

ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2019

Presented By
City of Manassas



Our Mission Continues

We are pleased to present our annual water quality report covering testing performed between January 1 and December 31, 2019. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you.

Please remember that we are always available should you ever have any questions or concerns about your water.

Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 two 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



Community Participation

You are invited to participate in our Utility Commission meetings and voice your concerns about your drinking water. The Utility Commission meets on the second Thursday of each month at 5:30 p.m. at the City of Manassas Public Works Building. If you would like to attend or have any questions, please contact the Utility Department at (703) 257-8351.

Information on the Internet

The U.S. EPA (<https://goo.gl/TFAMKc>) and the Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation and public health. Also, the Virginia Department of Health, Office of Drinking Water, has a Web site (<https://goo.gl/3Tn805>) that provides complete and current information on water issues in Virginia, including valuable information about our watershed.

Source Water Assessment

Under provisions of the Safe Drinking Water Act, states are required to develop comprehensive source water assessment programs to identify the watersheds that supply public tap water, provide an inventory of contaminants present in the watershed, and assess susceptibility to contamination in the watershed.

The Virginia Department of Health (VDH) conducted a source water assessment of Lake Manassas in 2002 and found it to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program. The VDH assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern in Prince William County, and documentation of any known contamination within the five year study period. The report is available by contacting the city environmental program manager at (703) 257-8342. Another source water assessment will be conducted in the near future.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call the City Compliance Officer at (703) 257-8342.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

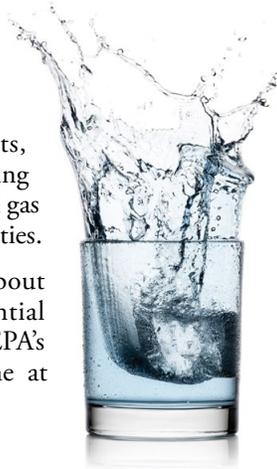
Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.



Water Conservation Tips

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

Where Does My Water Come From?

The City of Manassas has two reliable water supply sources. The primary source is the City of Manassas Water Treatment Plant, which draws water from Lake Manassas, an impoundment on Broad Run in Western Prince William County. The watershed for Lake Manassas covers approximately 74.5 square miles, with the reservoir covering over 880 acres. If needed during peak consumption periods or emergencies, water may be supplied from a second water source, the Prince William County Service Authority (PWCSA). Water from the PWCSA is treated at Fairfax Water's Northern Treatment Facility, the James J. Corbalis Plant, which withdraws water from the Potomac River. To learn more about our watershed, go to U.S. EPA's Surf Your Watershed at www.epa.gov/surf.



Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. The water we deliver must meet specific health standards. Here we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the fourth stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on our drinking water. UCMR4 sampling benefits the environment and public health by providing the U.S. EPA with data on the occurrence of contaminants suspected to be in drinking water in order to determine if U.S. EPA needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data are available to the public, so please feel free to contact us if you are interested in obtaining that information. If you would like more information on the U.S. EPA's Unregulated Contaminant Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Atrazine (ppb)	2019	3	3	0.13	0.10–0.20	No	Runoff from herbicide used on row crops
Barium (ppm)	2019	2	2	0.01	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2019	[4]	[4]	2.9	0.1–3.9	No	Water additive used to control microbes
Fluoride (ppm)	2019	4	4	0.36	0.31–0.45	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2019	60	NA	36	13–54	No	By-product of drinking water disinfection
Nitrate-Nitrite Combined (ppm)	2019	10	10	0.64	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Simazine (ppb)	2019	4	4	0.03	ND–0.10	No	Herbicide runoff
TTHMs [Total Trihalomethanes] (ppb)	2019	80	NA	44	11–51	No	By-product of drinking water disinfection
Total Organic Carbon (removal ratio)	2019	TT ¹	NA	1.45	1.39–1.49	No	Naturally present in the environment
Turbidity ² (NTU)	2019	TT	NA	0.099	0.027–0.099	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2019	TT = 95% of samples meet the limit	NA	100	NA	No	Soil runoff
Tap water samples were collected for lead and copper analyses from sample sites throughout the community							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2018	1.3	1.3	0.13	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2018	15	0	0.41	0/30	No	Lead service lines; Corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

UNREGULATED CONTAMINANT MONITORING RULE - PART 4 (UCMR4)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
HAA5 (ppb)	2019	26	23–29	By-product of drinking water disinfection
HAA6Br (ppb)	2019	5.6	4.7–6.4	By-product of drinking water disinfection
HAA9 (ppb)	2019	32	28–35	By-product of drinking water disinfection
Manganese (ppb)	2019	0.5	0.4–0.6	Naturally occurring element; Used in steel production, fertilizer, batteries, and fireworks; Drinking water and wastewater treatment chemical; Essential nutrient
Tebuconazole (ppb)	2019	0.036	ND–0.072	Used as a fungicide

¹ The value reported under Amount Detected for TOC is the lowest ratio of the percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than 1 indicates that the water system is in compliance with TOC removal requirements. A value of less than 1 indicates a violation of the TOC removal requirements.

² Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90 percent of our lead and copper detections.

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as the highest LRAAs.

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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 contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

removal ratio: A ratio between the percentage of a substance actually removed to the percentage of the substance required to be removed.

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

Safeguard Your Drinking Water

Protection of drinking water is everyone's responsibility. You can help protect drinking water sources in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides, which contain chemicals that can negatively impact drinking water sources.
- Pick up after your pets.
- If you have a septic system, properly maintain the system to reduce leaching to water sources, or consider connecting to city utilities.
- Dispose of chemicals and used motor oil at one of the city's scheduled household hazardous waste drop-off events at the Manassas Transfer Station. Visit manassascity.org/hhw for more information.
- Volunteer by adopting a stream through Keep Manassas Beautiful. Visit manassascity.org/kmb for more information.

Storm drains dump directly into your local water body. The city wants to know of any illegal dumping into city storm drains or streams. To report illegal dumping, please use SeeClickFix.com/Manassas-Virginia or send an email to stormwater@manassasva.gov. Remember, only rain down the drain!



BY THE NUMBERS



The number of gallons of water produced daily by public water systems in the U.S.

34
BILLION

1
MILLION The number of miles of drinking water distribution mains in the U.S.

The amount of money spent annually on maintaining the public water infrastructure in the U.S.

135
BILLION

300
MILLION The number of Americans who receive water from a public water system.

The age in years of the world's oldest water found in a mine at a depth of nearly two miles.

2
BILLION