Continuing Our Commitment

Once again we proudly present our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2006. We are pleased to tell you that our compliance with all state and federal drinking water laws remains exemplary. As in the past, we are committed to delivering the best quality drinking water. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

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.

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.

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.

Drinking Water Awards

The Water Division is again proud to announce that we had no water violations during the past year and have been recognized with two awards for the high quality water we produce. The first award was the "Five Years Director's Award" from the Partnership for Safe Water. We are one of two plants in Vermont to receive this award. The Partnership for Safe Water is a national group composed of the American Water Works Association, the U.S. EPA and more than 200 water treatment plants around the country. Water plant membership is voluntary and the goal is to "exceed the standards set by legislation and regulation to increase protection against microbial contamination." The best way to reduce the risk of microbial contamination is to reduce the turbidity (NTU) in the finished water. Turbidity is the measurement of organic and inorganic particles in the water. The average raw water turbidity entering the filter plant is about 0.70, with occasional spikes in the higher range during the spring runoff or heavy rains. Current standards require a 70% reduction in the finished water, or 0.21 NTU. The Partnership for Safe Water requires a maximum finished water turbidity of 0.10 NTU no matter how high the raw water turbidity. During the 2005 - 2006 reporting period our finished water turbidities ranged from a high of 0.087 NTU to a low of 0.028 NTU, with an average of about 0.04 NTU, well below the standards of the partnership. Our turbidity numbers, and other aspects of the water quality including no violations, were subject to an annual review by a committee of knowledgeable peers at the partnership, and we were awarded the Director's Award for the fifth year in a row. The partnership continues to urge plants to seek optimum turbidity removal with the assets at hand, and we have attained that goal.

The second award was from the Green Mountain Environmental Association for Water Facility Excellence. This award was also for consistently producing low turbidity water. Again, we are proud of our achievements and we will continue to strive to exceed the water quality standards in the future.

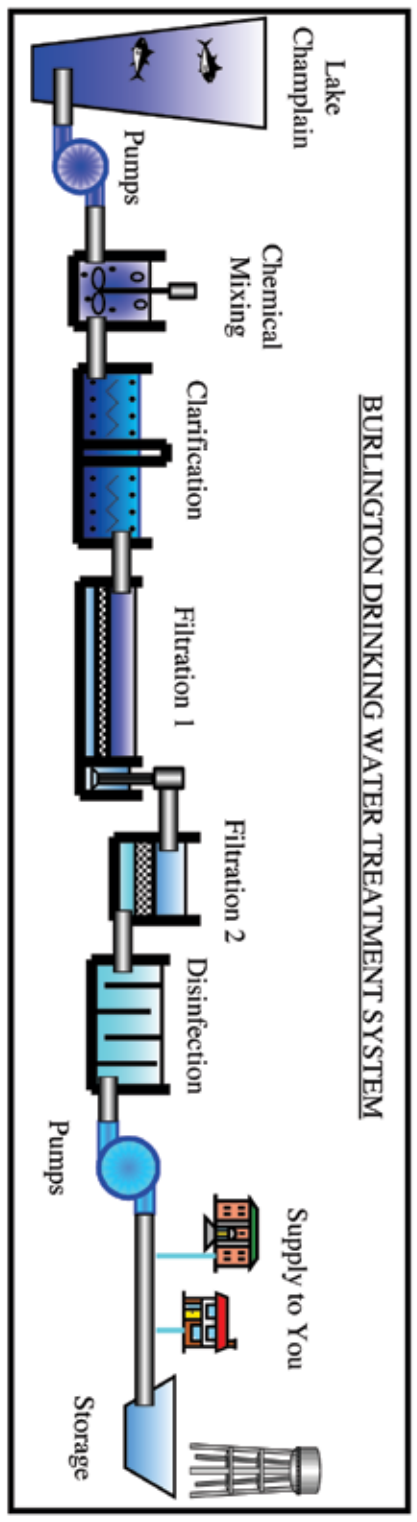
This past spring we undertook the major project of cleaning and repairing one of our two reservoirs. This reservoir has been in service for more than twenty years and no problems were apparent. Initially, inspection of both reservoirs was performed with a diver and camera, then progressed to an ROV (remote operated vehicle), a camera that is steered without a person in the water. The south reservoir showed indication of water under the liner leading to a scheduled repair. The construction crew at the Water Division performed the work of cleaning, repairing and resealing the reservoir interior. Thanks to their efforts the project went smoothly and only a few suspected leaks needed to be patched. Both of the reservoirs have now been drained, cleaned and repaired, ensuring many years of trouble free service.

We will continue to improve the water system in the years ahead, and, as always, to provide our customers with the best quality water possible.

The Penny Lane Crew, Andrea Mitchell, Terri Boylan, Jessica Martin.

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.



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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.

Naturally Occurring Bacteria

The simple fact is, bacteria and other microorganisms inhabit our world. They can be found all around us: in our food; on our skin; in our bodies; and, in the air, soil, and water. Some are harmful to us and some are not. Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of this bacterial form in drinking water is a concern because it indicates that the water may be contaminated with other organisms that can cause disease. Throughout the year, we tested more than 600 samples (at least 50 samples every month) for coliform bacteria. In that time only one sample came back positive, in July, for the bacteria. Federal regulations now require that public water that tests positive for coliform bacteria must be further analyzed for fecal coliform bacteria. Fecal coliforms are present only in human and animal waste. Because these bacteria can cause illness, it is unacceptable for fecal coliforms to be present in water at any concentration. Our tests indicate no fecal coliform is present in our water.

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 2006. 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.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2006	15	0	2.5	2.5–2.5	No	Erosion of natural deposits
Fluoride[1] (ppm)	2006	4	4	1.25	0.43–1.25	No	Erosion of natural deposits; Water additive which promotes strong teeth
Haloacetic Acids [HAA][2] (ppb)	2006	60	NA	58	34.2–86.1	No	By-product of drinking water disinfection
Nitrate (ppm)	2006	10	10	0.316	0.316–0.316	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes][2] (ppb)	2006	80	NA	55	15.8–118	No	By-product of drinking water chlorination
Total Coliform Bacteria[3] (% positive samples)	2006	5% of monthly samples are positive	0	2.00	NA	No	Naturally present in the environment
Turbidity (NTU)	2006	TT	NA	0.087	0.028–0.087	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2006	TT > 95	NA	100	NA	No	Soil runoff

Tap water samples were collected from 30 sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	ACTION LEVEL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE ACTION LEVEL	VIOLATION	TYPICAL SOURCE
Copper (ppm) [4]	2006	1.3	1.3	0.068	0	No	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb) [4]	2006	15	0	2	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Manganese (ppb)	2006	50	NA	11	11–11	No	Leaching from natural deposits
Zinc (ppm)	2006	5	NA	0.26	0.26–0.26	No	Zinc orthophosphate is added to control corrosion, lead and copper.

[1] 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. We have modified our dosage to 1.0 ppm. Amount detected represents the highest reading during 2006.
[2] Amount detected value is the result of a four-quarter running average.
[3] During the month of July 2006, one of our routine distribution samples tested positive for total coliforms. Follow-up samples at that location as well as upstream and downstream were negative. The value 2 in the amount detected column represents 2%, or 1 of 50 samples in the month of July. During 2006 more than 600 samples were tested for E. coli and for total coliform bacteria. Only one sample showed the presence of coliforms. No E. coli samples were positive.
[4] Testing is required once every three years.

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.

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

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

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.

pCi/L (picocuries per liter): A measure of radioactivity.

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.

Substances That Might Be in Drinking 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 which 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.

Combined Sewer Treatment System

Like many older cities, part of Burlington's wastewater collection system includes what is known as combined sewers. Before treatment plants were envisioned, cities laid a single pipe in the ground that collected and mixed both wastewater (sewage) and stormwater runoff from streets, rooftops and parking lots together before discharging into the nearest lake, river or stream.

When our first wastewater treatment plant was constructed in 1953, large flows associated with this combined sewer system had to be diverted past the plant to prevent damage. These combined sewer overflows dumped sewage into Lake Champlain that resulted in water quality problems, the most noticeable being beach closings due to high bacteria counts.

While planning for our last plant upgrade in the late 1980s, the city looked at separating the wastewater and stormwater pipes. At that time we were learning like most of the world that stormwater runoff from urban areas has its own mix of pollutants, including trash, sediment, petroleum products, metals, nutrients and bacteria. Burlington decided that instead of separation it would treat this combined sewage at our Main wastewater plant next to Perkins Pier.

Completed in 1994, Main plant has a treatment train that includes screening of large trash and debris, removal of sediment and attached pollutants using a vortex separator and disinfection of the treated combined sewage using bromine. The CSO wet well located before the vortex separator captures over 100 cubic yards (7 dump truck loads) of sediment annually preventing deposition in Lake Champlain.

SMART Water Ways
Add Up to Cleaner Water

For information on stormwater and its impact on Lake Champlain visit the Chittenden County Regional Stormwater Education Program at www.smartwaterways.org