

City of Manassas Park 2019 Water Quality Report

PWSID: 6687100



Continuing Our Commitment

We are pleased to present the 2019 Water Quality Report. This edition covers all testing completed from January 1, 2019 to December 31, 2019.

As always, we are committed to delivering the highest quality drinking water. To that end, we remain vigilant in meeting the challenges of improving the City's water quality, availability and delivery system assets to serve the citizens of Manassas Park now and into the future.

For more information about this report, or for questions related to your drinking water, please contact :

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Lead in Drinking Water

Lead is a naturally occurring element in our environment. Consequently, our water supply is expected to contain small, undetectable amounts of lead. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. A dose that would have little effect on an adult can have a significant effect on a child.

On average, it is estimated that lead in drinking water contributes between 10% and 20% of the total lead exposure in young children.

Lead in drinking water comes primarily from materials and components associated with service lines and home plumbing. The City of Manassas Park provides drinking water at an optimum pH and mineral content level to help prevent corrosion in your home's pipes.

The City of Manassas Park is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components.

The EPA estimates that more than 40 million U.S. residents use water that can contain lead in excess of the EPA's action level of 15 ppb. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 15 to 30 seconds or until it becomes cold or reaches a steady temperature before the using water for drinking or cooking.

Use only water from the cold-water tap for drinking, cooking and for making baby formula. Hot water is likely to contain higher levels of lead. 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 National Lead Information Center at 800-LEAD-FYI and the Safe Drinking Water Hotline at: 800-426-4791 or go to the EPA website - www.epa.gov/safewater/lead

Water Sources—Where Does My Water Come From?

The city is divided into two zones: a high-pressure zone and a low-pressure zone. Hydraulic grade lines define these zones. The low-pressure zone serves all areas west of Route 28 and the high-pressure zone serves all areas east of Route 28.

The high-pressure zone is supplied with surface water drawn from the Potomac River, treated at Fairfax Water's Northern Treatment Facility, The James J. Corbalis Plant and purchased from the **Prince William County Service Authority (PWCSA)**.

The low-pressure zone is supplied with surface water drawn from Lake Manassas, a 790+ acre impoundment on Broad Run located in Western Prince William County that holds 5.3 billion gallons of water at full capacity. Water from Lake Manassas is treated at the **City of Manassas Water Treatment Plant** and purchased from the City of Manassas.

For more information regarding these watersheds, go to the U.S. Environmental Protection Agency (EPA) *Surf Your Watershed* at www.epa.gov/surf.

Under provisions of the Safe Drinking Water Act, states are required to develop comprehensive Source Water Assessment Programs that provide the following information:

- Identification of watershed that supplies public tap water
- An inventory of contaminants present in the watershed
- An assessment of watershed susceptibility to contamination

The Virginia Department of Health (VDH) conducted a Source Water Assessment of the Lake Manassas Reservoir and the Potomac River in 2002. Both watersheds were determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program.

This determination is consistent with the state's finding of other surface waters throughout the Commonwealth of Virginia. VDH assessment reports consist of maps that illustrate source water assessment areas, an inventory of known land use activities and documentation of any known source water contamination within the five year study period.

You may access these individual water quality reports as follows:

City of Manassas: (Lake Manassas) www.manassascity.org, or contact Ivy Ozmon, Water Department Compliance Officer at (703) 257-8342.

PWCSA (Prince William County Service Authority) Fairfax Water, www.fcwa.org or call (703) 698-5600.

Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population.

Immuno-compromised persons such as individuals 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. The U.S. EPA and Centers for Disease Control and Preventions (CDC) provide guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants, and are available from the Safe Drinking Water Hotline at 1-800-426-4791.



During the past year, hundreds of water samples have been tested in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentration of these substances does not change frequently. In these cases, the most recent sample data are included along with the year in which the sample was taken.

Disinfection & Disinfection By-Products	Unit of Measure	MCL [MRDL]	MCLG [MRDLG]	LEVEL DETECTED	RANGE LOW - HIGH	VIOLATION	TYPICAL SOURCE
Chlorine	ppm	[4]	[4]	1.90	0.39 - 3.2	No	Water additive used to control microbes
Haloacetic Acids [HAA]	ppb	60	N/A	32	2 - 57	No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes]	ppb	80	N/A	44	7.2-88	No	By-product of drinking water chlorination.

Contaminants	Unit of Measure	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW - HIGH	VIOLATION	TYPICAL SOURCE
Barium	ppm	2	2	0.049	0.01 - 0.049	No	Discharge of drilling wastes, metal refineries; erosion from natural deposits
Uranium	ppb	30	0	0.088 ²	ND - 0.088 ²	No	Erosion of natural deposits
Radium 226	pCi/L	5	0	0.186 ²	ND - 0.186 ²	No	Erosion of natural deposits
Fluoride	ppm	4	4	0.7	0.31 - 0.7	No	Water additive which promotes strong teeth
Nitrate [as Nitrogen]	ppm	10	10	1.26	0.64 - 1.68	No	Runoff from fertilizer use;
Beta/Photon Emitters	pCi/L	50 ¹	0	4.78 ²	ND - 4.78 ²	No	Erosion of natural and man-made deposits
Atrazine	ppb	3	3	0.20	0.10 - 0.20	No	Herbicide runoff
Simazine	ppb	4	4	0.10	ND - 0.10	No	Herbicide runoff

ND - Non-detect, below detection level ppm = parts per million ppb = parts per billion pCi/L = picocuries per liter

¹EPA considers 50 pCi/L to be the level of concern for beta particles. Corbalis Beta/photon Emitter data, 2017.

² This radioactive contaminant result is above the analysis -specific detection level but below the minimum detection limits prescribed in the Consumer Confidence Rule in 40-CFR 141.151(d) and is not required for CCR reporting.

Contaminant information provided by the City of Manassas Water Treatment Facility and the PWCSA (Fairfax Water—James J. Corbalis Water Treatment Plant)

Total Organic Carbon	MCL [MRDL]	MCLG [MRDLG]	VIOLATION	TYPICAL SOURCE
	TT ¹ (ratio ²)	N/A	NO	Naturally present in the environment

Total Organic Carbon has no health effects. However, it provides a medium for the formation of disinfection by products. These by products include trihalomethanes and haloacetic acids. Compliance with the treatment technique reduces the formation of these disinfection by products.

(1) TT - Treatment Technique

(2) Ratio of actual Total Organic Carbon removal versus required Total Organic Carbon removal between source and treated waters.

Total Organic Carbon information provided by the City of Manassas Water Treatment Plant and the PWCSA (Fairfax Water— James J. Corbalis Water Treatment Plant)

Turbidity	MCL	MCLG	Highest Single Measurement	Lowest Monthly % Samples meeting Treatment Turbidity Limit	TYPICAL SOURCE
	TT ¹ (NTU ³)	N/A	0.24	100%	Soil run-off

Turbidity levels are measured during the treatment process after water has been filtered, but before disinfection. The turbidity level of filtered water shall be less than or equal to 0.3 NTU in at least 95% of the measurements taken each month and shall at no time exceed 1 NTU.

(3) NTU = Nephelometric Turbidity Unit

n/a = not applicable

Turbidity information provided by the City of Manassas Water Treatment Plant and the PWCSA (Fairfax Water— James J. Corbalis Water Treatment Plant)

Lead and Copper	Unit of Measure	Action Level	MCLG	90th Percentile	Sites Above Action Level	Violation	TYPICAL SOURCE
Copper	ppm	1.3	1.3	0.0987	0	No	Corrosion of household plumbing systems
Lead	ppb	15	0	< 2.5	0	No	Corrosion of household plumbing systems including fittings and fixtures.

Lead and Copper: Tap water samples were collected from 30 sample sites throughout the community in 2018. The next round of Lead and Copper testing will be Performed in 2021.

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Table Definitions

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

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.

NRL: No regulatory limit

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.

pCi/L (picocuries per liter): A measure of radioactivity.

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 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.

Turbidity: A measure of the clarity of the water, measured in Nephelometric Turbidity Units (NTU). Turbidity has no health effects, however it can interfere with disinfection while providing a medium for microbial growth.

QRAA: Quarterly Running Annual Average

Unregulated Contaminant Monitoring Rule 4 (UCMR4)

The 1996 amendments to the Safe Drinking Water Act require that once, every five years, the EPA issues a list of no more than 30 unregulated contaminants to be monitored by public water systems. The "Revisions to the Unregulated Contaminant Monitoring Rule (UCMR 4) for Public Water Systems and Announcement of Public Meeting" was published in the Federal Register on December 20, 2016 (81 FR 92666). UCMR 4 monitoring began in 2018 and will conclude in 2020. The full scope of the monitoring includes monitoring for a total of 30 chemical contaminants: 10 cyanotoxins (nine cyanotoxins and one cyanotoxin group) and 20 additional contaminants (two metals, eight pesticides plus one pesticide manufacturing byproduct, three brominated haloacetic acid disinfection byproducts groups, three alcohols, and three semivolatile organic chemicals).

The City of Manassas Park participated in the EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by taking additional samples of our drinking water which were submitted to an EPA approved Laboratory for testing. This program benefits Public health and the environment by providing the EPA with nationally representative data on the occurrence of specific contaminants in drinking water. Data provided by the UCMR program and other sources helps the EPA to determine if they need to impose new regulatory standards to protect and improve drinking water quality. For more information on the EPA's Unregulated Contaminant Monitoring Rule, please contact the Safe Drinking Water Hotline at (800) 426-4791.

Unregulated Contaminants Detected In UCMR4

Contaminant	Year Sampled	Amount Detected	Range	Use or Environmental Source
HAA5 (ppb)	2019	19.1	3.2-52	Byproduct of drinking water disinfection
HAA6Br (ppb)	2019	6.1	3.1 - 13	Byproduct of drinking water disinfection
HAA9 (ppb)	2019	24.6	6.3 - 63	Byproduct of drinking water disinfection
Manganese (ppb)	2019	0.5	3.5	Naturally occurring element: Used in steel production, fertilizer, Batteries and fireworks. Drinking water and wastewater treatment chemical: Essential nutrient.

HYDRANT FLUSHING

In an effort to ensure safe, high quality drinking water for our residents, the City of Manassas Park performs hydrant flushing exercises in order to clean and disinfect the interior of our water distribution system.

Hydrant flushing is the process of opening specific fire hydrants throughout the City, allowing a rapid flow of water to surge through the water distribution mains. This increased flow produces a scouring effect that helps to remove sediment from within the distribution system.

DISINFECTION TREATMENT

The City coordinates hydrant flushing activity with a change in the disinfection treatment process implemented by our water source providers, the City of Manassas and the Prince William County Service Authority (Fairfax Water - James J. Corbalis Treatment Plant). During this time, the type of chlorine used is changed from chloramine to free chlorine, a more aggressive treatment. This temporary change prevents bacteria from developing resistance to the regular disinfection treatment process. Chloramines and free chlorine are both safe and effective.

Some customers may notice a slight increase in the smell of chlorine, while others may not notice any changes at all, as taste/odor sensitivity levels are unique to each individual.

The Virginia Department of Health publishes guidelines on the minimum and maximum concentrations for disinfectants in drinking water. Our source providers maintain the water quality within those guidelines. As a result, the water provided to the City of Manassas Park is safe for people and animals to drink, for cooking and bathing and for all other common household uses.

For water usage specific to such purposes as kidney dialysis, aquarium usage, or for businesses requiring highly processed water, precautions must be taken to remove or neutralize chloramines and chlorine.

For additional information on drinking water standards, go to www.vdh.virginia.gov or you may contact the Manassas Park Dept. of Public Works at (703) 393-0881 with additional questions about your drinking water.

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Substances That Might Be In Drinking 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 (FDA) 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, this 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 storm water 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 storm water 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 storm water 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

Water conservation measures are an important first step in protecting our water supply. Such measures not only save the supply of our source water but can also save you money by reducing your water bill.

Here are a few suggestions to help you conserve water and save money:

Conservation measures you can use inside your home include:

- Fix leaking faucets, pipes, toilets
- Replace old fixtures; install water-saving devices in faucets, toilets, and appliances
- Wash only full loads of laundry
- Do not use the toilet for trash disposal
- Take shorter showers

You can conserve outdoors as well:

- Water the lawn and garden in the early morning or evening
- Use mulch around plants and shrubs
- Repair leaks in faucets and hoses

Information on other ways that you can help conserve water can be found at www.epa.gov/safewater/publicoutreach/index.htm.

Cross Connection Control

Cross-connections are unprotected connections between a potable water system and any source or system containing untreated water or a substance that may not be considered safe. Over the last several years, the American Waterworks Association has documented hundreds of incidents nationwide involving cross-connections that have resulted in back-flow of contaminants into the potable water supply. Examples include illness caused by pesticides, antifreeze, metals, paint solvents and acid entering the supply.

You may not think of your home as having hazards that might affect the municipal water supply, however, a common garden hose submerged in a swimming pool or water bucket creates a cross connection. If a water main breaks or if a fire hydrant nearby is being used, water pressure drops and the potential exists for a suction event to occur. This means that water in your kiddie pool or carwash bucket could be drawn back into the water system. Once there, the contaminated water could spread quickly to thousands of people. This is a serious concern of all water utilities. We can treat water, but we need to continue to protect it once it leaves the treatment plant and flows through the distribution system.

To prevent contaminants from being drawn into our potable water supply through an undesirable reversal of flow in our distribution system, the Manassas Park Cross Connection Control Plan requires the installation of devices between the potable water supply and source of potential contamination. All homes and businesses should have backflow protection. For additional information, please refer to our website at www.cityofmanassaspark.us, under the tab, "Codes and Ordinances", Chapter 7, Article III.

For more information regarding your 2019 Water Quality Report, please contact:

City of Manassas Park Department of Public Works

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Public Works Office Hours:

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