Annual Drinking Water Quality Report

Shenandoah Shores

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2016 is designed to provide you with valuable information about your drinking water quality. ***Testing for 2017 will be concluded in December and will be published next year.*** 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:

Sandra Thomas, Secretary, Shenandoah Shores – 540-635-6005
or
Mr. Daniel Althouse, Operator, Shenandoah Shores Water System, at 540-974-0604

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 waste water 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 groundwater obtained from five drilled wells. Water is distributed throughout the community by two booster pump stations, two storage reservoirs, and variously sized distribution pipes.

Treatment is provided for each well. Each well is equipped with a chlorine solution feeder to inject a chlorine solution to disinfect the water prior to distribution.

SOURCE WATER ASSESSMENT

A source water assessment has been completed by the Virginia Department of Health (VDH). The assessment determined that the wells serving our community may be susceptible to contamination because they are located in an area that promotes migration of contaminants from certain 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 1, 2016 to December 31, 2016.

Most of the results in the table are from testing done in 2016. 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:

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

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

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 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 Residual Disinfectant Level (MRDL) – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG) – The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

Nephelometric Turbidity Unit (NTU) – A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Non-detect (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 (ug/l) – 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 (ng/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) – A measure of the radioactivity in water.

Treatment Technique (TT) – A required process intended to reduce the level of a contaminant in drinking water.

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	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

Contaminant	MCLG	MCL	Level Found	Measurement	Violation	Date of Sample	Typical Source of Contamination
E. coli Bacteria – Well #1 (2)	0	TT	20	MPN (3)	No (4)	12/2016	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 such symptoms as diarrhea, nausea, cramps, and headaches. *Fecal indicators, such as* E. coli *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) Most probable number (MPN) means that number of organisms per unit volume that, in accordance with statistical theory, would be more likely than any other number to yield the observed test result or that would yield the observed test result with the greatest frequency, expressed as density of organisms per 100 milliliters. Results are computed from the number of positive findings of coliform group organisms resulting from multiple-portion decimal-dilution plantings.

(4) The VDH requires that we collect raw water samples quarterly to assess raw water quality. Routine raw (untreated) water sampling performed during December 2016 indicated the presence of E. coli bacteria in the water sample collected from Well No. 1. Subsequent samples from this well, plus years of sampling results indicate NO bacteria presence. This caused us to believe this sample was damaged. The source of this contamination is unknown and a follow-up sample collected in December 2016 from this well did not indicate the presence of any bacteria. We do not believe a risk is posed because all water from all of our wells is treated with disinfection before entering our storage and distribution system. Sampling of the treated (disinfected) water collected during calendar year 2016 showed no bacteria. Quarterly monitoring continues with no further action required at this time.

Radiological Contaminants

Contaminant	MCLG	MCL	Level Found (Range)	Unit	Violation	Date of Sample	Typical Source of Contamination
Alpha Emitters	0	15	6.7 (1.4-6.7)	pCi/L	NO	11/2015	Erosion of natural deposits
Beta Emitters	0	50*	4.6 (2.4 – 4.6)	pCi/L	NO	11/2015	Decay of natural and man-made deposits
Combined Radium	0	5	2.8 (ND – 2.8)	pCi/L	NO	11/2015	Erosion of natural deposits

* The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

Inorganic Contaminants

Contaminant	MCLG	MCL	Level Found (Range)	Unit	Violation	Date of Sample	Typical Source of Contamination
Barium	2	2	0.136 (0.079 - 0.136)	mg/l	NO	11/2014	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride	4	4	0.83 (0.22 - 0.83)	mg/l	NO	11/2014	Erosion of natural deposits; Water additive to promote strong teeth
Nitrate	10	10	2.34 (0.32 - 2.34)	mg/l	NO	10/2016	Runoff from fertilizer use; Leaching from septic tanks; Sewage; Erosion of natural deposits

Disinfection Byproduct Contaminants

Contaminant	MCLG	MCL	Level Found (Range)	Unit	Violation	Date of Sample	Typical Source of Contamination
Total Trihalomethanes (TTHM)	0	80	53.0 (2.4 – 53.0)	ppb	NO	08/2016	By-product of drinking water chlorination

Disinfection Residual Contaminants

Contaminant	MRDLG	MRDL	Level Found (Range)	Unit	Violation	Date of Sample	Typical Source of Contamination
Chlorine	4	4	0.66 (0.30 – 1.00)	mg/l	NO	Monthly	Water additive used to control microbes

Lead and Copper (Most Recent Monitoring Period – September 2014)

Contaminant	MCLG	AL	Level Found	Unit	AL Exceeded	Samples > AL	Typical Source of Contamination
Lead	0	15	< 2	ppb	NO	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	1.3	1.3	0.119	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. Shenandoah Shores 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

Two violations occurred during the 2016 calendar year. The first violation occurred during the first quarter of 2016. We failed to collect a raw water MPN sample from Well No. 5 as it was out of service for renovation. We resumed collection of well 5 samples in the second quarter of 2016. The second violation occurred during May 2016. While collecting samples from wells and distribution in May of 2016, the distribution sample to monitor coliform bacteria was not delivered to the lab for analysis, triggering an RTCR violation. All other monthly and quarterly bacteriological samples in 2016 were collected and passed.

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: 5-15-2017