



ANNUAL

WATER QUALITY REPORT

Water testing performed in 2008

Presented By:

SILVERDALE WATER
DISTRICT



PWS ID#: WA793006

Meeting the Challenge

We are once again proud to present to you our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2008. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal drinking water standards. We continually strive to adopt new and better methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please share with us your thoughts about the information in this report. After all, well-informed customers are our best allies.

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.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet at 9:00 a.m. the first Thursday of each month at 5300 NW Newberry Hill Rd., Silverdale, WA 98383.

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 board of health prescribes 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, and septic systems;

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.



Where Does My Water Come From?

Silverdale Water District's customers are fortunate because they enjoy an abundant groundwater supply. Our 15 wells are drilled in three distinct zones: the Shallow Aquifer, the Sea Level Aquifer, and the Deep Aquifer. These aquifers are not exposed to air and are not subject to direct pollution and contamination. In fact, groundwater is the highest quality water available to meet the public health demand of water intended for human consumption.

The state has determined that Silverdale Water District's sources have a low to moderate risk of contamination. A copy of the assessment is available at the district office.

Reservoir Upgrades

Silverdale Water District strives to provide you, our customers, with the highest quality and most secure water possible. Silverdale Water completed upgrading all of its drinking water reservoirs in 2008. These upgrades were designed to make the reservoirs more resilient to damage and failure in the face of a major earthquake. Before the reservoirs were put back into service, Silverdale Water District completed both bacteriological and volatile organic compound testing. None of the reservoirs tested positive for total coliforms. Trace amounts of Ethylbenzene and Xylene were found in one of the reservoirs. Ethylbenzene and Xylene are used in paint coatings and can leach from paint into water. The leaching will occur if the coating is not fully cured when the reservoir is filled with water. Silverdale Water District believes that the unusually cool spring of 2008 kept the reservoir coating from curing completely, thus allowing a small amount of Ethylbenzene and Xylene into the water. These trace amounts were well below the MCL and have since dissipated. Additional testing performed 3 months later found no traces of Ethylbenzene or Xylene.

What's Your Water Footprint?

You may have some understanding about your carbon footprint, but how much do you know about your water footprint? The water footprint of an individual, community, or business is the total volume of freshwater used to produce the goods and services that an individual or community consumes or that a business provides. For example, 11 gallons of water are needed to irrigate and wash the fruit in one half-gallon container of orange juice. Thirty-seven gallons of water are used to grow, produce, package, and ship the beans in that morning cup of coffee. Two hundred and sixty-four gallons of water are required to produce one quart of milk, and 4,200 gallons of water are required to produce two pounds of beef.

According to the U.S. EPA, the average American uses about 100 gallons of water daily. In fact, in the developed world, one flush of a toilet uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking. The annual American per capita water footprint is about 8,000 cubic feet; that is twice the global per capita average. With water use increasing six-fold in the past century, our demands for freshwater are rapidly outstripping what the planet can replenish.

To check out your own water footprint, go to www.h2oconserve.org, or visit www.waterfootprint.org to see how the water footprints of other nations compare.



Questions?

For more information about this report, or for any questions relating to your drinking water, please call Skip Beahm, Operations Manager, at (360) 447-3500.

Water Wise Landscape Tips

A slight adjustment to your lawn mower can dramatically improve lawn survival during a drought and reduces water demand. Encourage deeper rooting by raising the mower blade during dry weather. Maintain sharp mower blades as dull blades shred leaf tips, causing the turf to use more water than necessary.

- Aerate your lawn. Aeration improves the movement of water and nutrients into the soil, decreases run-off, and encourages the roots of grass to grow deeply and to become drought tolerant;
- Soak, don't sprinkle. When you water, aim the nozzle at the base of the plants so more water will reach the roots;
- Plant choice is important. Choose water wise plants that can tolerate heat and dry spells, better yet choose native plants that also reduce the need for chemical applications and naturally grow healthy plant material.
- Maintain healthy soil. Healthy soil holds water well, provides nutrients, is aerated to allow water to penetrate several inches, and has large particles that allow water to flow and be absorbed.
- Think of mulch as sun block for plant roots. Just two to four inches of mulch can substantially retain soil moisture, slow evaporation, and protect roots from overheating, which is especially helpful to ornamentals and vegetables.
- Control your weeds by pulling them early and applying mulch. Weeds are thieves. They steal nutrients and water from your grass and other plants.
- Avoid heavy pruning. Pruning stimulates growth, so plants require more water. Make sure you prune your trees and shrubs in the dormant (winter) season before the summer weather season.
- Adding a light top dressing of compost or organic fertilizer does

wonders. It reduces thatch buildup on lawns, improves soil texture, and increases root mass and surface area. "Top dress" your lawn and plant areas early in the year when conditions are wet. Avoid high Nitrogen and Phosphorus fertilizers as these can degrade water quality.

Irrigation Systems Tips

- Don't water in the heat of the day. You will only lose water to evaporation. If you have an automatic system, set it to come on in the evening or early morning.
- Turn off the sprinkler systems when it rains. Install an inexpensive rain sensor shut-off switch.
- Check to see if your lawn sprinklers are working properly. Test your sprinkler by making sure it goes edge to edge and doesn't water the street instead of your lawn. Sometimes all it takes is to adjust the sprinkler head to make sure it has uniformity.
- Using more efficient irrigation techniques. Drip irrigation systems, automatic controllers with rainfall sensors, and soaker hoses all successfully achieve more efficient irrigation and reduce water loss from evaporation. Individual plants that are visibly stressed also benefit from hand watering.
- Lawns, plants, and shrubs need no more than one inch of water every 7 to 10 days to remain healthy. To determine one inch of water, place a small shallow pan in the path of your lawn sprinkler. Monitor the time that it takes to fill the pan to a one inch depth. Use this as a guide for each sprinkler in your yard. If water begins to run off before one inch is collected, turn off the water and allow the soil to absorb the surface water before returning to finish the one inch accumulation.

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, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continually jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed all industrial, commercial, and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test each backflow preventer to make sure that it is providing maximum protection.

For more information, review the Cross-Connection Control Manual from the U.S. EPA's Web site at www.epa.gov/safewater/crossconnection.html. You can also call the Safe Drinking Water Hotline at (800) 426-4791.

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. Silverdale Water District is 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 or at www.epa.gov/safewater/lead.

How Long Can I Store Drinking Water?

The disinfectant in drinking water will eventually dissipate even in a closed container. If that container housed bacteria prior to filling up with the tap water the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.



Sampling Results

We are pleased to report that during the last year, the water delivered to your home or business complied with, or did better than, all state and federal requirements. The table below shows only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contaminant Level (MCL) set by the U.S. EPA, we feel it is important that you know exactly what was detected and how much of the substance was present in the water. The state requires us to monitor for certain substances less than once per year because the concentration 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 collected.

REGULATED SUBSTANCES¹

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic ² (ppb)	2007	10	0	6	3–6	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Ethylbenzene (ppb)	2008	700	700	1.86	1.86–1.86	No	Petroleum products
Haloacetic Acids [HAA] (ppb)	2008	60	NA	5.04	1.39–5.04	No	By-product of drinking water disinfection
Nitrate (ppm)	2008	10	10	1.88	0.61–1.88	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Coliform Bacteria (# positive samples)	2008	1 positive monthly sample	0	1	NA	No	Naturally present in the environment
Xylenes (ppm)	2008	10	10	0.00894	0.00894–0.00894	No	Petroleum products

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2006	1.3	1.3	0.19	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2006	15	0	4	1/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Manganese ³ (ppb)	2007	50	NA	100	20–100	No	Leaching from natural deposits

¹We were required by the U.S. EPA to conduct an evaluation of our distribution system. This is known as an Initial Distribution System Evaluation (IDSE) and is intended to identify locations in our distribution system that have elevated disinfection by-product concentrations. Disinfection by-products (e.g., HAAs and THMs) result from continuous disinfection of drinking water and form when disinfectants combine with organic matter that naturally occurs in the source water.

²While your drinking water meets the U.S. EPA's standard for arsenic, it does contain low levels of arsenic. The U.S. EPA's standard balances the current understanding of

arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

³Manganese was detected in our water supply at levels exceeding the established state secondary MCL, which were set to protect against unpleasant aesthetic effects such as color, taste, odor, and staining of plumbing fixtures (e.g., tubs and sinks) and of clothing during laundering. There are no adverse health effects expected with this exceedance.

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.

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).