Connection Control Manual from the U.S. EPA's Web site at <http://water.epa.gov/infrastructure/drinkingwater/pws/crossconnectioncontrol/index.cfm>. You can also call the Safe Drinking Water Hotline at (800) 426-4791.

2010 WUE Update on Progress

The City of Snohomish has an ongoing commitment to preserving our precious natural resources. For the last several years, the city has put an additional emphasis on using water efficiently. Over the course of 2007, the City of Snohomish completed an update to its Water Conservation Program, creating the Water Use Efficiency Program to comply with the Water Use Efficiency Rule. Our program is a joint effort that runs parallel with the City of Everett Regional Water Use Efficiency Program. The program includes regional appliance rebates, specialized conservation curriculum for the schools, and we are working hard through public education and outreach to share some simple tips that can be used everyday to help our residents and business owners conserve water, these simple actions, including indoor/outdoor conservation kits, help both the consumer and the community as a whole.

We are three years into our six year plan and are happy to share that we have met and exceeded our savings goals for 2010. To date, we have met and exceeded our portion of the regional goals for each year we have been participating.

If you have any questions or would like a copy of the City of Snohomish WUE program or Annual Report, please contact Ann Ray at (360) 568-7070 x232.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.

Information on the Internet

The U.S. EPA Office of Water (www.epa.gov/watrhme) and the Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation and public health.

Sampling Results

During the past year, we have taken many water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state allows us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES									
				City of Snohomish		City of Everett			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2010	[4]	[4]	0.58	0.01–1.43	0.6	0.1–1.0	No	Water additive used to control microbes
TTHMs [Total Trihalomethanes] ¹ (ppb)	2010	80	NA	38.5	21.8–59.8	35.6	27.3–44.0	No	By-product of drinking water disinfection
Haloacetic Acids [HAA] ¹ (ppb)	2010	60	NA	27.11	23.9–37.7	33.3	22.6–45.6	No	By-product of drinking water disinfection
Nitrate (ppm)	2010	10	10	0.094	NA	<0.080	<0.100–0.114	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Coliform Bacteria ² (% positive samples)	2010	5% of monthly samples are positive	0	ND	NA	1.6	NA	No	Naturally present in the environment
Turbidity ³ (NTU)	2010	TT	NA	0.28	ND–0.28	0.10	ND–0.10	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2010	TT	NA	100	NA	100	NA	No	Soil runoff
Tap water samples were collected for lead and copper analyses from sample sites throughout the community									
				City of Snohomish		City of Everett			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/ TOTAL SITES	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2009	1.3	1.3	0.139	0/20	0.188	0/108	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2009	15	0	1	0/20	3	2/108	No	Corrosion of household plumbing systems; Erosion of natural deposits
SECONDARY SUBSTANCES (CITY OF EVERETT)									
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE		
Fluoride ⁴ (ppm)	2010	2.0	NA	0.9	0.7–1.1	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories		
UNREGULATED SUBSTANCES (CITY OF SNOHOMISH)									
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE					
Sodium (ppm)	2009	20.3	NA	Naturally present in the environment					

¹ Haloacetic acids and trihalomethanes form as by-products of the chlorination process that is used to kill or inactivate disease-causing microbes. The results for TTHM and HAA5 reported here are from the four City of Everett and two City of Snohomish locations monitored to determine compliance with the current regulation.

² Total coliform bacteria monitoring is used by the City of Everett to track microbial quality in the water distribution system. Everett collects 120–125 samples per month. Not more than 5 percent of the monthly total can be positive for total coliforms. Two routine total coliform samples collected in August 2010 were positive. Both locations were retested and the results were negative. No total coliform was detected in the remainder of 2010.

³ Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

⁴ Fluoride is added to City of Everett water in carefully controlled levels for dental health.

Definitions

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

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.