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THOMAS C. SLIWOSKI  
Director of Public Works

Birthplace of the  
Council-Manager  
Form of Government

I am pleased to provide you with our Annual Drinking Water Quality Report for 2011. Our staff provides quality service each day, around the clock, to ensure your water is safely and efficiently delivered to your home. You can be assured that your drinking water meets or exceeds all state and federal water quality standards.

For the eighth consecutive year, the Water Treatment Plant has received a bronze Water Works Performance Award from the Virginia Department of Health. These awards recognize those water treatment plants that produce water with a quality that exceeds minimum regulatory standards (i.e. at least three times cleaner than required), and that operate in an exemplary manner.

As you read this report, I hope you will gain a greater appreciation of the value of one of our most precious natural resources, as well as gain a better understanding of the effort and dedication that goes into delivering your water every day. Should you have any questions about the source of your water or how it is treated, please feel free to contact Mr. Doug Towne, Plant Supervisor at 332-3961.

Sincerely,

THOMAS C. SLIWOSKI  
Director, Public Works

# 2011 Annual Drinking Water Quality Report

## INTRODUCTION

This Annual Drinking Water Quality Report for 2011 provides you with information about the quality of your drinking water. The City of Staunton is committed to providing you with safe drinking water. All efforts are made to protect our water supply and to deliver the best quality water possible to your home. You can be assured that your drinking water meets all state and federal requirements. The treatment of your drinking water is administered by the Virginia Department of Health (VDH), Office of Drinking Water.

If you have any questions about this report, need additional information about any aspect of your drinking water, or simply want to know how to participate in decisions that may affect the quality of your drinking water, please contact Mr. Doug Towne, Water Plant Supervisor, at (540) 332-3961.

## GENERAL INFORMATION

As water travels over the land surface or through the ground, it dissolves naturally occurring minerals and may pick up some 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 stormwater runoff, residential uses, and many other types of activities. Water from all surface sources is treated to make it drinkable while groundwater may or may not have any treatment. Staunton's primary water sources include a natural underground spring and reservoirs.

All drinking water, including bottled drinking water, may reasonably be expected to contain 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 those with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders, the 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). Testing for cryptosporidium was performed in 2005. Testing was conducted monthly for a one year period. All tests were found to be negative. As all tests were negative, we are no longer required to test for this organism.

Staunton's drinking water is fluoridated by the addition of an optimum fluoride concentration to help prevent tooth decay. Fluoridation at an optimum level is recommended by the Virginia Board of Health, the American Dental Association, the Centers for Disease Control, and the National Institutes of Health, among numerous other public health organizations.

## SOURCE WATER ASSESSMENT

A source water assessment was completed by the VDH on April 11, 2002. This assessment determined that the City's water sources may be susceptible to contamination because it is surface water exposed to a wide array of contaminants at varying concentrations and changing hydrologic, hydraulic, and atmospheric conditions that promote migration of contaminants from land use activities of concern within the assessment area. More specific information may be obtained by contacting the Water Treatment Plant supervisor.

## ADDITIONAL HEALTH INFORMATION FOR LEAD:

Elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water results primarily from materials and components used in service lines and home plumbing. The City of Staunton is responsible for providing high quality drinking water but cannot control the various materials used in plumbing components. When drinking water has been sitting in the lines inside your home for several hours, you can minimize the potential for lead exposure by running your tap for 15 to 30 seconds or until it becomes cold before using it 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 website sponsored by the U.S. Environmental Protection Agency at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).



## WATER QUALITY RESULTS

Microbiological Contaminants						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found / Range	Violation	Date of Sample	Typical Source of Contamination
Turbidity NTU	NA	TT= 0.3 NTU	Max turbidity = 1.002 NTU	No	Daily 2011	Soil runoff.
		TT = 95% of monthly samples must be < 0.3 NTU	Lowest monthly percentage was 99% of samples < 0.3 NTU			
Total Coliform Bacteria	0	Presence for coliform bacteria < 5% monthly	1	No	July 2011	Naturally present in the environment.
Inorganic Contaminants						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found / Range	Violation	Date of Sample	Typical Source of Contamination
Fluoride ppm	4	4	Range: 0.35 to 1.33 Avg: 0.82	No	Daily 2011	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate ppm	10	10	0.54	No	January 2011	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Chromium ppm	0.1	0.1	0.0057	No	January 2011	Discharge from steel and pulp mills; erosion of natural deposits.
Barium ppm	2	2	0.0226	No	January 2011	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Radiological Contaminants						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found / Range	Violation	Date of Sample	Typical Source of Contamination
Combined Radium pCi/L	0	5	0.36	No	February 2010	Erosion of natural deposits.
Alpha Emitters pCi/L	0	15	1.5	No	February 2010	Erosion of natural deposits.
Gross Beta pCi/L	0	50	2.7	No	February 2010	Decay of natural and man-made deposits.
Lead & Copper						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found / Range	Exceedance	Date of Sample	Typical Source of Contamination
Copper ppm	0	AL=1.3	0.368 (90 <sup>th</sup> percentile) None of the 30 samples collected exceeded the AL.	No	June 2011	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead ppb	0	AL=.015	4 (90 <sup>th</sup> percentile) One of the 30 samples collected exceeded the AL.	No	June 2011	Corrosion of household plumbing systems; erosion of natural deposits.
Disinfection By-products						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample	Typical Source of Contamination
Total Trihalomethanes (TTHM's) ppb	0	80	Running Average: 15 Range: 9.2 to 23.7	No	Quarterly 2011	By-product of drinking water chlorination.
Haloacetic Acids (HAA5's) ppb	NA	60	Running Average: 19 Range: 15.2 to 24.9	No	Quarterly 2011	By-product of drinking water chlorination.
Disinfection By-Products Precursors						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample	Typical Source of Contamination
Total Organic Carbon (TOC's) ppm	NA	TT	Range: ND to 1.24	No	Monthly 2011	Naturally present in the environment.

Your drinking water is routinely monitored according to Federal and State Regulations for a variety of contaminants. These are the results of our monitoring for the period of January 1st through December 31st, 2011, unless otherwise noted. The state allows us to monitor for some contaminants less than once per year because the concentrations for these contaminants rarely change.



## DEFINITIONS

In the table and elsewhere in this report, you will find many terms and abbreviations you may 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.

## VIOLATION INFORMATION

The City routinely monitors for contaminants in the water supply and all regulatory requirements are met. The table lists only those contaminants where some level of detection has been found. Many of these contaminants are naturally occurring. Other contaminants have been analyzed, however, they were not present or were below prescribed detection limits and no violations occurred.

Maximum Contaminant Levels (MCL's) are set at stringent levels by the U.S. Environmental Protection Agency. In developing these 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 these contaminants or a one-in-ten-thousand to a one-in-a-million chance of having the described health effect for these contaminants.