Annual Drinking Water Quality Report

Town of Berryville

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2011 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), Office of Water Programs.

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. David Tyrrell at (540) 955-1759.

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

Your drinking water is surface water obtained from the Shenandoah River. Water is distributed throughout the town by pumps at the water treatment plant, one booster pump station, one ground storage tank and two elevated storage tanks.

Water treatment includes pre-sedimentation, the addition of liquid alum and a polymer for coagulation, the addition of carbon for absorption, the addition of potassium permanganate as a pre-oxidant, and the addition of chlorine to disinfect the finished water. Sodium fluoride is also added to help prevent dental caries. The water is mixed with the coagulant, allowed to settle, and is filtered through two sand filters.

SOURCE WATER ASSESSMENTS

A source water assessment has been completed by the Virginia Department of Health (VDH). The assessment determined that the Shenandoah River serving our community is surface water exposed to an inconsistent array of contaminants at varying concentrations due to changing hydrologic, hydraulic and atmospheric conditions with land use activities of concern. More specific information may be obtained by contacting the water system representative referenced within this report.

QUALITY OF YOUR 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, 2011

Most of the results in the table are from testing done in 2011. 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.

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.

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	0	Presence of Coliform bacteria in > 1 sample per month	0	Presence or Absence	No	Monthly	Naturally present in the environment

Turbidity

Contaminant	MCLG	MCL	Highest Single Level Found	Unit Measurement	Lowest Monthly % <0.3 NTU	Violation	Date of Sample	Typical Source of Contamination
Turbidity (1)(2)	NA	TT	0.54	NTU	99.9	No	03/2011	Soil Runoff

(1) Turbidity is measure of the cloudiness of the water. We monitor it because it is a good indicator of our water quality and the effectiveness of filtration process.
(2) Turbidity Treatment Technique (TT) MCL: 1 NTU max; $\leq$ 0.3 NTU in at least 95% of all samples tested.

Total Organic Carbon

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Total Organic Carbon (3)	NA	TT	1.60 (avg) Range 0.84 – 3.01	Ratio of Actual to Required Removals	NO	Monthly	Naturally present in the environment

(3) Total Organic Carbon (TOC) has no health effects but provides formation medium for disinfection byproducts. These byproducts include trihalomethanes (TTHM) and haloacetic acids (HAA5).

Disinfection Residual Contaminants

Contaminant	MRDLG	MRDL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Chlorine	4	4	1.64 (avg) Range 0.55 – 2.20	mg/l	NO	Monthly	Water additive to control microbes

Disinfection Byproduct Contaminants

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Total Trihalomethanes (TTHM) (4)	0	80	49.69 avg) Range 13 - 100	ppb	NO	08/10	By-product of drinking water chlorination
Haloacetic Acid (HAA5)	0	60	42.38 avg) Range 20 - 57	ppb	NO	10/11	By-product of drinking water chlorination

(4) Some people who drink water containing Total Trihalomethanes in excess of the MCL over many years could experience problems with their liver, kidneys, or central, nervous systems, and may have increased risk of getting cancer.

Radiological Contaminants

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Alpha Emitters	0	15	0.3	pCi/l	NO	01/08	Erosion of natural deposits
Beta Emitters	0	50	1.7	pCi/l	NO	01/08	Decay of natural or man made deposits
Combined Radium	0	5	1.1	pCi/l	NO	01/08	Erosion of natural deposits

Inorganic Contaminants

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Nitrate	10	10	1.34	mg/l	NO	02/11	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride	4	4	0.87 (highest avg) Range 0.23 – 1.83	mg/l	NO	Monthly	Erosion of natural deposits; Discharge from fertilizer and aluminum factories; Water additive which promotes strong teeth
Barium	2	2	0.031	mg/l	NO	02/11	Discharge from drilling wastes; discharge from metal refineries; erosion of natural deposits

Lead and Copper (Most Recent Monitoring Period – September 2011)

Contaminant	MCLG	MCL	Level Found	Unit Measurement	AL Exceeded	Samples > AL	Typical Source of Contamination
Lead	0	AL = 15	10.7	ppb	NO	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	1.3	AL = 1.3	0.15	mg/l	NO	0	Corrosion of household plumbing systems; Erosion of natural deposits

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 Berryville 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 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 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 were in full compliance with all water quality, monitoring and reporting requirements and no violations occurred during the calendar year 2011.

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: 3/30/12

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