

ANNUAL WATER QUALITY REPORT

Water testing performed in 2007



BURLINGTON DPW
WATER DIVISION



PWS ID#: VT0005053

Meeting the Challenge

We are once again proud to present to you our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2007. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal drinking water standards. Again during this past year we have not only met, but in most cases have exceeded water industry 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, 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.

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 Web site 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.

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 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.

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.



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.

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



System Improvements

The staff at the Water Division are pleased to present our water quality report for testing done in 2007. During the year 2007 we had no violations and we continued to strive to improve the quality of the water we provide to our customers. The year 2007 brought us recognition from two independent sources for producing drinking water of the highest quality. The first award was from the "Partnership For Safe Water" for continuing to maintain and improving our water quality. We have received the "Director's Award" six years in a row. You will note in last year's report why this is a valued award by those of us producing potable water to our communities. We were also acknowledged by the "Centers for Disease Control" and the "American Dental Association" for consistent fluoride application in a community water system. The City Council and the people of Burlington have decided that dental health is an important issue and that fluoridated water plays vital part.

During the past year we have spent considerable time and money maintaining our existing facilities. The water tank on the main UVM campus was cleaned inspected and repainted. The reservoir pump station roof was repaired and the rotted woodwork was replaced. Our pump station building next to the filter plant underwent roof repair, and more work is scheduled this spring. The final project started last fall was on the north reservoir. Water leaking on to Main Street alerted us to a problem with the liner. The reservoir was drained, cleaned and a consultant was brought in to inspect the liner. Numerous small problem areas were found and documented. Due to cold weather the reservoir remained empty during the winter and will be repaired in the spring.

The staff at the water division are committed to providing the highest quality potable water to our consumers as well as safe-guarding your investment in that water system.

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.

Healthy Lawn Tips

for a green lawn, not a green lake!

FERTILIZE...

- Only with **phosphorus-free** fertilizers. Most northeastern lawns and 75% of Chittenden County lawns tested by UVM had enough phosphorus (P) and only need nitrogen (N)!



Credit: Metro Watershed Partners

Look for the Middle Number!

The three numbers on fertilizer bags show the N-P-K nutrient analysis. The middle number is the phosphate (phosphorus) content. A “zero” in the middle means it is **phosphorus-free**. Lawns rarely need extra potassium (K), but adding some does not affect water quality.

- Apply fertilizer once/year—the best time for this region is early fall.
- Sweep up fertilizer from sidewalks and driveways. Don't fertilize before heavy rain.

TAKE A SOIL TEST...

- If you are seeding a new lawn, or want to learn more about your lawn's nutrient content, pH level and organic content.

WATER...

- If desired, in early morning, when there is less than 1 inch/week of rain. Grass will survive droughts without watering by going dormant.

PLANT GRASS SEED...

- On existing lawns in the fall and spring to out compete weeds.
- Use a grass mixture that does well in the setting (soil, light, activity).
- Leave legumes, such as common white clover, among the grass to add nitrogen, which will naturally fertilize your lawn.

MOW...

- To maintain a height of 3 to 4 inches and cut off no more than 1/3 of grass blade. Leave clippings on lawn to add nutrients and organic matter, but be sure to sweep the clippings off pavement.

WEEDS...

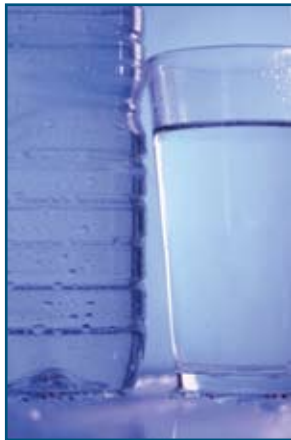
- Will be discouraged by following these healthy lawn tips! Just pull any that are left by hand.

Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resource Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25% of bottled water is actually just bottled tap water (40% according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70% of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you paid for bottled water.



For a detailed discussion on the NRDC study results, check out their Web site at www.nrdc.org/water/drinking/bw/exesum.asp.

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.



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

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 2007. 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

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Fluoride ¹ (ppm)	2007	4	4	1.03	0.81–1.38	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] ² (ppb)	2007	60	NA	37	23–58	No	By-product of drinking water disinfection
Nitrate (ppm)	2007	10	10	0.32	0.32–0.32	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] ² (ppb)	2007	80	NA	42	33–62	No	By-product of drinking water chlorination
Turbidity ³ (NTU)	2007	TT	NA	0.077	0.034–0.077	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2007	TT	NA	100	NA	No	Soil runoff

Tap water samples were collected from 30 sample sites throughout the community⁴

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

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 concentration. We have modified our dosage to 1.0 ppm. Amount detected represents the annual average during 2007.

² Amount detected value is the result of a four-quarter running average.

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 required once every 3 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.

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.