

**2010 WATER QUALITY REPORT  
FOR THE TOWN OF CHRISTIANSBURG**

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Christiansburg, VA 24073

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**POSTAL PATRON**

**We are pleased to report that our drinking water is safe and meets federal and state requirements.**

**Introduction**

We're very pleased to provide you with the Annual Water Quality Report for the calendar year 2010. We want to keep you informed about the excellent water we have delivered to you over the past year. Our goal is and always has been, to provide to you a safe and dependable supply of drinking water. We purchase our water from the Blacksburg-Christiansburg-VPI Water Authority that utilizes treated surface water from the New River in Montgomery County as its water source. The Water Treatment Facility is considered to be a "conventional" treatment process. The water goes through several treatment processes including coagulation, flocculation, sedimentation, and filtration. The quality of your drinking water must meet Federal and State requirements administered by the Virginia Department of Health (VDH).

If you have any questions about this report or concerning your water utility, please contact Barry D. Helms, Interim Town Manager, at 382-6128. We want our customers to be informed about their water utility. If you want to learn more please attend any of the regularly scheduled Water Authority meetings, which are held every third Wednesday of the month at 4:00 p.m. at the Water Treatment Plant at 3355 Peppers Ferry Road. You may also find information on the water system on the Blacksburg-Christiansburg-VPI Water Authority web page at [www.h2o4u.org](http://www.h2o4u.org). Anyone interested in scheduling a tour of the water plant may contact Mr. Gerald W. Higgins, Superintendent-Manager, at 639-2575.

**General Information**

Drinking water, including bottled drinking water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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 and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include: (1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. (2) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. (3) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses. (4) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems. (5) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

A source water assessment was conducted in 2002 which determined the source to be of high susceptibility to contamination. Information from this report may be obtained by contacting Mr. Higgins at the above mentioned phone number.

We're proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some constituents have been detected. The EPA has determined that your water **IS SAFE** at these levels.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

The Town of Christiansburg and the Water Authority work continually to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

**All storm drain inlets drain to our creeks and rivers. Please dispose of pesticides, oils, cleansers and other hazardous wastes properly to avoid contaminating your drinking water. Blacksburg, Christiansburg and Montgomery County plan to have a free Household Hazardous Waste Collection each May. Please respect the environment.**

The Blacksburg-Christiansburg-VPI Water Authority routinely monitors for contaminants in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1, 2010 to December 31, 2010.

### WATER QUALITY RESULTS

#### Microbiological Contaminants

Contaminant	MCLG	MCL	No. of Samples Indicating Presence of Bacteria	Violation (Y/N)	Month of Sampling	Typical Source of Contamination
Total Coliform Bacteria	0	1 positive monthly sample	3	Y	July	Naturally present in the environment

#### Regulated Contaminants

Contaminant (units)	MCLG	MCL	Level Detected	Range	Violation (Y/N)	Typical Source of Contamination
Nitrite & Nitrate (ppm)	1	1	0.95	NA	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Haloacetic Acids (ppb)	NA	60	32	13-57	N	By-product of drinking water disinfection.
Total trihalomethanes [TTHM] (ppb)	NA	80	38	16-55	N	By-product of drinking water chlorination.
Total Organic Carbon	NA	TT, met when $\geq 1$	1.0	1.0-1.09	N	Naturally present in the environment.
Fluoride (ppm)	4	4	.67	NA	N	Erosion of natural deposits; Discharge from fertilizer & aluminum factories
Barium (ppm)	2	2	.024	NA	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppb)	MRDLG=4	MRDL=4	2.07	1.58-2.2	N	Water additive used to control microbes.
Combined Radium (pCi/L)	0	5 pCi/L	1.4	NA	N	Erosion of natural deposits.
Turbidity (NTU)	NA	TT, 1 NTU Max	0.08	0.02-0.08	N	Soil runoff
		TT, $\leq 0.3$ NTU 95% of the time	100%	NA	N	

#### Lead and Copper Contaminants

Contaminant (units)	MCLG	Action Level	90 <sup>th</sup> Percentile	Date of Sampling	# of Sampling Sites Exceeding Action Level	Typical Source of Contamination
Lead (ppb)	0	15	2.0	June, 2008	1	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	1.3	1.3	0.096	June, 2008	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

During July 2010 we exceeded the bacteriological primary maximum contaminant level for total coliforms. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems. Additional samples were collected and no further contamination was found.

\* Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. EPA requires that we report to you the highest single turbidity result measured during the year. Out of approximately 20,000 tests the highest measurement was 0.08 turbidity units and the monthly percentage of samples meeting the requirements was 100%, every month this year.

In these tables you may find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Parts per million (ppm) or Milligrams per liter (mg/l) – One part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter – One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picouries per liter (pCi/L) – A measure of the radioactivity in water.

Nephelometric Turbidity Unit (NTU) – A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

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

Maximum Contaminant Level – (MCL) is the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG as feasible using the best available treatment technology.

Maximum Contaminant Level Goal – (MCLG) is 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.

Maximum Residual Disinfectant Level Goal - (MRDLG) is the level of 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.

Maximum Residual Disinfectant Level – (MRDL) is 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.

**Cryptosporidium:** Back in 1992, the Blacksburg, Christiansburg, VPI Water Authority observed that drinking water researchers and EPA were becoming concerned about Cryptosporidium (Crypto), a microscopic parasite present in most surface waters serving water supplies. Ingestion of Crypto may cause cryptosporidiosis, an abdominal infection. The most effective method of removal is filtration such as what is practiced at the Water Authority although its removal is not 100% guaranteed. Disinfection, such as with chlorine, has been found to be ineffective against Crypto.

In 1994, the Water Authority began routine testing for Cryptosporidium in the New River. Many of the samples since then have shown no Crypto while others have indicated the presence of Crypto in very small numbers.

As of 2008, under the EPA "Long Term2 Enhanced Surface Water Treatment Rule", we are now **required** to collect at least 24 samples (monthly) over a 2 year period. The Water Authority has chosen to collect 48 samples over those 2 years. Furthermore, we are required to tell you about that monitoring and give you the results. During 2010, the Water Authority collected 6 official samples from the New River and the average Crypto concentration was 0.0978 oocysts per liter. While the monitoring indicates the presence of these organisms in our source water (before treatment), the current test methods do not allow analysts to determine if the organisms are dead or alive. Based on the Cryptosporidium monitoring results so far, the Water Authority anticipates having no problem meeting future EPA treatment requirements.

#### ADDITIONAL HEALTH INFORMATION REGARDING LEAD IN 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 Town of Christiansburg 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 15 to 30 seconds or until it becomes cold or reaches a steady temperature 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 (800-426-4791) or at <http://www.epa.gov/safewater/lead>.