

# *2011 Annual Drinking Water Quality Report*

## Town of Appomattox

### **INTRODUCTION**

This Annual Drinking Water Quality Report for calendar year 2011 is designed to inform you about your drinking water quality. Our goal is to provide you with a safe and dependable supply of drinking water, and we want you to understand the efforts we make to protect your water supply. The quality of your drinking water must meet state and federal requirements administered by the Virginia Department of Health (VDH).

If you have questions about this report, want additional information about any aspect of your drinking water, or want to know how to participate in decisions that may affect the quality of your drinking water, please contact:

Mr. Mitch Stone (434) 352-8268
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The times and location of regularly scheduled council meetings are as follows:

2 <sup>nd</sup> Monday of each month at 7:30 p.m. and 4 <sup>th</sup> Tuesday of each month at 7:00 p.m. Council Chambers, Appomattox Municipal Building, 210 Linden Street, Appomattox, Virginia 24522
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### **GENERAL INFORMATION**

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 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 storm water 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 storm water 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 storm water 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 which 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 that must provide the same protection for public health.

Water from surface sources is treated to make it drinkable 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. 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).

## SOURCES AND TREATMENT OF YOUR DRINKING WATER

The source of your drinking water is groundwater from eight drilled wells. The following table contains the treatment process for each well:

Well	Treatment
#1	Blended Phosphate Product for Iron and Manganese Reduction, Diluted Chlorine Solution for Continuous Disinfection and Diluted Soda Ash Solution for pH Control
#5	Blended Phosphate Product for Iron and Manganese Reduction and Diluted Soda Ash Solution for pH Control
#9	Blended Phosphate Product for Iron and Manganese Reduction and Diluted Soda Ash Solution for pH Control
#15	Blended Phosphate Product for Iron and Manganese Reduction and Diluted Soda Ash Solution for pH Control
#25	Blended Phosphate Product for Iron and Manganese Reduction and Diluted Soda Ash Solution for pH Control
#39	Greensand Filtration for Iron and Manganese Removal, Diluted Chlorine Solution for Continuous Disinfection, Blended Phosphate Product for Corrosion Control, and Diluted Soda Ash Solution for pH Control
#41	Blended Phosphate Product for Iron and Manganese Reduction, Diluted Chlorine Solution for Continuous Disinfection and Diluted Soda Ash Solution for pH Control
#42	Blended Phosphate Product for Iron and Manganese Reduction and Diluted Soda Ash Solution for pH Control

A source water assessment of our system was conducted in 2002 by the Virginia Department of Health. The wells were determined to be of high susceptibility to contamination using the criteria development by the State in its approved Source Water Assessment Program.

The assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern, and documentation of any known contamination within the last 5 years. The report is available by contacting your water system operator at the phone number or address given elsewhere in this drinking water quality report.

## DEFINITIONS

Contaminants in your drinking water are routinely monitored according to federal and state regulations. The table below shows the results of this monitoring for the period of January 1<sup>st</sup> through December 31<sup>st</sup>, 2010. In the table and elsewhere in this report you will find 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 the contaminant is not detectable, based on the limits of the analytical equipment used.**

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

**Parts per billion (ppb) or Micrograms per liter (mg/l)** – one part per billion corresponds to one minute in 2,000 years, or one penny in \$10,000,000.

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

**Primary Maximum Contaminant Level (PMCL)**- the maximum allowable level of any particular contaminant.

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

**Maximum Contaminant Level Goal (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.

**Maximum Contaminant Level (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 Residual Disinfection Goal (MRDLG)** – the level of a drinking water disinfectant below which there is no known or expected risk to health.

**Maximum Residual Disinfection Level (MRDL)** - the highest level of a disinfectant allowed in drinking water.

**WATER QUALITY RESULTS**

We routinely monitor for various contaminants in the water supply to meet all regulatory requirements. The table below 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.

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<b>Inorganic Contaminants</b>						
<b>Contaminant / Unit of Measurement</b>	<b>MCLG</b>	<b>MCL</b>	<b>Level Found</b>	<b>Violation</b>	<b>Date of Sample</b>	<b>Typical Source of Contamination</b>
Nitrate ppm	10	10	Highest: 1.23 Range: <0.05 to 1.23	No	September, October 2011	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Barium ppm	2	2	0.044	No	September 2011 (Well 39)	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Flouride Ppm	4	4	Highest: 0.27 Range: <0.2 to 0.27	No	August 2010	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
<b>Radiological Contaminants</b>						
<b>Contaminant / Unit of Measurement</b>	<b>MCLG</b>	<b>MCL</b>	<b>Level Found</b>	<b>Violation</b>	<b>Date of Sample</b>	<b>Typical Source of Contamination</b>
Alpha emitters pCi/L	0	15	4.2	No	July 2009 (Well 15)	Erosion of natural deposits
Combined Radium pCi/L	0	5	2.9	No		Erosion of natural deposits

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Lead and Copper						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found / Range	Exceedance	Date of Sample	Typical Source of Contamination
Lead ppb	0	AL=15	5 (90 <sup>th</sup> percentile) <2 to 15.4 Of the ten samples collected none exceeded the AL.	No	September 2011	Corrosion of household plumbing systems; Erosion of natural deposits
Copper ppm	1.3	AL=1.3	0.3 (90 <sup>th</sup> percentile) Range: <0.02 to 0.3 Of the ten samples collected none exceeded the AL.	No	September 2011	Corrosion of household plumbing systems; Erosion of natural deposits
Disinfection Byproducts						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample	Typical Source of Contamination
TTHMs (Total Trihalomethanes) ppb	N/A	80	Average: 6.6 Range: 3.3 to 6.6	No	September 2011	By-product of drinking water disinfection
Chlorine ppm	MRDLG =4	MRDL =4	Average: 0.49 Range: 0.34 to 0.63	No	Monthly	Water additive used to control microbes
Aesthetic Quality						
Contaminant / Unit of Measurement	MCLG	SMCL	Level Found/Range	Exceedance	Date of Sample	Typical Source of Contamination
Iron ppm	N/A	0.3	Highest: 2.53 Range: <0.05 to 2.53	Yes	August 2010	Erosion of natural deposits
Manganese Ppm	N/A	0.05	Highest: 0.088 Range: <0.01 to 0.088	Yes	August 2010	Erosion of natural deposits

We are pleased to report to you that there were no detections of total coliforms, fecal coliforms or HAA5s (Haloacetic Acids) in the samples collected during calendar year 2011.

The results in the table are from testing conducted in 2005, 2006, 2007, 2008, 2009, 2010 and 2011. 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 representative, is more than one year old.

The U. S. Environmental Protection Agency sets MCL's at very stringent levels. 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 MCLs at levels that will result in no adverse health effects for some contaminants or a one-in-ten-thousand to one-in-one-million chance of having the described health effect for other contaminants.

**Public Education - 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 Appomattox 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 or at <http://www.epa.gov/safewater/lead>.