



Stoney Creek Sanitary District

600 NORTH MAIN STREET, SUITE 106

WOODSTOCK, VIRGINIA 22664

www.shenandoahcountyva.us/water

Office (540) 459-7491

Fax (540) 459-7652

Office Hours:

Mon.-Fri. 8:30-4:30

Annual Drinking Water Quality Report

Stoney Creek Sanitary District

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2021 is designed to provide you with valuable information about your drinking water quality. The Stoney Creek Sanitary District is 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:

Patrick Felling, Stoney Creek Water Treatment Plant at (540) 459-7491

Additional information may be obtained at the Stoney Creek Sanitary District office located at 600 North Main Street, Suite 106, Main Street, Woodstock, VA 22664.

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). All reportable data for the water system can be searched in the public Drinking Water Watch (DWW) database by accessing the portal at <http://www.vdh.virginia.gov/drinking-water/dww>.

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) and the EPA website at <https://www.epa.gov/environmental-topics/water-topics>.

SOURCES AND TREATMENT OF YOUR DRINKING WATER

Your drinking water is groundwater and surface influenced groundwater obtained from seven (7) drilled wells. Water is distributed throughout the Sanitary District via distribution piping consisting of 10 inch, 8 inch, 6 inch, 4 inch and 2 inch pipes. Storage consists of three (3) storage tanks with a total storage of 433,000 gallons. Treatment is provided for all wells. This treatment consists of Micromembrane Filtration and Chlorination for Well P-7 and Manganese Greensand Filtration with the addition of chlorine and potassium permanganate for the remaining wells. The chlorine and potassium permanganate oxidize the naturally occurring iron and manganese found in our groundwater. This oxidation allows the Manganese Greensand Filters to remove the iron and manganese. The chlorine also disinfects the water prior to distribution.

SOURCE WATER ASSESSMENT

A source water assessment for the Stoney Creek WTP was completed by the Virginia Department of Health (VDH). This assessment determined that the WTP's raw water source, Well 7, may be susceptible to contamination because it is surface water influenced and could be 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 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 to December 31, 2021.

Most of the results in the table are from testing done in 2021. 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:

Page 3

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

Level 1 Assessment: A Level 1 Assessment is a study of the water system to identify potential problems and determine, if possible, why total coliform bacteria have been found in our water system.

Level 2 Assessment: A Level 2 Assessment is a very detailed study of the water system to identify potential problems and determine, if possible, why an E-coli MCL violation has occurred and / or why total coliform bacteria have been found in our water system on multiple occasions.

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-detects (ND): Lab analysis indicates that the contaminant is not present

Parts per billion (ppb) or Micrograms per liter ($\mu\text{g/L}$): One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

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.

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.

Ultraviolet (UV): A treatment method to disinfect water using ultraviolet light.

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

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) [Well P7 EP Only]	NA	TT	0.045	NTU	100	No	2021 daily	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 our filtration process.

(2) 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
Barium Well P1/P2 EP Well P3/P3A EP Well P4/P6/P8 EP Well P7 EP	2	2	-- 0.219 0.571 0.214 0.016	mg/l	-- No No No No	-- 2021 2021 2021 2021	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride Well P1/P2 EP Well P3/P3A EP Well P4/P6/P8 EP Well P7 EP	4	4	-- ND ND 0.21 ND	mg/l	-- No No No No	-- 2021 2021 2021 2021	Erosion of natural deposits; Discharge from fertilizer and aluminum factories; Water additive which promotes strong teeth
Sodium Well P1/P2 EP Well P3/P3A EP Well P4/P6/P8 EP Well P7 EP	none	none	-- 19.0 47.7 41.1 2.22	mg/l	-- No No No No	-- 2021 2021 2021 2021	Erosion of natural deposits; de-icing salt runoff; water softeners
Nitrates Well P1/P2 EP Well P3/P3A EP Well P4/P6/P8 EP Well P7 EP	10	10	-- ND ND ND 0.13	mg/l	-- No No No No	-- 2021 2021 2021 2021	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits

***Sodium** - There is presently no established standard for sodium in drinking water. An EPA advisory recommends water containing 30 to 60 mg/L should not be used as drinking water due to esthetics such as taste and color. Water containing more than 20 mg/L should not be used by persons whose physician has placed them on severely restricted sodium diets.

Radiological Contaminants

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Alpha Emitters Well P1/P2 EP Well P3/P3A EP Well P4/P6/P8 EP Well P7 EP	0	50	-- ND ND 0.8 ND	pCi/l	-- No No No No	-- 02/2013 02/2013 02/2019 02/2014	Erosion of Natural Deposits
Beta Emitters Well P1/P2 EP Well P3/P3A EP Well P4/P6/P8 EP Well P7 EP	0	50	-- ND ND ND 1.2	pCi/l	-- No No No No	-- 02/2013 02/2013 02/2019 02/2014	Decay of natural or man-made deposits

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

Disinfection Residual

Disinfectant	MRDLG	MRDL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Chlorine	4	4	1.66 (avg.) Range 0.87 – 2.10	mg/l	No	2021	Water additive used to control microbes

Disinfection Byproduct Contaminants

Contaminant	MCLG	MCL ppb	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Total Trihalomethanes (TTHM) ppb	0	80	9 average Range 1 - 21	ppb	No	2021	By-product of drinking water chlorination
Haloacetic Acid (HAA5) ppb	0	60	7 average Range ND - 10	ppb	No	2021	By-product of drinking water chlorination

Microbiological – At least two bacteriological samples are collected from the distribution system each month.

Contaminant	Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample(s)	Typical Source of Contamination
Total Coliform Bacteria (1)	presence or absence	0	presence of coliform bacteria in >1 sample per month	0	No	monthly	Naturally present in the environment

- (1) Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the waterworks.

Lead and Copper (Most Recent Monitoring Period – August 2020)

Contaminant	MCLG	MCL	Level Found, 90th percentile	Unit Measurement	AL Exceeded	Samples > AL	Typical Source of Contamination
Lead Copper	0 1.3	AL = 15 AL = 1.3	10.3 0.374	ppb mg/l	NO NO	0 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 Stoney Creek Sanitary District 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 (800-426-4791) or at <http://www.epa.gov/safewater/lead>.

Violation Information

We were in full compliance with all water quality parameters, and no violations occurred during the calendar year 2021.

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: April 20, 2022