

## Quality First

The Town of Broadway's goal is to produce the highest quality of drinking water for its customers. Water samples are routinely collected from the distribution system for the purpose of checking quality and identifying potential problems. The treatment plant is constantly maintained, evaluated and upgraded to meet and exceed government regulations. Through planning, efficient operation, and excellent customer service, we will continue to supply the best quality drinking water possible at an economical price.

If you have questions about this report, or want additional information about any aspect of your drinking water, please contact:

Kyle O'Brien  
Town Manager  
(540) 896-5152  
kdobrien@town.broadway.va.us

Important information  
on your drinking water



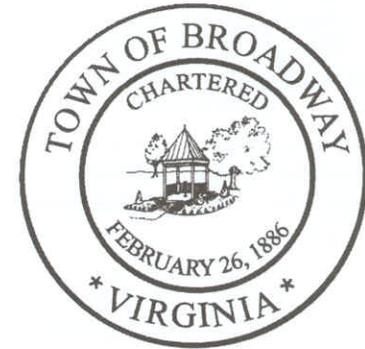
**Town of Broadway**  
P.O. Box 156  
116 Broadway Avenue  
Broadway, Virginia 22815

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# 2006 Annual Water Quality Report

*Quality Water, Quality Service*

**P.O. Box 156  
Broadway, Virginia 22815  
(540) 896-5152**



[www.town.broadway.va.us](http://www.town.broadway.va.us)

## BACKGROUND INFORMATION

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Substances (referred to as contaminants) in source water may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban storm water runoff, residential uses, and many other types of activities. Surface water is treated to make it safe for drinking, while groundwater may or may not have any treatment.

All 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.

## WHERE DOES THE WATER COME FROM?

The Town's treatment facility receives water from the North Fork of the Shenandoah River upstream from its confluence with Linville Creek. Linville Creek may be utilized as a back up supply at any time, but is typically used only during extremely dry conditions.

## HOW IS THE WATER TREATED?

Treatment begins with coagulation where the addition of polyaluminum chloride causes the small particles in the water to adhere to one another and grow in size. Flocculation occurs next, meaning the water is slowly mixed, causing the particles to grow larger. At this point, a disinfectant, chlorine is added. The water then passes into settling basins where the larger particles settle to the bottom of the basin. Filters, containing sand and anthracite, finish the removal of particles not removed by settling. Before distribution,

water is again disinfected and soda ash is added for corrosion control. Finally, fluoride is added to the water for dental protection.

The water is then tested for chlorine, pH, turbidity, alkalinity, hardness, and fluoride. Four different procedures: jar test, equation, pilot filter, and streaming current monitor, can be utilized to determine the proper chemical dosages.

Two finished water pumps, each rated at 350 g.p.m., deliver the final product to the distribution system. Storage in the distribution system is provided by one 200,000 gallon elevated storage tank, one 255,000 gallon ground storage tank, and one 500,000 gallon ground storage tank.

## SOURCE WATER ASSESSMENT

A source water assessment has been completed by the Virginia Department of Health. The assessment determined that the Town's sources may be susceptible to contamination because it is located in an area that promotes migration of contaminants from land use activities of concern. This is true for almost all surface water. More specific information may be obtained by contacting the Town Office or water plant.

## SPECIAL 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 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).

## ABOUT THE PRESENCE OF LEAD

**Lead** – Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. We only had one of five samples indicate the presence of lead. This is not a violation.

## VIOLATION INFORMATION

The Town did not have any water quality violations during 2006 and was in full compliance with all monitoring and reporting requirements.

## QUALITY OF YOUR DRINKING WATER

Your drinking water is routinely monitored according to Federal and State Regulations for a variety of contaminants. The tables that follow show the results of our monitoring for the period of January 1<sup>st</sup> through December 31<sup>st</sup>, 2006.



## WHAT IS IN THE WATER?

The results in the table are from testing done in 2001, 2005 and 2006. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, is more than one year old.

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The table lists only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment.

Maximum Contaminant Levels (MCL's) are set at very stringent levels by the U.S. Environmental Protection Agency. In developing the standards, EPA assumes that the average adult drinks 2 liters of water each day throughout a 70-year life span. EPA generally sets MCL's at levels that will result in no adverse health effects for some contaminants or a one-in-ten-thousand to one-in-a-million chance of having the described health effect for other contaminants.

### DEFINITIONS

In the table and elsewhere in this report you will find many terms and abbreviations you might not be familiar with. The following definitions are provided to help you better understand these terms:

*Non-detects (ND) - lab analysis indicates that the contaminant is not present*

*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.*

*Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.*

*Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.*

*Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is 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) - a required process intended to reduce the level of a contaminant in drinking water.*

*Maximum Contaminant Level, or MCL - 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.*

*Maximum Contaminant Level Goal, or MCLG - 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.*

*Variances and exemptions - state or EPA permission not to meet an MCL or a treatment technique under certain conditions*

### INORGANIC CONTAMINANTS

| CONTAMINANT / UNIT OF MEASURE | MCLG | MCL  | LEVEL FOUND / RANGE                    | VIOLATION | DATE OF SAMPLE | TYPE SOURCE OF CONTAMINATION  |
|-------------------------------|------|--|--|-----------|----------------|---|
| NITRATE PPM                   | 10   | 10   | 1.43                                   | No        | AUGUST 2006    | Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural  |
| FLOURIDE PPM                  | 4    | 4  | Average: 1.01                          | No        | DAILY          | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories |
| TURBIDITY NTU                 | NA   | TT=1 NTU<br>TT=95% of monthly samples must be <0.3 NTU | 0.199 max<br>Range: 0.030 to 0.199 NTU | No        | Daily          | Soil runoff   |

### RADIOLOGICAL CONTAMINANTS

| CONTAMINANT / UNIT OF MEASURE | MCLG | MCL | LEVEL FOUND / RANGE | VIOLATION | DATE OF SAMPLE | TYPE SOURCE OF CONTAMINATION          |
|-------------------------------|------|-----|---------------------|-----------|----------------|---------------------------------------|
| Gross Alpha pCi/L             | 0    | 15  | 0.5                 | No        | December 2001  | Erosion of natural deposits           |
| Gross Beta pCi/L              | 0    | 50  | 2.0                 | No        | December 2001  | Decay of natural and manmade deposits |

### DISINFECTION BY-PRODUCTS

| CONTAMINANT / UNIT OF MEASURE      | MCLG | MCL | LEVEL FOUND | VIOLATION | DATE OF SAMPLE          | TYPE SOURCE OF CONTAMINATION              |
|------------------------------------|------|-----|-------------|-----------|-------------------------|---|
| TTHM's (Total Trihalomethanes) ppb | 0    | 80  | 62<br>17    | No        | August<br>December 2006 | By-product of drinking water chlorination |
| (HAA) Haloacetic acids ppb         | NA   | 60  | 30<br>17    | No        | August<br>December 2006 | By-product of drinking water chlorination |

### DISINFECTION BY-PRODUCTS PRECURSORS

| CONTAMINANT / UNIT OF MEASURE   | MCLG | MCL | LEVEL FOUND / RANGE | VIOLATION | DATE OF SAMPLE | TYPE SOURCE OF CONTAMINATION         |
|---------------------------------|------|-----|---------------------|-----------|----------------|--------------------------------------|
| (TOCs) Total Organic Carbon ppb | NA   | TT  | Average: 1.28       | No        | Monthly 2006   | Naturally present in the environment |

### LEAD & COPPER

| CONTAMINANT / UNIT OF MEASURE | MCLG | MCL    | LEVEL FOUND / RANGE   | VIOLATION | DATE OF SAMPLE | TYPE SOURCE OF CONTAMINATION   |
|-------------------------------|------|--------|---|-----------|----------------|--|
| Lead ppb                      | 0    | AL=15  | 4 (90th percentile)<br>Range: <1 to 16<br>None of the ten samples collected exceeded the AL.            | No        | September 2005 | Corrosion of household plumbing systems; Erosion of natural deposits                                   |
| Copper ppm                    | 1.3  | AL=1.3 | 0.050 (90th percentile)<br>Range: <0.050 to 0.190<br>None of the ten samples collected exceeded the AL. | No        | September 2005 | Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives |

This Water Quality Report was prepared by Ross Clem, Water Plant Superintendent for the Town of Broadway. Please call if you have questions (896-3541).