



**TOMS BROOK-MAURERTOWN
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 Toms Brook-Maurertown 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, Toms Brook-Maurertown 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 Toms Brook-Maurertown Sanitary District office located at 600 North Main Street, Suite 106, 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 stormwater 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 two (2)-drilled wells. Water is distributed throughout the Sanitary District via distribution piping consisting of 8 inch, 6 inch, 4 inch, and 2 inch pipes. Storage consists of two (2) storage tanks with a total storage of 259,000 gallons. Well No. 1 is chlorinated for disinfection prior to introduction into the distribution system. Well No. 3 is filtered through a micromembrane filtration plant and chlorinated prior to introduction into the distribution system.

Additional information concerning the wells follows:

Source/Pump Capacity: Gallons Per Minute (GPM)		
Source	Current Yield	Pump Capacity
Well # 1	50	50
Well # 3	255	162
Totals	305 GPM	212 GPM

The Virginia Department of Health has established a designed capacity of the Toms Brook-Maurertown Sanitary District equal to 241,600 GPD. Our current water usage is approximately 118,000 GPD.

SOURCE WATER ASSESSMENT

Under an EPA mandated program developed by VDH and the Shenandoah County Water Resource Committee, a detailed source water assessment was conducted to find ways to better protect our water sources. Because the Sanitary District's wells exist in the Valley's Karst limestone region, the wells are more susceptible to potential contamination by surface influences from improperly maintained septic fields, leaking underground storage tanks, sinkholes and agricultural processes. The Sanitary District has initiated strategies to educate property owners in the Sanitary District's recharge area about the importance of proper land management practices in order to protect both private and public water supplies. The Source Water Assessment and Protection Project are available for review at the Toms Brook-Maurertown Sanitary District office.

QUALITY OF YOUR DRINKING WATER

Toms Brook-Maurertown 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. Numerous contaminants are tested but are not present or detected and only those contaminants having some level detection are listed in the tables. The state allows us to monitor certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

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 the 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 minutes 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 5NTU 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 know 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 a treatment is delivered to the distribution system.

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 No 3 TP EP Only]	NA	TT ²	0.18	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.

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

Radiological Contaminants							
Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Alpha Emitters Well No 1 EP Well No 3 TP EP	0	15	-- ND 0.7	pCi/l	-- No No	-- 2015 2016	Erosion of natural deposits
Beta Emitters Well No 1 EP Well No 3 TP EP	0	50*	-- 2.8 1.3	pCi/l	-- No No	-- 2015 2016	Decay of natural or man-made deposits
Combined Radium Well No 1 EP Well No 3 TP EP	0	5	-- 1.7 1.4	pCi/l	-- No No	-- 2015 2016	Erosion of natural deposits

Inorganic Contaminants						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contaminant
Antimony	No	<2	ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics solder
Arsenic	No	<2	ppb	N/A	50	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Beryllium	No	<2	ppb	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical; aerospace; and defense industries
Cadmium	No	<2	ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium	No	<10	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Copper	No	<0.2	ppm	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Cyanide	No	<0.01	mg/l	0.2	0.2	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Fluoride	No	<0.2	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead	No	<2	ppb	0	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits
Mercury (inorganic)	No	<0.2	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Selenium	No	<10	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Thallium	No	<2	ppb	.05	2	Leaching from ore-processing sites; discharge from electronics; glass; and drug factories

Inorganic Contaminants (Continued)							
Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Barium Well No 1 EP Well No 3 TP EP	2	2	-- 0.102 0.050	ppm	-- No No	-- 2018 2018	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Nitrates Well No 1 EP Well No 3 TP EP	10	10	-- 3.71 3.60	ppm	-- No No	-- 2018 2018	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits

Disinfection Residual Contaminants							
Contaminant	MRD LG	MRD L	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Chlorine	4	4	1.23 Range 0.97 – 1.42	ppm	No	2018	Water additive used to control microbes

Disinfection Byproduct Contaminants							
Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Date of Sample	Typical Source of Contamination
Total Trihalomethanes (TTHM) (3)	0	80	16 Range 11 – 23	ppb	No	2018	By-product of drinking water chlorination
Haloacetic Acid (HAA5) (4)	0	60	4 Range ND – 10	ppb	No	2018	By-product of drinking water chlorination

Lead and Copper (June 2017)							
Contaminant	MCLG	MCL	Level Found	Unit Measurement	AL Exceeded	Samples > AL	Typical Source of Contamination
Lead Copper	0 1.3	AL = 15 AL = 1.3	8.0 0.32	ppb ppm	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 Toms Brook-Maurertown 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 Toms Brook-Maurertown 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.