

Annual Drinking Water Quality Report

Town of New Market

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2013 is designed to provide you with valuable information about your drinking water quality. We are committed to providing 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 meets all 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. Michael Ritchie, Director of Public Works at 540-740-3432

You can obtain additional information by attending Town Council meetings held at 7:30 p.m. the third Monday of each month in the Town Council Chambers.

GENERAL 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. 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. Immune-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

For calendar year 2013 your drinking water came from groundwater and groundwater under the influence of surface water obtained from six drilled wells. Water is distributed throughout Town by a booster pump station, one storage tank and variously sized distribution piping.

Treatment of Wells 1 and 6 consists of chlorination. As water is pumped from the wells, a chlorine solution is injected into combined well discharge line to disinfect the water prior to distribution.

Treatment of Wells 2, 4, 8, and the Shenandoah Valley Academy (SVA) Well consist of membrane filtration and chlorination. Water pumped from the wells passes through a basket strainer to pretreat the water prior to membrane filtration and chlorination. The membrane filtration eliminates turbidity and bacteria from the water while chlorination is used to disinfect the water prior to distribution.

SOURCE WATER ASSESSMENTS

A source water assessment for the Town of New Market was completed by the ENSAT Corporation in cooperation with the County of Shenandoah and Shenandoah County Water Resources Advisory Committee. This assessment determined that the Town's water sources may be susceptible to contamination because they are groundwater or surface influenced groundwater exposed to a wide array of contaminants at varying concentrations. Changing hydrologic, hydraulic, and atmospheric conditions promote migration of contaminants from land use activities of concern within the assessment area. More specific information may be obtained by contacting the water system representative referenced within this report.

QUALITY OF OUR DRINKING WATER

Your drinking water is routinely monitored according to Federal and State Regulations for a variety of contaminants. The table on the next page shows the results of our monitoring for the period of January 1st to December 31st, 2013.

Most of the results in the table are from testing done in 2013. However, 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.

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.

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

Entry Point (EP) - place where water from the source or sources after the application of any treatment is delivered to the distribution system

WATER QUALITY RESULTS

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The tables list 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.

Microbiological

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Total Coliform Bacteria (1)	0	Presence of Coliform bacteria in > 1 sample per month	0	Presence or Absence	No	Monthly	Naturally present in the environment
E. Coli Bacteria -at source (2,3)	0	TT	1	MPN	NO	05/2013	Human and animal fecal waste

(1) Total Coliforms are analyzed monthly. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present.

(2) Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and headaches. *Fecal indicators, such as E. coliform bacteria, are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.*

(3) The VDH requires that we collect routine raw water samples quarterly to assess raw water quality. Routine raw (untreated) water sampling performed during May 2013 indicated the presence of E. coli bacteria in a water sample collected from Well No. 1. The source of this contamination is unknown and follow-up quarterly raw water samples collected during calendar year 2013 from Well No. 1 did not indicate the presence of E. coli bacteria. We do not believe a risk is posed since Well No. 1 is disinfected and no total coliform or E. coli bacteria was detected in any of the treated (disinfected) water samples collected during calendar year 2013. Quarterly monitoring continues with no further action required at this time.

Turbidity

Contaminant	MCLG	MCL	Highest Single Level Found	Unit Measurement	Lowest Monthly %<0.3	Violation	Date of Sample	Typical Source of Contamination
Turbidity (4)(5)	NA	TT	0.066	NTU	100	NO	07/2013	Soil Runoff

(4) Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of our water quality and the effectiveness of the filtration process.

(5) Turbidity Treatment Technique (TT) MCL: 1 NTU max; ≤ 0.3 NTU in at least 95% of all samples tested.

Inorganic Contaminants

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Nitrates	10	10	--	mg/l	--	--	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
Rt. 211 WTP EP			3.72		NO	02/2013	
Well 1/6 EP			5.14		NO	02/2013	
Barium	2	2	--	mg/l	--	--	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
RT 211 WTP EP			0.031		NO	02/2013	
Well 1/6 EP			0.022		NO	02/2013	
Copper	1.3	AL= 1.3	--	mg/l	--	--	Corrosion of household plumbing systems; Erosion of natural deposits
Rt. 211 WTP EP			0.023		NO	02/2013	
Well 1/6 EP			ND		NO	02/2013	

Disinfection Residual Contaminants

Contaminant	MRDLG	MRDL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Chlorine	4	4	1.12 (avg.) Range 0.78 -1.43	mg/l	NO	Monthly	Water additive used to control microbes

Radiological Contaminants

Contaminant	MCLG	MCL	Highest Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Alpha Emitters	0	15	--	pCi/l	--	--	Erosion of natural deposits
Rt. 211 WTP EP			0.8		NO	03/2010	
Well 1/6 EP			ND		NO	02/2011	
Beta Emitters	0	50	--	pCi/l	--	--	Decay of natural or man-
Rt. 211 WTP EP			1.8		NO	03/2010	made deposits
Well 1/6 EP			1.1		NO	02/2011	
Combined Radium	0	5	--	pCi/l	--	--	Erosion of natural deposits
Rt. 211 WTP EP			1.2		NO	03/2010	
Well 1/6 EP			ND		NO	02/2011	

Lead and Copper (Most Recent Monitoring Period - August 2011)

Contaminant	MCLG	MCL	Level Found	Unit Measurement	AL Exceeded	Samples >AL	Typical Source of Contamination
Lead (6)	0	AL=15	7	ppb	NO	1	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	1.3	AL=1.3	0.143	mg/l	NO	0	

(6) 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.

Lead Contaminants

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 New Market is responsible for providing high quality drinking water, but cannot control the variety of materials used in the 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 the 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>.

VIOLATION INFORMATION

We are in full compliance with all water quality, monitoring and reporting requirements and no violations occurred during the calendar year 2013.

The waterworks owners prepared this Drinking Water Quality Report with the assistance and approval of the Virginia Department of Health (VDH). Please call if you have questions.

Signature: _____

Date: _____