



Stoney Creek Sanitary District

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ANNUAL DRINKING WATER QUALITY REPORT

CALENDAR YEAR 2018

This annual drinking water report for the calendar year 2018 is designed to provide you with valuable information regarding your drinking water quality. The Stoney Creek Sanitary District is committed to providing you with a safe and dependable drinking water supply. Furthermore, we want you to understand the efforts that 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 any questions regarding this report, and would like additional information on any aspect of your drinking water, or would like to know how to participate in decisions that may affect the quality of your drinking water, please contact Mr. Patrick Felling, Stoney Creek Sanitary District's Director of Public Services, at (540) 459-7491 or via E-mail: pfelling@shenandoahcountyva.us.

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).

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

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.

Additional information concerning the wells follows:

Source/Pump Capacity: Gallons Per Minute (GPM)		
Source	Current Yield *	Pump Capacity
Well # P – 1-2	50 GPM	50 GPM
Well # P – 3- 3A	50 GPM	50 GPM
Well # P – 4	50 GPM	50 GPM
Well # P – 7	250 GPM	250 GPM
Well # P – 8	35 GPM	35 GPM
Totals	435 GPM	435 GPM

*Current Yield reflects the maximum well production based on actual operating data.

The Virginia Department of Health has established a designed capacity of the Stoney Creek Sanitary District equal to 392,800 GPD. Our current water usage is approximately 147,000 GPD.

SOURCE WATER ASSESSMENTS

Under a program developed by VDH and the Shenandoah County Resources Committee in response to EPA requirements, a detailed Source Water Assessment was conducted to find ways to better protect our water sources. Surface influence of groundwater is less of a risk because the Sanitary District does not exist within the Valley Karst limestone region. Regardless, the Sanitary District is continuing its program to seal off abandoned wells to prevent groundwater contamination. Other recommendations included encouraging connection of on-site septic systems where practical and promoting environmentally friendly herbicide and pesticide application on the Bryce Resort golf course when possible. The Source Water Assessment is available for review at the Stoney Creek Sanitary District office.

QUALITY OF YOUR DRINKING WATER

Stoney Creek Sanitary District routinely monitors for constituents in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of 1 January to 31 December 2018.

Test results below show the range of results from testing of all 7 wells. Test results are from the last required samplings, dated February, 2013 – December, 2017. The state allows us to monitor certain contaminants less than once per year because concentrations of these contaminants do not change frequently.

DEFINITIONS

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

BDL – BELOW DETECTABLE LIMITS.

Non-Detects (ND) – laboratory analysis indicates that the constituent 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.

Parts per quadrillion (ppq) or Picograms per liter (picograms/l) – one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.

Picocuries per liter (pCi/L) –picocuries per liter is a measure of the radioactivity in water.

Millirems per year (mrem/yr) – measure of radiation absorbed by the body.

Million Fibers per Liter (MFL) – million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

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 treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level – The “Maximum Allowed” (MCL) is 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 – The “Goal” (MCLG) is 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.

TEST RESULTS

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) [Well P7 EP Only]	NA	TT	0.053	NTU	100	No	2018	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.

Radiological Contaminants							
Contaminant	MC LG	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 EP Well P7 EP	0	50	-- ND ND ND ND	pCi/l	-- No No No No	-- 02/2013 02/2013 02/2013 02/2014	Erosion of Natural Deposits
Beta Emitters Well P1/P2 EP Well P3/P3A EP Well P4/P6 EP Well P7 EP	0	50	-- ND ND 1.1 1.2	pCi/l	-- No No No No	-- 02/2013 02/2013 02/2013 02/2014	Decay of natural or man-made deposits

Inorganic Contaminants							
Contaminant	Violation Y/N	Highest Detected Level	Range of Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Antimony 3/3/15	No	<2	<2	ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Arsenic 3/3/15	No	<2	<2	ppb	0	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Beryllium 3/3/15	No	<2	<2	ppb	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries.
Cadmium 3/3/15	No	<2	<2	ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints.
Chromium 3/3/15	No	<10	<10	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits.
Lead 3/3/15	No	<2	<2	ppb	0	AL = 15	Corrosion of household plumbing systems, erosion of natural deposits.
Mercury (inorganic) 3/3/15	No	<0.2	<0.2	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland.

Inorganic Contaminants (Continued)							
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 EP Well P7 EP	2	2	-- 0.201 0.483 0.130 0.016	mg/l	-- No No No No	-- 02/2018 02/2018 02/2018 05/2016	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride Well P1/P2 EP Well P3/P3A EP Well P4/P6 EP Well P7 EP	4	4	-- ND ND ND ND	mg/l	-- No No No No	-- 02/2018 02/2018 02/2018 05/2016	Erosion of natural deposits; Discharge from fertilizer and aluminum factories; Water additive which promotes strong teeth
Copper Well P1/P2 EP Well P3/P3A EP Well P4/P6 EP Well P7 EP	1.3	AL = 1.3	-- ND ND 0.018 ND	mg/l	-- No No No No	-- 02/2018 02/2018 02/2018 05/2016	Corrosion of household plumbing systems; Erosion of natural deposits
Nitrates Well P1/P2 EP Well P3/P3A EP Well P4/P6 EP Well P7 EP	10	10	-- ND ND ND 0.16	mg/l	-- No No No No	-- 11/2018 11/2018 11/2018 11/2018	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits

Disinfection Residual Contaminants							
Contaminant	MRDL G	MRDL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Chlorine	4	4	1.65 (avg.) Range 1.50 – 1.80	mg/l	No	2018	Water additive used to control microbes

Disinfection Byproduct Contaminants							
Contaminant	MCL G	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Total Trihalomethanes (TTHM)	0	80	17 Range 8.8 – 30	ppb	No	2018	By-product of drinking water chlorination
Haloacetic Acid (HAA5)	0	60	21 Range 14 – 35	ppb	No	2018	By-product of drinking water chlorination

Lead and Copper (August 2017)							
Contaminant	MCLG	MCL	Level Found	Unit Measurement	AL Exceeded	Samples > AL	Typical Source of Contamination
Lead	0	AL = 15	5.8	ppb	NO	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	1.3	AL = 1.3	0.23	mg/l	NO	0	

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 (1-800-426-4791) 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 2018. We're proud that your drinking water meets or exceeds all Federal and State requirements.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. These improvements are sometimes reflected as rate structure adjustments. Thank you for understanding.

We at the Stoney Creek Sanitary District work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.