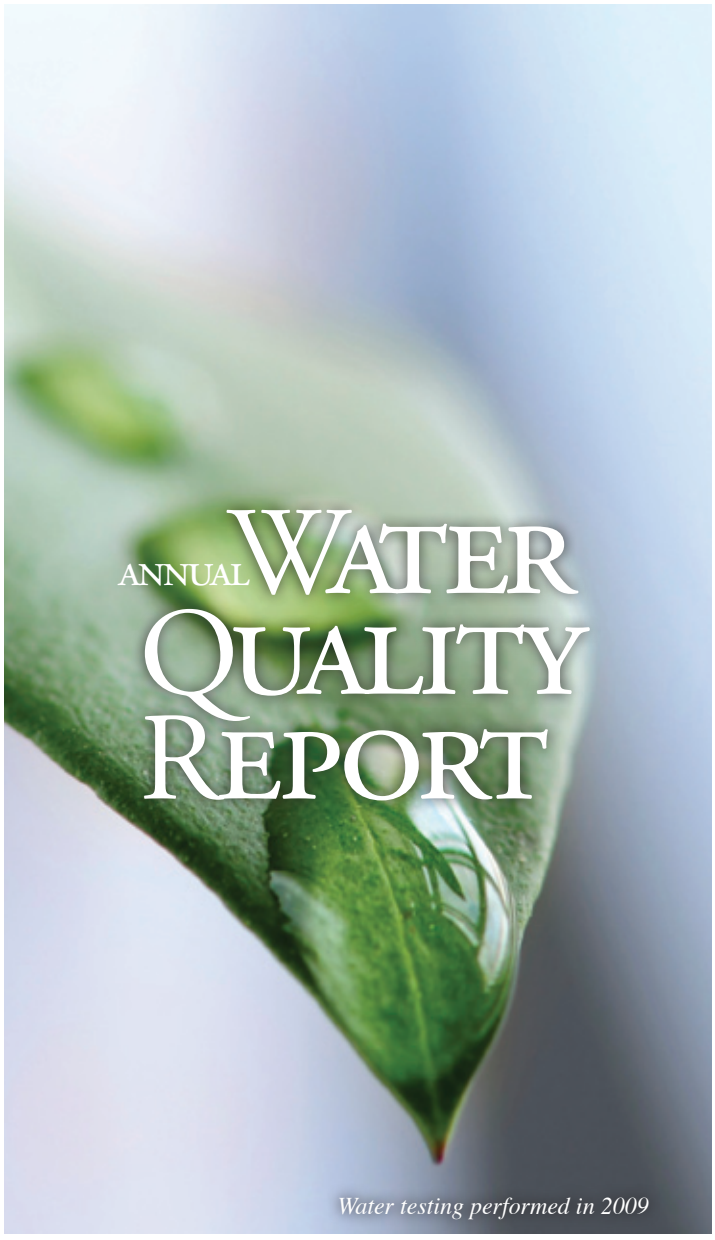


ANNUAL WATER QUALITY REPORT

Water testing performed in 2009

Presented By:

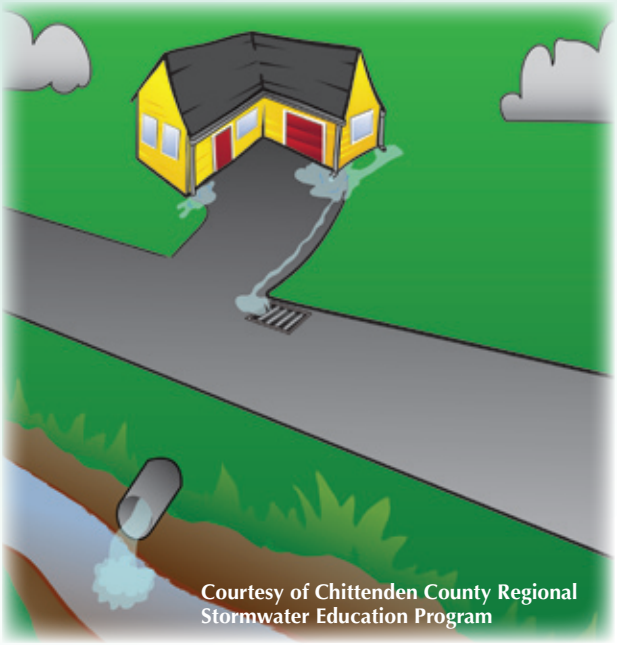
BURLINGTON DPW
WATER DIVISION

PWS ID#: VT0005053

Another Summer of Stormwater?

As we head into the "stormwater" season of summer, I encourage you to walk around your property and take note of what happens to the rain water after it falls from the sky.

Does the rainwater/stormwater from your rooftop and driveway have the opportunity to soak into your lawn? Or your rain gutter downspout directed to your driveway enabling the water to quickly leave your property and join with the growing volume of stormwater in the street before dropping into a storm drain?



Courtesy of Chittenden County Regional Stormwater Education Program

As you walk in the rain and splash through puddles, ask yourself: Do you know if that storm drain goes to the wastewater treatment plant or if it drains directly to Lake Champlain, the Winooski River or any of the other small local streams (Englesby, Centennial, Potash and other unnamed brooks) in the area? Have you ever seen water flowing out of a manhole (round covers) in your street? Why are more and more people concerned about "stormwater" when rain has been falling on our planet for eons?

For answers to some of these more persistent stormwater questions, as well as tips and workshop opportunities that will teach you how to reduce your stormwater impact, please visit the Burlington Stormwater Program website at: www.ci.burlington.vt.us/stormwater

Where Does My Water Come From?

The City of Burlington is fortunate to have Lake Champlain as a source for our raw water. Our point of intake is located well beyond the Burlington Harbor near the widest portion of the lake.

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 www.epa.gov/safewater/hotline/.

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. Our report details possible sources of contamination as well as the risks associated with each site. The plan is available for viewing by contacting the Water Division during regular business hours.

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;

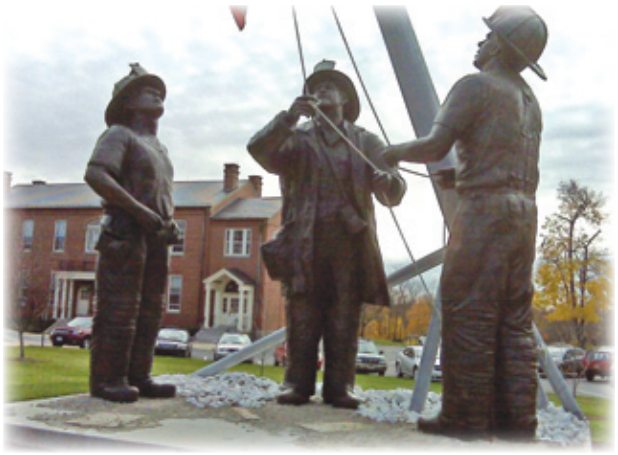
Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

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.

Preparing For Emergencies

The Burlington Fire Department was awarded a grant for Community Disaster Preparedness and Response held at the Federal Emergency Management Agency's (FEMA) National Emergency Training Center in Emittsburg, MD. This award provided the opportunity for close to 70 people from both the City and the Community at large to complete training for an emergency together. The exercises allowed homeland security and emergency management personnel, from first responders to senior officials, to train and practice prevention, protection, response and recovery capabilities in a realistic but risk free environment. Almost all City departments participated, including DPW Water & Wastewater and the Burlington Community was represented by Fletcher Allen, CCTA, UVM, Champlain College, Red Cross, VT Gas, radio station WVMT and Hall Communications.



VT000047

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.

LT2 Rule

The U.S. EPA has created the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) for the sole purpose of reducing illness linked with the contaminant *Cryptosporidium* and other disease-causing microorganisms in drinking water. The rule will bolster existing regulations and provide a higher level of protection of your drinking water supply.

Sampling of our water source has shown the following:

Cryptosporidium: No (Oo)cysts/L were detected.

Giardia lamblia: No (Oo)cysts/L were detected.

E. coli: 2 sample dates showed 1 *E. coli* per 100 mL. All others were less than 1.0.

One sample was taken each month. The sample period started April 14, 2008, and ended March 8, 2010.

It is important to note that these results are from our raw water source, Lake Champlain, only and not our treated drinking water supply. For more information, contact the U.S. EPA's 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. 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.

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.

Working Hard For You

We are once again pleased to present our "Water Quality Report" for the year 2009. As you will note, we have once again exceeded the requirements set forth by the EPA and the Water Supply Division of the state of Vermont. We have had no violations, and customer water quality questions or complaints have been rare. We are proud of the long standing record of producing high-quality drinking water. The year 2009 was once again a busy year for the Water Division. We repaired a persistent leak in one of our reservoirs, maintained an aging plant, and started on the road to upgrading the filter plant. The plant upgrade has been much needed for some time, as our plant was designed with a 25 year lifespan and we have been operating it for 28 years. The electronics that were state of the art when the plant was built are obsolete and parts are no longer available. It is a credit to the operators that have learned to cope with the aging plant and still refused to produce anything less than excellent quality water. Last year we solicited bids to upgrade the control system in the plant and awarded a contract. As I write this report, we are well on our way to having the upgrade completed. We will be able to better control the plant process with the new system, and it will ensure that we will be able to continue to produce high-quality water well into the future. As we go forward, we will continue to upgrade other parts of the plant as needed.

Previous reports have cited the need to look at ways to lower our disinfection byproducts. Disinfection byproducts are formed when sodium hypochlorite (chlorine) interacts with organics in the water. Disinfection byproducts have been linked to numerous health concerns, so the lower the detection level, the better. You will note our levels in the "Regulated Substances" section of this report are below the MCL for TTHMs and HAAs. The Vermont Legislature in the 2009 session passed a Bill (H.80) requiring the State Agency of Natural Resources to complete an engineering evaluation of public water systems' disinfection treatment options. Burlington Water participated as one of 15 water systems that have made or will be required to make modifications to their disinfection practices in order to comply with the U.S. EPA Stage 2 Disinfection and Disinfection Byproducts Rule (DBPR). Currently, water systems are operating under Stage 1, and Stage 2 is a further tightening of the regulations. The firm hired, AECOM, evaluated each water system's process as well as historical data on water quality from raw to finished, conducted a site visit, and provided proposed alternatives, including cost estimates to maintain compliance with Stage 2 DBPR. Although the report is not yet final, it will be a useful tool for Burlington Water going forward.

Finally, we were once again awarded the Partnership for Safe Water "Directors Award" for work we have done to produce high-quality water and the improvements we have made to meet their goals. Although the award has become routine, it is only through the attention to detail by the staff at the Water Division that enables us to consistently achieve the water quality needed to win the award. We will continue to strive to produce the finest quality water possible.

Impact of Zebra Mussels

The zebra mussel is a small mussel native to Russia. In 1988, it reached North America by a transatlantic freighter. Since then, they have continued to spread throughout the country. Zebra mussels are very successful invaders because they live and feed in many different aquatic habitats and breed prolifically (each female produces 1 million eggs per year) for their entire five-year lifespan.

Adult zebra mussels colonize on living and non-living surfaces, including boats, buoys, piers, plants, and clams. They are a great concern to drinking water utilities because they can attach to water intake pipes, severely restricting the flow of fresh water. They can also impact water quality by increasing taste-and-odor problems in the water supply. In order to prevent such problems from occurring in our water system, the Burlington Water Division injects Potassium Permanganate at the point where the raw water enters the intake. Potassium Permanganate not only prevents zebra mussels from colonizing in the intake line but is an oxidant and helps control taste and odor problems.

Zebra mussels are almost impossible to eradicate once they become established. Water utilities have had to retool their water intake systems to prevent zebra mussel-related problems costing millions of dollars a year. Utilities rely on a variety of methods to remove mussels from intake pipes; since there is no single, ideal removal solution, new methods are constantly under investigation.

While complete removal may be impossible, preventing zebra mussel spread is not. Human activities have spread them into many inland lakes and streams, usually through recreational boating, fishing, and diving practices. Simple steps such as draining live wells, cleaning vegetation off boat trailers, removing attached zebra mussels from boat hulls, and not dumping bait into lakes or rivers can prevent the spread of zebra mussels into non-infested waters.

Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. 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. The information listed below is a list of all substances found in even trace amounts during the year 2009. You will note the all the substances listed below are under the Maximum Contaminant Level (MCL) set by the U.S. EPA.

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

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Fluoride[1] (ppm)	2009	4	4	0.94	0.66–1.22	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA][2] (ppb)	2009	60	NA	50	31–69	No	Byproduct of drinking water disinfection
Nitrate (ppm)	2009	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][2] (ppb)	2009	80	NA	54	36–94	No	By-product of drinking water chlorination
Turbidity[3] (NTU)	2009	TT	NA	0.08	0.03–0.08	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2009	TT	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community[4]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2009	1.3	1.3	0.079	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2009	15	0	2	1/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

[1] We add fluoride to our water supply to promote public health through the prevention of tooth decay. 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. The amount detected represents the annual average during 2009.

[2] Amount detected value is the result of a four quarter running average. 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 byproduct concentrations. Disinfection byproducts (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.

[3] 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.

[4] Lead and copper samples are required once every three years. Last sampled in 2009.

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.