

NORTHSHORE UTILITY DISTRICT
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Northshore Utility District Annual Water Quality Report

May 2002

Dear Customer:

Northshore Utility District is pleased to submit our fourth annual Water Quality Report to you, our valued customer.

This report contains information about the overall condition of your drinking water. We hope you find this data helpful and informative. We encourage you to take a few minutes to review it.

Northshore Utility District remains committed to providing you with high quality drinking water. This report reflects our commitment. If you have any questions, comments or suggestions about the Water Quality Report, please contact our Water Quality / Safety Coordinator, Mick Holte at (425) 398-4417.

[Inside Information...](#)

Sincerely,

A handwritten signature in black ink that reads 'Margaret R. Wiggins'.

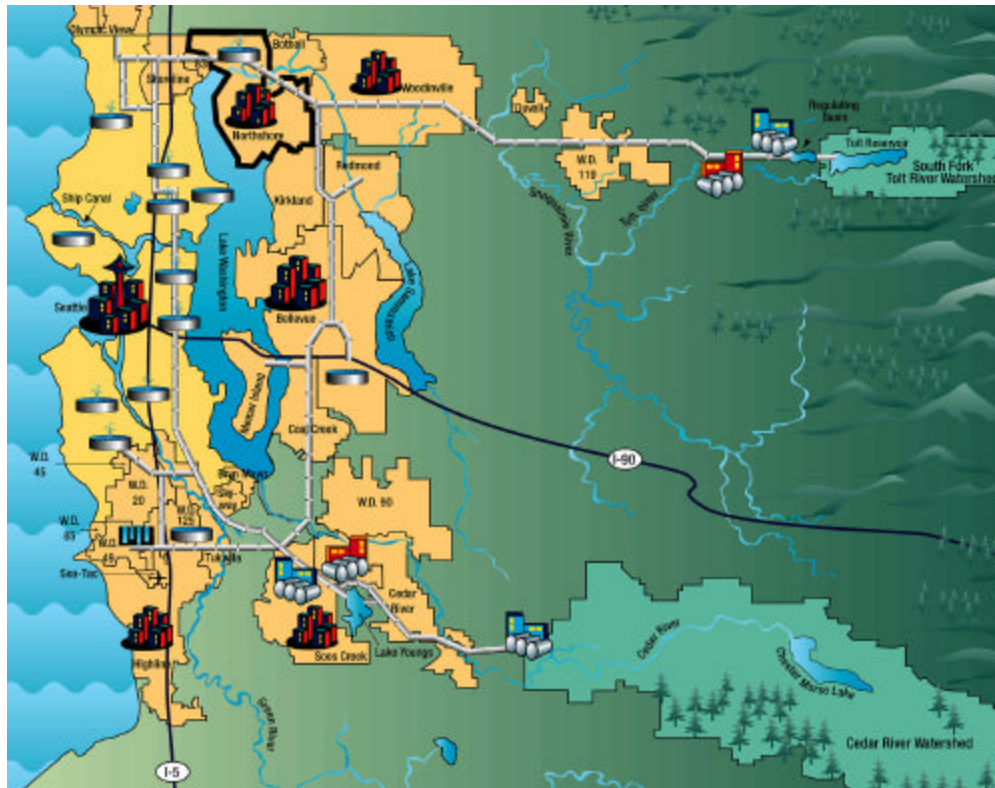
Margaret R. Wiggins, President
Board of Commissioners
Northshore Utility District

Board of Commissioners

Margaret R. Wiggins, President
Kinnon W. Williams, Secretary
Don Ellis
D. Bruce Gardiner
Trudy C. Rolla

- ◆ Water Sources
- ◆ Water Quality
- ◆ Health Issues
- ◆ Residential Monitoring
- ◆ Water Conservation
- ◆ Cross Connection Control

Northshore Utility District - Water Source



Seattle Public Utilities (SPU) provides drinking water to approximately 1.3 million people in the Seattle metropolitan area. The Cedar River Reservoir and the South Fork Tolt River Reservoir supply almost all of SPU's water. These two surface water sources are located in remote, uninhabited areas of the Cascade Mountains. An aggressive watershed protection program is strictly enforced; no agricultural, industrial or recreational activities are allowed.

Northshore Utility District receives water primarily from the South Fork Tolt River Reservoir source. Occasionally, Cedar River water is used, depending on snow pack accumulations, drought conditions and the availability of water transmission lines. Both water sources receive treatment consisting of chlorine disinfection, fluoride addition, and pH adjustment.

SPU provides high quality drinking water. In order to meet new water quality requirements and improve the overall reliability of the system, significant improvements have been made and other will be made in the future.

- ◆ Tolt Filtration Plant – completed and on line in December 2000. DOH accepted February 21, 2001;
- ◆ Cedar Treatment Project – will include the installation of improved filtration and high tech disinfection by 2004.

More information on these projects can be found on SPU's web site at www.ci.seattle.wa.us/util/.

Northshore Utility District – Water Quality Maintenance Programs

Northshore customers enjoy water of very high quality. After the water reaches our District, Northshore takes the following measures to ensure that it stays clean and pure:

- ◆ Each year all of our water main lines are flushed to remove any sediment build-up.
- ◆ All new water lines are disinfected, flushed and sampled before they are brought into service.
- ◆ All of our reservoirs (water storage tanks) are routinely sampled.
- ◆ All reservoirs and tanks are cleaned, disinfected and painted on a regular schedule.
- ◆ A District Water Quality Coordinator schedules daily water quality tests.
- ◆ Older steel main line pipes have been replaced with ductile iron, which is more resistant to corrosion and leaks.
- ◆ Each month, a total of at least 49 samples are collected from eight separate locations throughout our District. The samples are tested by Seattle Public Utilities for water temperature, pH, and chlorine residual, and shipped to their laboratory for coliform bacteria testing.

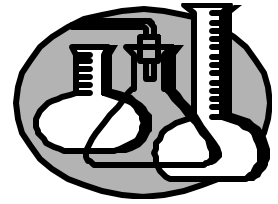


FAQ's – Frequently Asked Questions

- ◆ How can I get more involved in decisions affecting my drinking water?
There are Board of Commissioner meetings each month – on the 1st and 3rd Monday at 6:00 pm in the Northshore Room at Northshore Utility District in Kenmore. We welcome you to attend these meetings.
- ◆ Why does my water occasionally appear white or cloudy?
Air in the water can cause a milky appearance. Water that contains dissolved air is delivered to our homes under pressure. Turning on the faucet releases the pressure, causing air bubbles to appear. Like the carbon dioxide in soft drinks, the tiny bubbles rise to the surface. Clearing begins at the bottom of the container and within a couple of minutes the water is clear.
- ◆ Does bottled water have contaminants?
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contamination does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Hotline at 1-800-426-4791.
- ◆ Why does my water taste or smell like chlorine?
Chlorine is used by water utilities throughout the world to prevent disease-causing microorganisms from growing inside water lines. Chlorination of surface water supplies is required by the Washington State Department of Health. There may be an odor of chlorine when you first turn on your tap, especially in the morning. However, the odor should rapidly dissipate and you should not be able to taste it. If your water has an objectionable taste or odor, please check for cross connections or call the District's Water Quality / Safety Coordinator at (425) 398-4417.
- ◆ Is Fluoride added to our drinking water?
Yes. One part per million is added to reduce tooth decay. A 1968 Seattle referendum requires the addition of fluoride.

Northshore Utility District – Health Issues

The Washington State Department of Health (WDOH) is responsible for conducting source water assessments for all water supplies in the state by 2003. WDOH has not yet conducted these for Seattle's sources, but they have completed vulnerability assessments. Seattle's surface water and groundwater sources have been given the designation of "low vulnerability" for organic and inorganic contamination.



The sources of all 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 can pick up substances resulting from the presence of animals or human activity.

In the Tolt and Cedar water supplies these potential contaminants may include:

- ◆ Microbial contaminants, such as viruses and bacteria, from wildlife;
- ◆ Inorganic contaminants, such as salts and metals, which are naturally occurring;
- ◆ Organic contaminants that are by-products of disinfection processes; and
- ◆ Radioactive contaminants that can be naturally occurring.

The presence of contaminants does not necessarily indicate that water poses a health risk.

(*Cryptosporidium parvum*) "*Crypto*" is a disease-causing organism commonly found in the natural environment. Most rivers and streams across the country have detectable concentrations.

Cryptosporidium sources include deer, elk and voles in the watersheds. There have been no disease outbreaks associated with Seattle's drinking water. Chlorination is ineffective against *Cryptosporidium*; however, Seattle uses ozonation to disinfect water on the Tolt supply and will use it on the Cedar supply by 2004. Ozonation is very effective at destroying *Cryptosporidium* and other microbes.

Source water monitoring in 2001 detected *Cryptosporidium* in seven of the 22 samples collected from the Cedar supply, with a maximum concentration of 12 organisms per 100 liters (25 gallons).

Cryptosporidium was not detected in any of the five samples from the Tolt supply thanks to the new treatment plant. These levels are relatively low compared to typical rivers and streams throughout the country.

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. To ensure that tap water is safe to drink, EPA adopts regulations setting the water quality standards for public water systems.

Information on *Cryptosporidium* and other microbial contaminants are available from the Environmental Protection Agency's Safe Drinking Water Hotline at [1-800-426-4791](tel:1-800-426-4791).

Northshore Utility District – 2001 Water Quality

Seattle Public Utilities 2001 water quality monitoring results, listed in the table below, confirmed that there were no contaminants at or above established levels of concern for the general public. Turbidity is also monitored and is a measure of clarity in the water. It has no direct health effects, however, it is an overall indicator of water quality. South Fork Tolt River has a greatly reduced turbidity level with the new treatment plant, and the Cedar River source has seasonal fluctuations but generally has low turbidity.

Detected Parameter & Units		Cedar Water		Tolt Water		Typical Sources
		MCLG	MCL	AVG	Range	
2001 Water Quality Monitoring Results						
For water samples: 1 mg/l = 1000 µg/l ppm = parts per million, or milligrams per liter – mg/l ppb = parts per billion, or micrograms per liter – µg/l						
CLARITY – Measured Before Treatment						
Turbidity, NTU	NA	TT	0.8	0.3 - 3.9	0.7	0.04 – 0.3 Soil runoff
INORGANIC AND ORGANIC PARAMETERS – Measured After Treatment						
Fluoride, ppm	4	4	1.0	0.9 - 1.1	1.0	0 - 1.5 Water additive that promotes strong teeth. SPU target is 1 mg/L.
Nitrate, ppm – one sample	10	10	0.04		0.18	Erosion from natural deposits
MICROBIAL PARAMETERS – Measured in the Distribution System						
Total Coliform, % positive samples - Combined distribution system	0	5%		Highest month = 1.82% Annual = 0.16%		Naturally present in the environment
DISINFECTION BY-PRODUCTS – Measured in the Distribution System						
Total Trihalomethanes, ppb	NA	80	NA	NA	61	20 - 40 By-product of drinking water chlorination
NA – not applicable						TT – Treatment Technique

TABLE 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.

NTU – Nephelometric Turbidity Unit

The unit of measurement for turbidity.

TT – Treatment Technique

A required process intended to reduce the level of a contaminant in drinking water.

If you would like a copy of the list for the undetected contaminants, please call (425) 398-4417. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems and may have an increased risk of cancer. With the completion of the Tolt Filtration in December 2000, the TTHM's were greatly reduced.

Northshore Utility District – Residential Lead, Copper & Radon Monitoring

The Tolt and Cedar source waters **do not** contain lead or copper. However, lead and copper can leach into residential water from building plumbing systems. Lead and copper monitoring is conducted at homes categorized as high risk, most recently in 1997. Compliance is determined on a regional basis.

As part of regional monitoring conducted in 1992 and 1997, the drinking water in “high risk” homes was tested for lead and copper under “worst case” conditions. Fourteen percent of these regional homes exceeded the allowable level for lead. Because of this, Northshore Utility District sends out annual public education materials regarding lead and your drinking water.

Homes or buildings that were built or replumbed with copper pipes and lead-based solder prior to 1985 are considered, “high risk.” Lead solder was banned in King County during 1985. “Worst case” conditions are defined as when water has not been used and has been sitting stagnant in the pipes for six hours or longer – such as first thing in the morning. The risk decreases as the plumbing ages. If you do not have copper plumbing, you are at low risk.

If your home is considered “high risk,” you may want to flush out any water that has been sitting for six hours or longer, prior to using for cooking or drinking. You can run the water for approximately 30 seconds in order to flush out the plumbing lines. The flushed water should not be consumed as it may contain dissolved metals. However, this water can be used for watering plants or washing dishes. If your home is not “high risk,” you may still be at some risk from lead being leached from brass faucets. In this case, you only need to run 6-8 ounces of water in order to flush out any contaminants.

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.

The 90th percentile means that 90 percent of the homes had concentrations below the reported value, and ten percent of the homes had concentrations above the reported value. Seattle’s planned treatment improvements should further reduce the corrosiveness of the water to your plumbing materials, which we expect to meet the Action Levels in the future.

LEAD AND COPPER				
			<i>Combined Regional Monitoring Program Results</i>	
Parameter & Units	MCLG	Action Level	90 th percentile	# of homes exceeding action level
Lead, ppb	0	15	19.3	53 of 390 (14%)
Copper, ppm	1.3	1.3	0.6	0 of 390

Sources of Contamination: Corrosion of household plumbing systems.
Lead & copper data from 1997 sampling at customer's taps. Next sampling will be in 2003-2004.

Although we are not required to test for radon, we have tested each of our sources to determine its occurrence. Monitoring shows that radon is not present in either the Cedar or Tolt water supplies.

Northshore Utility District – Water Conservation

With our above average precipitation this winter and spring, there is a heavy snow pack in the mountains and our storage reservoirs are at desired level. The outlook for our regional water supply for the summer is excellent, but it is still a good idea to conserve whenever possible. Water conservation is an ongoing effort because it helps us to make the most of our existing water supplies, saves you money, and keeps water in the streams for salmon. Northshore offers rainbarrels, showerheads, conservation kits, and a variety of conservation items for our customers. Visit our web site www.nud.net or call 425-398-4419 to learn more. Here are some tips that will help you to make a difference:

- ◆ Repair all leaks promptly.
- ◆ Don't use the toilet as a wastebasket.
- ◆ Water your lawn early in the morning or consider letting your lawn go dormant in the summer.
- ◆ If it's time to replace your clothes washer, purchase a high-efficiency model.
- ◆ Wash full loads of clothes and dishes.
- ◆ Turn off the water while brushing your teeth.
- ◆ Take shorter showers or shallow baths.
- ◆ Call our lawn watering hotline at (425)398-4400 during the summer to hear the most up-to-date watering information.
- ◆ Visit www.nud.net or www.savingwater.org for more conservation tips.

Additional Water Quality Information

- | | |
|---|--|
| ◆ Northshore Utility District
6830 NE 185th ST
Kenmore, WA 98028-2701 | Phone #: 425-398-4400
Website: www.nud.net
e-mail: mholte@nud.net |
| ◆ Seattle Public Utilities | Website: www.ci.seattle.wa.us/util/ |
| ◆ Washington State Department of Health | Website: www.doh.wa.gov/ehp/dw/ |
| ◆ Environmental Protection Agency
Safe Drinking Water Hotline | Website: www.epa.gov/safewater
Phone #: 1-800-426-4791
e-mail: hotline-sdwa@epamail.epa.gov |



Northshore Utility District Facility



Northshore Utility District – Fast Facts

- ◆ Northshore Utility District has very soft water at less than one grain of hardness per gallon
- ◆ Capacity of the District's reservoirs and water tanks - 29 million gallons (5 day supply)
- ◆ Number of water connections - 18,946 serving approximately 65,000 residents
- ◆ Miles of water pipeline - Approximately 250
- ◆ Miles of sewer pipeline - Approximately 230
- ◆ Service area - 17 square miles
- ◆ Peak water usage - 11 million gallons per day (mgd)
- ◆ Average daily water usage - 5.5 mgd

Working Together to Control Cross Connections

It is not enough to receive high quality drinking water from the treatment plant. Water agencies must also maintain the quality of drinking water within the many miles of water pipes that supply water to each home and business. One way to accomplish this goal is to prevent pollutants from entering the District's water supply through "cross connections." A cross connection is any point in a plumbing system where drinking water is connected to a pollutant. An example of a cross connection is a garden hose submerged in a full swimming pool. The pool water is the pollutant and the cross connection is the point where the hose enters the pool.

Generally a public water system is pressurized to a point where water can only flow in one direction - into a facility. However, water system pressure can occasionally drop to a point where a pollutant inside of a facility's plumbing system is pulled back into the public water supply. Water pressure drops when a large amount of water quickly flows through a hydrant or a leak. Using the previous example, the pool water can actually be sucked through the submerged hose back into a non-pressurized public water system. Pollutants can also be pushed back into the drinking water when the pollutant is at a higher pressure than the public water system. Pumps, boilers, elevation difference, or air can create pressures greater than the public water system.

To prevent pollutants from flowing backwards into the public water system, "backflow prevention assemblies" must be installed on all known cross connections. Common residential cross connections include irrigation systems, fire suppression systems, boilers, swimming pools, and garden hoses. Industrial and commercial facilities often have additional types of cross connections. Washington State law requires water customers with cross connections within their plumbing system to install the appropriate type of backflow prevention assembly to protect the public water supply. Northshore Utility District staff can help customers determine the proper type and placement of backflow prevention assemblies. Once installed, most types of backflow prevention assemblies require annual testing to ensure they function properly.

If you have questions about cross connection control or water quality, please call Mick Holte (Water Quality Coordinator) at 425-398-4417. With your help we can all continue to enjoy excellent water quality within our public water system.