



LAKEHAVEN UTILITY DISTRICT 2005 ANNUAL WATER QUALITY REPORT

July 1, 2006, Issue 8

Drinking Water For the Health and Safety of Our Community

Lakehaven Utility District is pleased to present our eighth annual Water Quality Report that summarizes water quality provided in 2005. We have devoted our service to provide our customers with high-quality drinking water that has consistently received an excellent record of compliance with all state and federal drinking water regulations. We believe it is very important to protect our water supplies and provide our customers with a clear understanding of where the water comes from and what is in the water.

This report is a review of all water quality tests performed in 2005 and is provided to you to comply with Federal and State drinking water regulations. All community water systems must provide a Consumer Confidence Report to their customers and the State Office of Drinking Water by July 1 of each year. The purpose of this report is to provide you, the consumer, with a summary of where your water comes from and how safe and pure your water was during the previous operational year (2005). Much of this information in our water quality report is detailed as required by law. However, we have tried to make an effort to keep it clear, useful and readable for our valued customers.

Where Does Your Water Come From?

During 2005, Lakehaven Utility District supplied 97% of the water that was delivered to our customers from deep wells that are owned and operated by the District. During November and December of 2005, a small amount of water was also supplied from Tacoma through our share of the Second Supply Project (SSP). Water supplied from Tacoma only accounted for 3% of the total water provided to Lakehaven customers in 2005. The

water from Tacoma may not be a constant source of water available for Lakehaven and is not intended to replace our groundwater supply. Rather, it is considered another "alternate source" and its availability can be interrupted due to drought conditions, low river flow volumes in the Green River, and higher turbidity or other water quality issues. Lakehaven will continue to utilize water from Tacoma through the Second Supply Pipeline to better manage our local water resources and help reduce the demand on

our existing groundwater system. This will allow some of our aquifers to rest and recharge during the winter months so that more groundwater will be available in the future when we need it (especially during summer drought periods).

Our deep wells are owned and operated by Lakehaven Utility District and the water pumped from these wells originates from four deep underground aquifer systems located below the Federal Way area: (1) Redondo-Milton Channel

Aquifer, (2) Mirror Lake Aquifer, (3) Eastern Upland Aquifer and (4) Federal Way Deep Aquifer (an aquifer is an underground water saturated zone that has a sufficient economic quantity available for use). At various times of the year the District is able to operate as many as 20 active wells that have been drilled in these four local aquifer systems. These have a total pumping capacity of about 21,500 gallons of water per minute (gpm) or 31.47 million gallons per day.

Safe and Secure Water

Wellhead Protection Program: Preventing pollution is the first priority in protecting our groundwater supply. The District has developed a Wellhead Protection Program intended to identify potential areas where surface water can more readily contribute to the storage of water in our underground aquifer systems and affect the quality of water pumped from our wells. Through this program, we are continuing to work on the development of an appropriate management plan to protect our water quality should a surface contaminant spill occur.

Water System Security: To assure that your drinking water supply remains safe and secure, Lakehaven Utility District has taken increased security measures to reduce the vulnerability of terrorism, sabotage, and vandalism to our drinking water supply.

Water Treatment Overview

Iron and Manganese Removal:

In 2005, the District added a treatment system that removes iron and manganese (oxidation followed by filtration) for two of our production wells. Four other wells have filter systems previously installed to remove iron and manganese and three additional wells are scheduled to have the same treatment systems installed in 2006. Iron and manganese are naturally occurring minerals found in most water systems that use groundwater. Normally the minerals are dissolved in the water, but once the water is pumped from the ground these minerals have a tendency to precipitate as a solid, which can cause staining of household fixtures and an accumulation of fine sediment in the distribution system. By 2007, iron and manganese removal systems will be installed at all of our wells to filter out these minerals where treatment is needed the most. By filtering the water we will be able to significantly reduce the accumulation of sediments in the distribution system and the potential staining that can occur to household fixtures.

Chlorine Treatment:

As an important component of our water treatment program, the Washington State Department of Health requires the addition of chlorine to our drinking water as a disinfectant to make sure that our water remains safe for our customers to use. Just as water is essential to life, chlorine is considered essential to maintaining a safe water supply. Public health officials overwhelmingly agree that the introduction of chlorine into U.S. drinking water supplies back in 1908 was one of our history's great public health advances. Since the beginning of its use, safe chlorinated water has played a key role in the virtual elimination of cholera, typhoid fever,

dysentery and gastroenteritis, as well as many other epidemic waterborne diseases that once killed tens of thousands of Americans annually. Although Lakehaven Utility District maintained good, high quality untreated drinking water in the past, the risk of waterborne disease decreases significantly when chlorine is used as a disinfectant for a public water supply.

Phosphate & Sodium Hydroxide Treatment

A component of our water treatment program includes the addition of phosphate to our water. Phosphate is used as a corrosion inhibitor to reduce the level of dissolved lead & copper ions that can

dissolve from metal plumbing and faucet fixture units commonly found in homes and businesses. Phosphate also performs a secondary function as a sequestering agent when added to our drinking water and is working to prevent the formation of stains and mineral deposits caused by dissolved iron and manganese minerals that are found naturally present in our groundwater supply. Sodium Hydroxide is added to groundwater pumped from some of our wells as a treatment process that raises the pH to make the water less acidic. Raising the pH with sodium hydroxide also reduces pipe corrosion and helps meet health requirements by minimizing the amount of lead and copper that can leach from customers' plumbing systems.

Fluoride

Fluoride is a natural element found in the earth's crust and is commonly found in various concentrations in raw water supplies (both surface and groundwater). Other than drinking water, toothpaste and food is a major source of fluoride exposure (especially tea and fish) and at low levels, fluoride has been known to prevent dental cavities. However, the natural fluoride levels in Lakehaven Utility District's source "groundwater" is considered lower than optimal for helping to prevent dental decay.

During November and December 2005, Lakehaven Utility District started using water from Tacoma through the Second Supply Pipeline (SSP). This secondary source of water from Tacoma contains fluoride that is equal to the US Public Health Service (USPHS) suggested range in drinking water of about 1 part per million (or 1.0 mg/L). However, the water blends with groundwater pumped from Lakehaven wells in the distribution system and fluoride levels may become diluted in some locations. If you have children on fluoride supplemental treatment, you may want to consult with your dentist or pediatrician about the variable fluoride concentrations that may be present in your drinking water.

The water from Tacoma may not be a constant source of water available for Lakehaven and is not intended to replace our groundwater supply. Rather, it is considered another "alternate source" and its availability can be interrupted due to drought conditions, low river flow volumes in the Green River, and higher turbidity or other water quality issues.



Frequently Asked Questions

My water looks yellow in my bathtub. Is it OK?

The bathtub is not a good place to judge water quality as the bathroom lighting and the color of the tub will distort the color of your water. The best way to judge water color is to fill a clear glass and hold it up to a light. If it is yellow, you may need to flush your hot water tank.

I live on a dead-end (cul-de-sac) and my water has a yellow tinge to it. Is it OK?

You should call the water district to have the dead-end main flushed. This will bring in fresh water through the system to improve the water quality.

What can I do about chlorine taste and odor?

Chlorine kills organisms that may cause disease. If you remove the chlorine with a filter, refrigerate the water to limit bacterial re-growth. You can also:

Fill a pitcher and let it stand in the refrigerator overnight. (This is the best way).

Fill a glass or jar with water and let it stand in sunlight for 30 minutes or heat the water to about 100 degrees Fahrenheit.

To ensure that tap water is safe to drink, EPA prescribes limits on the amount of certain contaminants in water provided by public water systems. The Federal Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

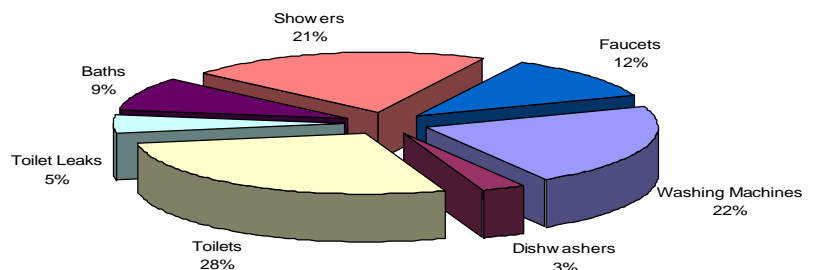
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

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 and 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 and bacteria, which may come from septic systems, agricultural livestock operations, and wildlife.
- ◆ Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban 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, stormwater runoff, and residential uses.
- ◆ Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.
- ◆ Radioactive contaminants can be naturally occurring or be the result of oil and gas production and mining activities.

Water Efficiency Ideas

- ◆ Install low flow toilets
- ◆ Consider purchasing a water/energy efficient clothes washer
- ◆ Repair leaky toilets and faucets
- ◆ Use water saving habits such as washing full loads only, turn off the faucet when you shave or brush your teeth, and take shorter showers
- ◆ Install low flow showerheads



IMPORTANT INFORMATION!

- ✓ Regular Board Meetings are held every 2nd and 4th Thursday of the month at:
Lakehaven Center
31531-1st Avenue South
Meetings start at 6:00 p.m.
- ✓ Lakehaven Utility District Water Quality Section:
(253) 946-5410
www.lakehaven.org
- ✓ Additional Water Information:
www.waterdata.com
- ✓ Department of Health Web Site:
www.doh.wa.gov/ehp/dw
- ✓ Environmental Protection Agency (EPA) Web Site:
www.epa.gov/safewater
- ✓ EPA Safe Drinking Water Hotline:
(800) 426-4791
- ✓ EPA Safe Drinking Water Hotline E-Mail:
Hotline-sdwa@epamail.epa.gov

2005 Water Quality Monitoring Results

What contaminants may be found in drinking water?

There is no such thing as naturally pure water. In nature, all water contains some impurities. As water flows in streams, sits in lakes, and filters through layers of soil and rock in the ground, it dissolves or absorbs the substances that it touches. Some of these substances are harmless. In fact, some people prefer mineral water precisely because minerals (which are chemical substances) give it an appealing taste. However, at certain levels minerals, just like man-made chemicals, are considered contaminants that can make water unpalatable or even unsafe.

What do the tables mean?

The following tables show the results of water quality analyses on your drinking water during 2005. Every regulated contaminant that was “**detected**” in the water during 2005, even in the most minute traces, is listed in these tables. The tables contains the name of each substance, the Maximum Contaminant Level or highest level allowed by regulation (MCL), the Maximum Contaminant Level Goals or ideal goals for public health (MCLG), the amount detected, the usual sources of such contamination, footnotes explaining our findings and a key to units of measurement. We are pleased to report that there were no EPA or State drinking water violations for Lakehaven Utility District in the year 2005. Definitions of MCL and MCLG are important.

The regulated items listed below were detected in Lakehaven’s water during 2005. Not listed are 59 volatile organic chemicals and 85 synthetic organic chemicals (including herbicides and pesticides) which Lakehaven Utility District tested for and that were not detected in the water. Additional information on all data can be obtained by calling Lakehaven Utility District at 253-946-5410.

<i>Contaminant</i>	<i>Date Tested</i>	<i>Unit</i>	<i>MCL</i>	<i>MCLG</i>	<i>Highest Detected Level*</i>	<i>Range of Level Detected</i>	<i>Major Sources</i>	<i>Violation</i>
Regulated At Groundwater Source (Wells)								
Arsenic	2005	ppb	50.0 ppb	N/A	4.0 ppb	0 – 4.0 ppb	Erosion of natural deposits in groundwater aquifer	NO
Nitrate	2005	ppm	10 ppm	10 ppm	2.0 ppm	0.0 – 2.0 ppm	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	NO
Fluoride	2005	ppm	4.0 ppm	4 ppm	0.2 ppm	0 – 0.2 ppm	Erosion of natural deposits in groundwater aquifer	NO
Regulated In The Distribution System								
Total Trihalomethane	2005	ppb	80.0 ppb	0 ppb	9.9 ppb Average	2.5 – 55.1 ppb	Disinfection By-product	NO
Halocacetic Acid	2005	ppb	60.0 ppb	0 ppb	8.4 ppb Average	0 – 53.0 ppb	Disinfection By-product	NO
Total Coliform	2005	P/A	<5% Positive	0% Positive	.0014%	0.0 - .0014%	Naturally Present in the Environment	NO
Secondary Chemical Analysis in the Distribution System								
National Secondary Drinking Water Regulations are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects such as taste, color or odor.								
Manganese	2005	ppm	0.05 ppm	0 ppm	0.18 ppm	0.03 ppm (FWA)	Natural Deposits	NO
Iron	2005	ppm	0.3 ppm	0 ppm	0.7 ppm	0.01 ppm (FWA)	Natural Deposits	NO
Chloride	2005	ppm	250 ppm	0 ppm	10 ppm	5.0 ppm (FWA)	Natural Deposits	NO
Sulfate	2005	ppm	250 ppm	0 ppm	36.0 ppm	22.4 ppm (FWA)	Natural Deposits	NO
Other Physical & Chemical Parameters Measured in 2005 (non-enforceable)								
*Sodium	2005	ppm	20 ppm Recommended	N/A	16 ppm	7.0 ppm (FWA)	Natural Deposits	NO
*Hardness as Calcium Carbonate	2005	ppm	“None”	N/A	185 ppm	105 ppm (FWA)	Natural Deposits	NO
pH	2005	-	6.5-8.5	N/A	7.9	7.2 (FWA)	Hydrogen Ion Activity	NO
Free Chlorine Residual	2005	ppm	4.0 ppm (MRDL)	4.0 ppm (MRDLG)	1.9 ppm	1.9 ppm (FWA)	Water Additive used to control microbes	NO

***Water Quality Table Footnotes:**

ppb: part per billion

ppm: part per million

Highest Detected Level: Represents the highest concentration (or flow weighted average) that was measured by laboratory analysis during the entire year of monitoring the quality of our water.

MCL: Maximum Contaminant Level – The highest level of a contaminant that is allowed in drinking water.

MCLG: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a safety of margin. There is no MCL established for Hardness or Sodium, although the EPA recommends less than 20 ppm of sodium per liter of water for people whose daily sodium intake is restricted.

(FWA)=Flow Weighted Average: An average of the proportional relevance of each contaminant and percent contribution.

MRDL: Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed in drinking water.

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 contamination.

NA: Not Applicable

Purchased “Surface” Water From Tacoma – Second Supply Line (SSP)

The following items listed below were detected at Tacoma Water’s Green River Supply Headworks’ Treatment Plant.

<i>Contaminant</i>	<i>Date Tested</i>	<i>Unit</i>	<i>MCL</i>	<i>MCLG</i>	<i>Highest Detected Level*</i>	<i>Range of Level Detected</i>	<i>Major Sources</i>	<i>Violation</i>
Unregulated at the Green River Treatment Plant								
Cryptosporidium	2005	Oocysts/100 liters	Not Regulated	Not Regulated	1	0 – 1 Oocysts/100 liters	Microbial Organism	NO
Regulated at the Green River Treatment Plant								
Fluoride	2005	ppm	4.0 ppm	0.8 – 1.3 ppm	1.19 ppm	0.0 – 1.19 ppm	Treatment Additive	NO
Turbidity	2005	*NTU	5 NTU	N/A	4.89 NTU	0.63 – 4.89 NTU	Natural Erosion	NO

***Water Quality Table Footnotes:**

ppm: part per million

NTU: Nephelometric Turbidity Unit is a standard unit to measure water clarity.

Cryptosporidium: A microscopic organism that, when ingested, can result in diarrhea, fever and other gastrointestinal symptoms. Tacoma Water has tested for Cryptosporidium in the Green River since 1993. Using the best available testing method approved by the U.S. Environmental Protection Agency and monthly sampling, Tacoma Water detected one Cryptosporidium organism in **untreated** Green River water in 2005. No evidence of actual Cryptosporidium-related health problems has been detected in areas served by Tacoma Water.

Key to Table

Action Level = (if exceeded, triggers treatment or other requirements which a water system must follow.)

MCL = Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal

ppm = parts per million, or milligrams per liter (mg/l) (1 drop in a 55-gallon drum)

ppb = parts per billion, or micrograms per liter (ug/l) (1 drop in 25,000 gallons)

pCi/l = picocuries per liter (a measure of radioactivity)

P/A = Present/Absent (Coliform Bacteria are reported as either present or absent in water samples)



Additional Water Quality Information

Washington State Department of Health Monitoring Waivers

Variations and Exemptions

In 2005, Lakehaven Utility District applied for and received special monitoring waivers for certain targeted wells for the 2005 - 2007 water quality monitoring periods from the Washington State Department of Health. These special monitoring waivers were granted for the purpose of reducing necessary sampling and testing raw groundwater for analysis of organic and inorganic chemicals and the more common insecticides, herbicides, and pesticides. The District received these waivers because groundwater from most District wells has a low susceptibility to contamination. In addition, state laboratory tests on our groundwater indicate that these chemicals are not detectable in our groundwater supply.

Additional Contaminants Monitored

Lakehaven Utility District also tests for other substances and microscopic organisms found in our groundwater for which no mandatory testing standards have been set. Many substances and microscopic organisms found in water may be a concern if they occur at high concentrations. Because of this, the District has been monitoring heterotrophic (HPC) bacteria in our water for many years. The HPC test measures a broad group of microorganisms that are commonly found in drinking water and this test is used by our "Water Quality Monitoring Program" as a tool to track the concentration of these "background" microorganisms in our distribution system. The EPA has determined that a well operated water system with a well maintained distribution system should have HPC bacteria populations of less than 500 colonies per milliliter (ml). A sample with a count higher than 500/ml is undesirable and should be investigated to determine the cause. During 2005 we sampled and tested for HPC bacteria each week (using a state certified laboratory and government approved techniques) and found our annual average concentration of these organisms is well below an average of 5 colonies per milliliter. To make sure these organisms remain in low concentrations, we'll keep testing and keep you informed.



Cryptosporidium

The Washington State Department of Health has not required Lakehaven Utility District to monitor or test for the presence of the protozoan Cryptosporidium in our drinking water supply because our groundwater (pumped from protected deep aquifers) is not vulnerable to this type of biological contaminant.

Radon

Currently, there is no state or federal regulation on radon in drinking water. However, Lakehaven Utility District is involved in testing our water for the presence of radon and will continue to research this issue. Radon is a naturally occurring radioactive gas that emits ionizing radiation. National and international scientific organizations have concluded that radon causes lung cancer in humans. Most of the radon in indoor air comes from the breakdown of uranium in soil beneath homes. Breathing radon from the indoor air in homes is the primary public health risk from radon. Radon from tap water is a smaller source of radon in indoor air. Only

about 1-2 percent of radon in indoor air comes from drinking water. However breathing radon released to air from household water uses increases the risk of lung cancer over the course of your lifetime. Ingestion of drinking water containing radon also presents a risk of internal organ cancers, primarily stomach cancer. This risk is smaller than the risk of developing lung cancer from radon released to air from tap water. If you are concerned about radon in the air in your home, you can personally test it yourself. It is inexpensive and easy to do. For more information about radon, call the EPA's Radon Hotline (800-SOS-RADON) or view their Internet site at <http://www.epa.gov/safewater/radon.html>.

Some people may be more vulnerable to contaminants in drinking water than is 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 (Center for Disease Control) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline.



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This report was prepared by the Lakehaven Utility District Water Operations Department. For more information, call our Water Quality Section of Lakehaven Utility District at 253-946-5410 or access our web site at www.lakehaven.org. Water Quality Data for community water systems throughout the United States is available at www.waterdata.com.