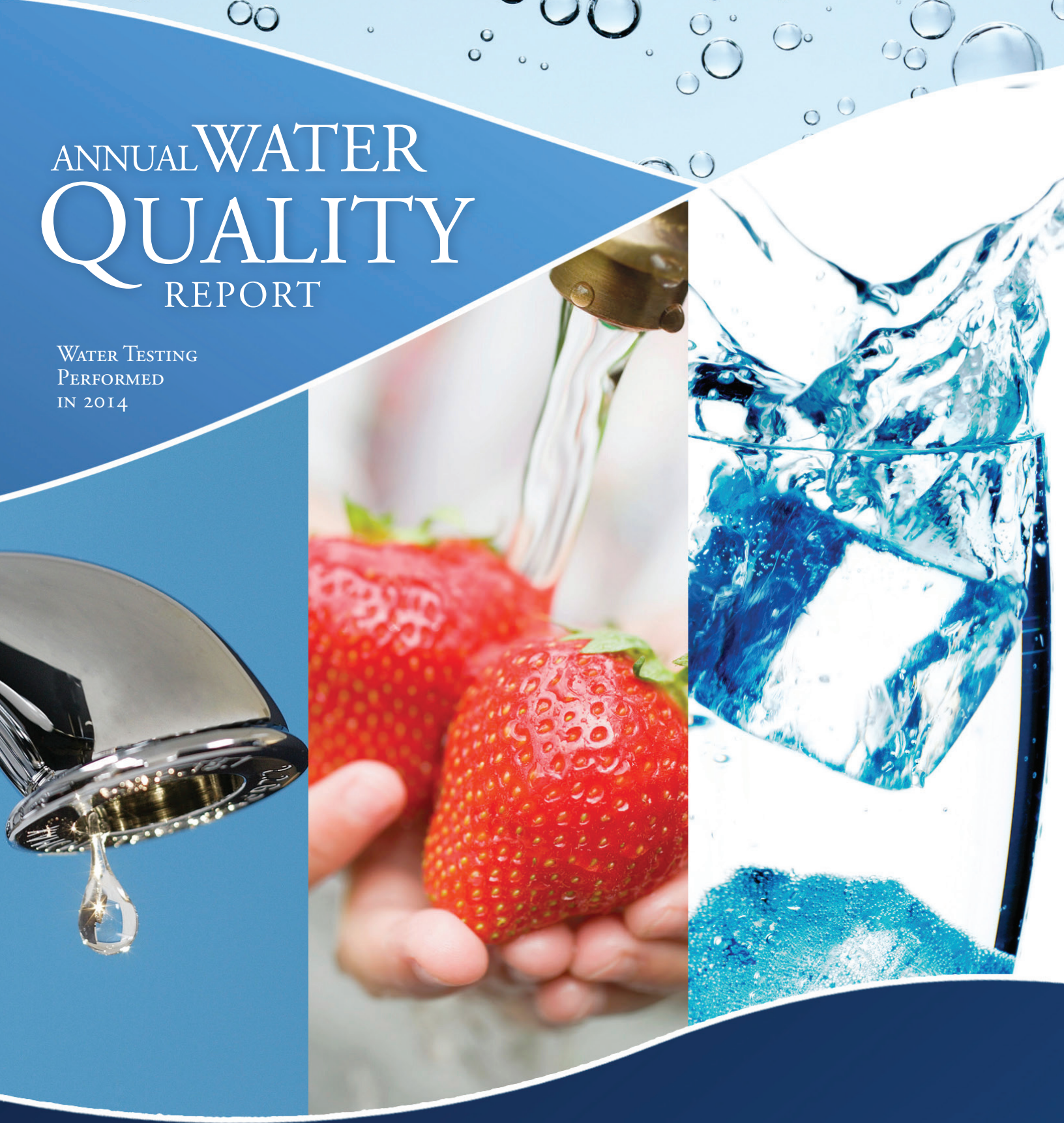
Annual Water Quality Report

Water Testing Performed in 2014



Presented By

Burlington DPW Water Division

PWS ID#: VT0005053

Our Mission Continues

We are once again proud to present our Consumer Confidence Report for reporting year 2014. We had no violations of state or federal standards during the reporting period. We also met the self-imposed stricter goals set by the Partnership for Safe Water and was awarded the Directors Award for excellence in water quality and plant improvements. We will continue to strive to improve to meet the ever changing standards set by state and federal agencies.

2014 was an important planning year to look at ways to improve pump and filter efficiency as well as replacing aging liners in our reservoirs. These are major projects requiring considerable time and effort to implement the actual construction. The new pump will be properly sized and more energy-efficient than the pump it replaced. The filter rebuild will make the filter more efficient and will help to reduce turbidity as well as disinfection by-products. Finally, the liners in our reservoirs are old and have been patched many times; it is time to replace them. Included in the liner replacement are leak detectors and mixers to ensure consistent water quality. At the time of this report, two of the three upgrades are under way and the third will begin soon. These upgrades will help us continue to provide you with a dependable source of quality potable water.

Past reports have noted our concerns about high disinfection by-products (DBPs). Although we were below the maximum contaminate level (MCL), we were seeking a solution using the assets and chemicals currently on site. We feel we have achieved that goal and we now have a comfortable level well below the MCL. As noted previously, the filter and reservoir upgrades should further reduce our DBPs.

Every three years, we are required to sample for lead and copper at 30 sites in the city. We are required to use the same sites each time we sample. During the summer of 2015, we are once again required to sample the same sites we sampled in 2012. Starting in June, we will be contacting the residents of those sites to make arrangements to resample their homes. We have been pleased with the cooperation we have received in the past and hope you can help this year.

Finally, we are proud of the quality of the water we provide to our customers and we look forward to improving that quality as well as plant efficiency in the coming years. We are optimistic that we will meet any new challenges as we have done in the past. If you have any questions or comments concerning this report, please contact the Water Division at (802) 863-4501.

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 http://water.epa.gov/drink/hotline.

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 Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent 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 percent 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'd pay 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.

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.

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.burlingtonvt.gov/dpw.

Outreach to our future Water Resources' professionals!

Water line replacement on Thibaut Parkway, coordinated with street repaving work.

Lead in Home Plumbing

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. We are 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.

Infrastructure reinvestment – Waterfront, Penny Lane, 20 inch valve installation while pipe under pressure.

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 Water Division source protection plan was updated on August 11, 2011, as required by the Vermont Water Supply Division. The report details possible sources of contamination as well as the risks associated with each. The completed plan is available for viewing by contacting the Water Division during regular business hours.

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.

Questions?

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

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. The table below shows only those contaminants that were detected 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.

We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Regulation (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2014	[4.0]	[4.0]	0.80	0.01–1.85	No	Water additive to control microbes
Fluoride[1] (ppm)	2014	4	4	0.67	0–0.85	No	Erosion of natural deposits; Water additive which promotes strong teeth
Haloacetic Acids [HAA]–Stage 2[2] (ppb)	2014	60	NA	46.6	8.7–89.9	No	By-product of drinking water disinfection
Nitrite (ppm)	2014	1	1	0.23	0.23–0.23	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes]–Stage 2[2] (ppb)	2014	80	NA	49.9	35.5–74.8	No	By-product of drinking water disinfection
Turbidity[3] (NTU)	2014	TT	NA	0.20	0.02–0.20	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2014	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)	2012	1.3	1.3	0.05	0/30	No	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2012	15	0	0	0/30	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
Aluminum (ppb)	2014	200	NA	0.053	0.053–0.053	No	Erosion of natural deposits; Residual from some surface water treatment processes
Chloride (ppm)	2014	250	NA	18	18–18	No	Runoff/leaching from natural deposits
Corrosivity (Units)	2014	Noncorrosive	NA	-1.189	-1.189–-1.189	No	Natural or industrially influenced balance of hydrogen, carbon and oxygen in the water; Affected by temperature and other factors
Iron (ppb)	2014	300	NA	<0.020	<0.020–<0.020	No	Leaching from natural deposits; Industrial wastes
Manganese (ppb)	2014	50	NA	0.036	0.036–0.036	No	Leaching from natural deposits
pH (Units)	2014	6.5-8.5	NA	7.34	7.34–7.34	No	Naturally occurring
Silver (ppb)	2014	100	NA	<0.020	<0.020–<0.020	No	Industrial discharges
Sulfate (ppm)	2014	250	NA	12	12–12	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2014	500	NA	97	97–97	No	Runoff/leaching from natural deposits
Zinc (ppm)	2014	5	NA	0.20	0.20–0.20	No	Runoff/leaching from natural deposits; Industrial wastes

[1] Burlington has added fluoride to the water since 1952 to promote public health through the prevention of tooth decay. On January 7, 2011, the U.S. Department of Health announced that it was proposing to change the recommended level for community fluoridation from a range of 0.7 - 1.2 to a single value of 0.7 ppm. The Burlington Water Department has reduced its fluoride to 0.7 ppm. For more information concerning fluoride, infant formula, and community water fluoridation, go to http://healthvermont.gov/family/dental/fluoride/formula.aspx.

[2] 2014 was the first complete year of Stage 2 sampling. The amount detected is a four-quarter average and reported value is the LRAA.

[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. During year 2014 turbidity was measured every 4 hours or 2,190 times during the year. On June 3, we exceeded the self-imposed Partnership goal of 0.10 twice. We did not violate state or federal standards. Exceeding the Partnership goal was a result of a plant malfunction that was quickly remedied.

[4] Lead and copper samples are required once every 3 years and were last sampled in 2012.

Definitions

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

LRAA: Locational running annual average.

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. Secondary MCLs (**SMCL**s) are established to regulate the aesthetics of drinkiing water like taste, odor and appearance.

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).

RAA: Running annual average.

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.