

RAPIDAN SERVICE AUTHORITY
MADISON WATER SYSTEM
2018 Drinking Water Quality Report
PWSID 6113200

Rapidan Service Authority (RSA) is pleased to present to you this year's Annual Water Quality Report. This report is designed to inform you, the customer, about the water quality and services delivered to you every day. RSA's constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. RSA is committed to ensuring the quality of your water.

The Madison raw water source is White Oak Run. The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include: (1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. (2) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. (3) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses. (4) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems. (5) Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

A source water assessment of White Oak Run was completed by the Virginia Department of Health in May 2002 and may be obtained by contacting Rapidan Service Authority. While the source water was determined to be highly susceptible to contamination using the criteria developed by the state, no known contamination was discovered during the period of review. The assessment report consists of maps showing the source water assessment areas and an inventory of known land use activities of concern.

Water is pumped from White Oak Run for conventional treatment that includes mixing, sedimentation and filtration. Chlorine is added to disinfect the water prior to its entering the distribution system.

RSA wants its valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the third Thursday of each month at 2:00 P.M. in various locations on a rotating basis in the counties we serve of Orange, Madison, and Greene. If you have any questions about this report or concerning your water utility, please contact **Timothy L. Clemons at (434) 985-7811.**

RSA routinely monitors for constituents in the drinking water according to Federal and State regulations. The following table shows the results of monitoring for the period **January 1 through December 31, 2018**. In this table you will find terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

- *Action Level (AL)*: the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- *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 Goal (MRDLG)*: the level of 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 contaminants.
- *Maximum Residual Disinfectant Level (MRDL)*: the highest level of a disinfectant allowed in drinking water. There is no convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- *Nephelometric Turbidity Unit (NTU)*: a measure of the clarity of water. Turbidity in excess of 5 NTUs is just noticeable to the average person.
- *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 (ug/l)*: one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- *Picocuries per liter (pCi/l)*: a measure of radioactivity.
- *Treatment Technique (TT)*: a required process intended to reduce the level of a contaminant in drinking water. Bracketed numbers represent the range of values detected.

WATER QUALITY RESULTS								
Detected Contaminant	Sampling Year	Violation	Level Detected/Range	Units	MCLG	MCL	Likely Source of Contamination	
Chemical & Radiological Contaminants								
Barium	2018	No	0.0159	ppm	2	2	Erosion of natural deposits	
Alpha Particles	2018	No	0.222	pCi/L	0	15	Erosion of natural deposits	
Combined Radium	2018	No	0.652	pCi/l	0	5	Erosion of natural deposits	
Nitrite + Nitrate	2018	No	0.79	ppm	10	10	Runoff from fertilizer use; leaching from septic systems; erosion of natural deposits	
Turbidity % samples ≤ 0.3 NTU	2018	No No	0.30 100	NTU %	N/A N/A	TT 95%	Soil runoff	
Disinfection By-Products, Precursors & Residuals								
Chlorine	2018	No	0.56 (0.12-1.50)	ppm	MRDLG =4	MRDL =4	Water additive used to control microbes	
Total Organic Carbon	2018	No	(1.00-1.62) RAA 1.30	ppm	N/A	TT	Naturally present in the environment	
Haloacetic Acids	2018	No	49 (35-55)	ppb	N/A	60	By-product of disinfection	
Total Trihalomethanes	2018	No	49 (31-68)	ppb	N/A	80	By-product of chlorination	
Lead & Copper Contaminants		AL Exceeded?	Results of 90th% Value	Units	MCLG	Action Level	# of Sample Sites Exceed AL	Likely Source of Contamination
Lead	2017	No	<5	ppb	0	15	1	Corrosion of household plumbing systems
Copper	2017	No	0.036	ppm	1.3	1.3	0	Corrosion of household plumbing systems

We are pleased to inform you that we had no detections of total coliform bacteria in our water during calendar year 2018!

As you can see by the table, the Madison Water System had no violations for 2018. RSA is proud that your drinking water meets or exceeds all Federal and State requirements.

MCLs 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.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information can be obtained by calling the **Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791**.

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).

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. Rapidan Service Authority 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>.

In our continuing efforts to maintain a safe and dependable water supply it may be necessary to make improvements in your water system. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements.

The employees at RSA work around the clock to provide top quality water to every tap. We ask that all our customers help us protect and conserve our water sources, which are the heart of our community, our way of life and our children's future. We also want to remind all of our customers to be aware of possible cross connections to the potable water system. A cross connection is a link between the potable water system and any non-potable source and can affect not only your home or business, it can affect the entire potable water supply. If you think you have the possibility of a cross connection, please contact RSA immediately.

Please call our office if you have questions regarding your water system.