

# ANNUAL WATER QUALITY REPORT

*Water testing performed in 2008*



BURLINGTON DPW WATER  
DIVISION

100 YEARS OF SERVICE  
1908-2008



PWS ID#: VT0005053

## Meeting the Challenge

This annual water quality report comes on the anniversary of providing 100 years of service. 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.

## Where Does My Water Come From?

The City of Burlington is fortunate to have Lake Champlain as a source for our raw water. Lake Champlain extends from the Canadian border south along the western side of the state for nearly 120 miles. The City of Burlington is located near the widest portion of the lake. Our point of intake is located well beyond the Burlington Harbor, which prevents contaminants that may be present in the harbor from entering our system. The intake line is also located deep enough to prevent most surface contaminants from entering and to ensure a continuous supply of water even during the most severe drought conditions. The water entering our treatment plant is of high quality, which eliminates the need to treat for large numbers of contaminants to meet safe drinking standards.

## Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting 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;

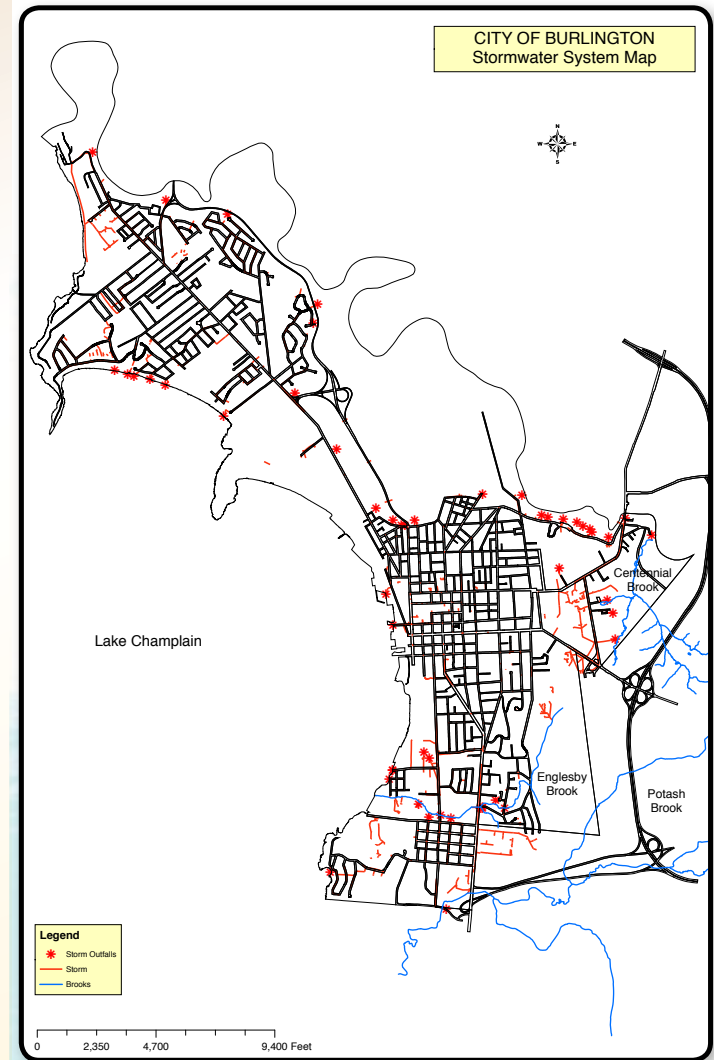
**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

**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.



For information on stormwater and its impact on Lake Champlain visit [www.smartwaterways.org](http://www.smartwaterways.org)

## Message from the Staff

We would like to start off by thanking our customers for taking the time and interest in reviewing this report. Meeting your needs and answering your questions is important and helps us to continue to provide the highest quality potable water possible. Past reports have focused on what we had done during the past year to improve the plant, reservoirs, high tanks and pump station that resulted in improved efficiency and water quality. This year I would like to answer some of your questions.

The most commonly asked question is what is in the glass of water I draw from the tap. We start out with twice filtered, low turbidity water and add two chemicals to ensure the water is safe to drink and one chemical, fluoride, for dental health. To ensure water safety we add sodium hypochlorite (chlorine) for disinfection and zinc orthophosphate to protect against lead and copper potentially leached from household plumbing. We are not using chloramines for disinfection at this time. I point this out because numerous callers have asked the question.

One of the most commonly asked questions is what is the alkalinity and hardness of the water. Burlington water ranges from slightly to moderately hard on the hardness classification. The hardness ranges from 3-5 grains per gallon or 51-86 parts per million (ppm). The alkalinity ranges from 45 to 60 ppm. These numbers are important to people installing dishwashers and boilers.

Most of the other questions I receive concern metals and contaminants that may be present. Each year we are required to sample for over 80 possible contaminants that may be present in the drinking water; these contaminants range from metals to man-made chemicals. Any contaminant found in even a trace amount must be reported in the contaminant section of this report. If you do not see a contaminant listed in this section, it means that it is not present or it is below detection levels. We are very fortunate to have Lake Champlain as our raw water source as it provides us with a constant supply of clean uncontaminated water. If you have any questions about Burlington water, please call us and we will be glad to assist you.

Finally, we are once again proud to be awarded the Partnership for Safe Water "Directors Award" for consistently producing high-quality water and striving to improve our process.

## Source Protection Plan

The Burlington Public Works Water Division obtains its raw water from Lake Champlain, a surface water source. Potential sources of contamination include urban and agricultural runoff and wastewater discharges. The Vermont Water Supply Division provided the resources and expertise to enable us to update our Source Protection Plan. A public hearing was held in December 2005 and the new plan was adopted and published on February 8, 2006. The new report details possible sources of contamination as well as the risks associated with each site. The new plan will be a valuable tool in protecting our source of potable water, and we thank the Water Supply Division for their assistance. The completed plan is available for viewing by contacting the Water Division during regular business hours.

## Community Participation

Call us at (802) 863-4501 for information about the next opportunity for public participation in discussions about our drinking water. Find out more about Burlington Public Works Water Division on the Internet at [www.dpw.ci.burlington.vt.us](http://www.dpw.ci.burlington.vt.us).

## 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.

## Questions?

For more information about this report, or for any questions relating to your drinking water, please call Tom Dion, Chief Plant Operator, at (802) 863-4501.





## Protecting our Waterways

Burlington, like other communities, needs to manage stormwater to protect people's homes and properties, the environment, and water bodies including Lake Champlain. If stormwater is not managed properly, it will cause flooding, pooling, erosion and water pollution. Heavy rains that flood streets and yards can result in property damage. Stormwater runoff also picks up pollutants and debris from streets, parking lots, and yards carrying them into nearby water bodies.

In 2006 Mayor Kiss created a Stormwater Task Force to assess current stormwater regulations and practices within the city, identify deficiencies, and recommend solutions. The task force drafted a comprehensive rewrite of the existing ordinance (Chapter 26 Wastewater, Stormwater, and Pollution Control) that was subsequently adopted by the City Council in December 2008 with an effective date of April 1, 2009. The revised ordinance incorporates all of the stormwater regulations in one document including construction site erosion control, post-construction stormwater management, enforcement, and illicit discharges and connections.

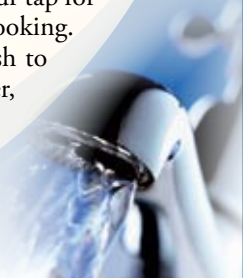
In March 2009 the city council adopted a stormwater user fee that will be the funding source for on-going maintenance to this separate infrastructure. Some of the capital projects already identified include outfall repairs at Crescent Beach, Plattsburgh Avenue, Manhattan Drive and Van Patten/Rockland area. Another improvement planned is the Colchester Avenue drainage project.

For information on Burlington's Stormwater Program  
please visit [www.ci.burlington.vt.us/stormwater](http://www.ci.burlington.vt.us/stormwater)

## 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. The Burlington Water Division 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](http://www.epa.gov/safewater/lead).



Jessica, Andrea, Terri, Customer Service

“WELL-INFORMED CUSTOMERS  
ARE OUR BEST ALLIES.”

### Should I put a brick in my toilet tank to save water?

Toilet flushing uses a lot of water: about 40% of a household's total water usage. Putting something in the toilet tank that takes up space, like a toilet dam or a water filled jug, is a good idea. But putting a brick in the tank is not a good idea. Bricks tend to crumble and might damage your toilet.



### What makes water Hard?

If substantial amounts of either calcium or magnesium, both nontoxic minerals, are present in drinking water, the water is said to be hard. Hard water does not dissolve soap readily, so making lather for washing and cleaning is difficult. Conversely, water containing little calcium or magnesium is called soft water.

### Is it safe to drink water from a garden hose?

Substances used in vinyl garden hoses to keep them flexible can get into the water as it passes through the hose. These chemicals are not good for you nor are they good for your pets. Allow the water to run for a short time in order to flush the hose before drinking or filling your pets' drinking containers. There are hoses made with "food-grade" plastic that will not contaminate the water. Check your local hardware store for this type of hose.

### 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.

### How much water is lost to a dripping faucet?

Dripping faucets waste a precious resource and it costs you money. As an example, if you have a faucet that drips 60 times a minute, this adds up to over 3 gallons each day or 1,225 gallons each year.

## Sampling Results

We are pleased to report that during the past year, the water delivered to your home or business complied with, or did better than, all state and federal drinking water requirements. For your information, we have compiled the table below to show what substances were detected in our drinking water during 2008. Although all of the substances listed below 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 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<sup>1</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Fluoride <sup>2</sup> (ppm)	2008	4	4	1.02	0.63–1.23	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] <sup>3</sup> (ppb)	2008	60	NA	38	26–64	No	By-product of drinking water disinfection
Nitrite (ppm)	2008	10	10	0.38	0.38–0.38	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] <sup>3</sup> (ppb)	2008	80	NA	46	32–62	No	By-product of drinking water chlorination
Turbidity <sup>4</sup> (NTU)	2008	TT	NA	0.06	0.03–0.06	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2008	TT	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community<sup>5</sup>

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	0.068	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2006	15	0	2	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

<sup>1</sup>We 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 TTHMs) result from continuous disinfection of drinking water and form when disinfectants combine with organic matter that naturally occurs in the source water.

<sup>2</sup>Burlington has fluoridated the finished water since 1952 to promote strong teeth. In September 2005 the city council passed a resolution requesting that the dosage be set at the minimum recommended concentration. We have modified our dosage to 1.0 ppm. Amount detected represents the annual average during 2008.

<sup>3</sup>Amount detected value is the result of a four-quarter running average.

<sup>4</sup>Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

<sup>5</sup>Lead and copper samples required once every three years. Last sampled in 2006.

## 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.

**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.