The background of the cover is a photograph of a large steel truss bridge spanning a body of water. The scene is captured at sunset or sunrise, with a warm orange and yellow sky. In the distance, a marina with many sailboats is visible. The water is dark blue with some ripples. The bridge's structure is prominent, with its steel beams and supports clearly visible. The overall mood is serene and scenic.

2020

WATER QUALITY REPORT

West System 6153251

A MESSAGE FROM THE GENERAL MANAGER

Dear valued customer,

As I write this message, the COVID-19 pandemic continues to affect populations around the world. With that in mind, the Prince William County Service Authority (PWCSA) wants to reassure you that you can have confidence in the quality of the water we provide to our customers.

The water supplied to you by PWCSA undergoes treatment processes that kill or remove viruses from drinking water. Additionally, the Centers for Disease Control and Prevention reports that the COVID-19 virus has not been detected in treated drinking water.

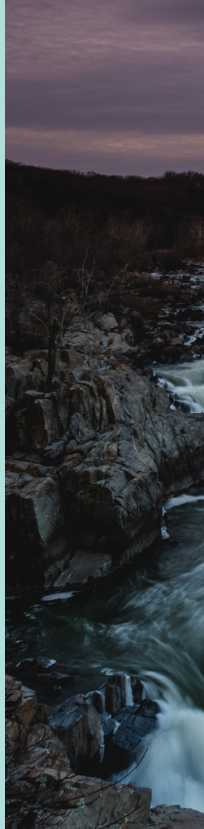
This Water Quality Report includes the results of water quality testing performed during calendar year 2019, or the most recent regulatory period. We are pleased to inform you that the test results met all federal and state water quality requirements.

PWCSA remains committed to providing high quality water and reliable service to our customers throughout Prince William County.

Sincerely,



Dean E. Dickey
General Manager





THE SOURCE OF YOUR DRINKING WATER

Your water is drawn from both the Potomac River and Lake Manassas.

More than eight million gallons of water from the Potomac River are distributed every day to PWCSA customers after being treated at the Fairfax Water's James J. Corbalis, Jr. Water Treatment Plant in northern Fairfax County.

Lake Manassas is another water source for a portion of western Prince William County. The lake, which is formed by the T. Nelson Elliott Dam and owned by the City of Manassas, supplies some PWCSA customers in the Greater Manassas area of the County with nearly five million gallons of water a day.

PWCSA routinely tests the quality of the water at multiple points throughout its distribution system.

SOURCE WATER ASSESSMENT SUMMARY

Under the provisions of the federal Safe Drinking Water Act, states are required to develop comprehensive source water assessment programs that meet the following requirements:

Identify the watersheds that supply public tap water.

Provide a list of contaminants present in the watershed.

Assess susceptibility to contamination in the watershed.

Fairfax Water conducted the source water assessment for the Potomac River. The Virginia Department of Health (VDH) conducted the source water assessment for Lake Manassas. These assessments consist of maps of the elevated watershed area, an inventory of known land use activities and documentation of any potential source of water contamination within the last five years.

Based on the criteria developed by the state, the Potomac River and Lake Manassas were determined to be highly susceptible to contamination. This determination is consistent with the state's findings of other surface waters (rivers, lakes and streams) throughout the Commonwealth of Virginia.

PWCSA is committed to protecting its drinking water sources. Please report illegal dumping of waste motor oil and other potential contaminants immediately to PWCSA's Regulatory Affairs Office (contact information below). Please keep the safety of your water supply in mind when applying fertilizer, herbicides and pesticides to your lawn and disposing of chemicals. If you would like more information about the sources of your water or a copy of the Source Water Assessment, please contact the Regulatory Affairs Office at (703) 331-4162 or by email at water_quality@pwcsa.org.

PWCSA also administers Designated Hydrant Withdrawal and Cross Connection Control programs to protect the water distribution system from contamination. PWCSA closely supervises its infrastructure and operations in order to provide reliable water services to its customers throughout Prince William County.

CRYPTOSPORIDIUM INFORMATION

Cryptosporidium is a microbial pathogen sometimes found in surface waters throughout the United States. PWCSA purchases water from Fairfax Water and the City of Manassas, which consistently maintain their filtration processes in accordance with regulatory guidelines to maximize removal efficiency and reduce any risk of infection by this organism.

Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised people, infants and small children, and the elderly are at greater risk of developing a life-threatening illness. PWCSA encourages immunocompromised individuals to consult their doctor regarding appropriate precautions to avoid infection.

Cryptosporidium infections may be spread through means other than drinking water, such as other people, animals, water, swimming pools, fresh food, soils and any surface that has not been sanitized after exposure to feces.

The Environmental Protection Agency (EPA) created the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) to provide for increased protection against microbial pathogens, such as Cryptosporidium.

Under that rule, the average Cryptosporidium concentration that determines whether additional treatment measures are needed is 0.075 oocysts per liter.

Fairfax Water's and the City of Manassas's LT2ESWTR Round 2 monitoring programs began in April 2015 and involved the collection of one sample from water treatment plant sources each month for a period of two years. Monitoring for compliance with the LT2ESWTR Round 2 was completed in March 2017.

Cryptosporidium concentrations were below the 0.075 oocysts per liter.

SPECIAL PRECAUTIONS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons, such as people with cancer undergoing chemotherapy, people 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 guidelines on appropriate means to lessen the risk of infection by microbial contaminants can be obtained by calling the EPA Safe Drinking Water Hotline at (800) 426-4791.



LEAD IN DRINKING WATER

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water comes primarily from materials and components associated with service lines and premise plumbing, which is all plumbing located within the property line with a direct connection to the potable water supply system. PWCSA is responsible for providing high quality drinking water, but cannot control the variety of materials used in premise plumbing components.

When water has been sitting in pipes for several hours, you can minimize the potential for lead exposure by flushing your tap with cold water 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 EPA Safe Drinking Water Hotline or online at www.epa.gov/safewater/lead.



SOURCE WATER

The sources of tap water include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water moves through the ground, it dissolves naturally occurring minerals and, in some cases, the presence of animal or human activity.

CONTAMINANTS THAT MAY BE PRESENT

Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

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 storm water runoff and septic systems.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems.

Please note that drinking water may contain small amounts of some contaminants. The presence of these contaminants does not necessarily indicate a health risk.

More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline at (800) 426-4791.

ings and wells. As water travels over the surface of the land or through radioactive material, and can pick up substances resulting from the

SENT IN SOURCE WATER INCLUDE:

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.

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

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



REGULATED SUBSTANCES TABLE

SUBSTANCE (UNITS)	MCLG	MCL	AVERAGE	MINIMUM
Atrazine (ppb)	3	3	0.13	0.10
Barium (ppm)	2	2	0.026	0.01
Beta Photon Emitters (pCi/L)	0	50	3.33	ND
Fluoride (ppm)	4	4	0.5	0.3
Nitrate [as Nitrogen] (ppm)	10	10	0.96	0.64
Radium 226 (pCi/L)	0	5	0.145	ND
Simazine (ppb)	4	4	0.03	ND
Uranium (ppb)	0	30	0.085	0.083
SUBSTANCE (UNITS)	MRDLG	MRDL	HIGHEST QUARTERLY RUNNING ANNUAL AVERAGE	MINIMUM
Chlorine (ppm)	4	4	2.8	0.6
SUBSTANCE (UNITS)	MCLG	MCL	HIGHEST QUARTERLY RUNNING ANNUAL AVERAGE	MINIMUM
Haloacetic Acids [HAAs] (ppb)	N/A	60	33.6	1.57
Total Trihalomethanes [TTHMs] (ppb)	N/A	80	36.6	2.24
SUBSTANCE (UNITS)	MCLG	AL	90TH PERCENTILE RESULT	SITES ABOVE AL
Copper (ppm)	1.3	1.3	0.15	0
Lead (ppb)	0	15	ND	0
Lead and copper samples were collected in 2017. Lead and copper monitoring takes place every 3 years in accordance with the Virginia Waterworks Regulations.				
SUBSTANCE (UNITS)	MCLG	MCL	QUARTERLY RUNNING ANNUAL AVERAGE RATIO	MINIMUM
Total Organic Carbon (removal ratio)	N/A	TT	1.5	1.4
The Quarterly Running Annual Average (QRAA) is the monthly ratio of actual Total Organic Carbon removal versus required Total Organic Carbon removal between source water and treated water. The QRAA must be greater than or equal to 1.0 to meet Virginia Department of Health regulatory requirements.				
SUBSTANCE (UNITS)	MCLG	MCL	ANNUAL AVERAGE TURBIDITY	HIGHEST SINGLE MEASUREMENT
Turbidity (NTU)	N/A	TT	0.047	0.24
Nephelometric Turbidity Units (NTU) must be less than or equal to 0.3 in at least 95% of the samples in any month and must never exceed 1.0.				

WEST SYSTEM (6153251)

MAXIMUM	VIOLATION	TYPICAL SOURCE
0.20	No	Herbicide runoff.
0.049	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
4.78	No	Decay of natural and man-made deposits.
0.7	No	Water additive that promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories.
1.68	No	Fertilizer runoff; leaching of septic tanks or sewage; erosion of natural deposits.
0.186	No	Decay of natural and man-made deposits.
0.10	No	Herbicide runoff.
0.088	No	Erosion of natural deposits.

MAXIMUM	VIOLATION	TYPICAL SOURCE
4.2	No	Water additive used to control bacteria and microbes.

MAXIMUM	VIOLATION	TYPICAL SOURCE
45.9	No	Byproduct of drinking water disinfection.
49.5	No	Byproduct of drinking water disinfection.

MAXIMUM	VIOLATION	TYPICAL SOURCE
N/A	No	Corrosion of household plumbing.
N/A	No	Corrosion of household plumbing.

MAXIMUM	VIOLATION	TYPICAL SOURCE
1.6	No	Naturally present in the environment.

Total Organic Carbon has no health effects. However, it provides a medium for the formation of disinfection byproducts such as trihalomethanes and haloacetic acids. Compliance with the treatment technique reduces the formation of disinfection byproducts.

LOWEST MONTHLY % SAMPLES MEETING THE TREATMENT TECHNIQUE TURBIDITY LIMIT	VIOLATION	TYPICAL SOURCE
100%	No	Soil runoff.

Microbiological Testing: No E. coli was detected in the water system during calendar year 2019.

UNREGULATED CONTAMINANT MONITORING RULE 4

Every five years, the EPA reviews and selects a list of unregulated contaminants for public water systems to monitor. This study benefits the environment and public health by providing valid data on the occurrence of these contaminants in drinking water. The EPA uses this data to develop regulatory decisions for emerging contaminants. This requirement is mandatory for all public water systems that serve more than 10,000 customers.

During 2019, the Service Authority participated in the Unregulated Contaminant Monitoring Rule 4 (UCMR4) for the East and West distribution systems. Staff collected samples from the entry points of each system as well as at locations identified by the Virginia Department of Health throughout the distribution systems.

UNREGULATED SUBSTANCES TABLE 2019: WEST SYSTEM (6153251)				
Substance (Units)	Sample Year	Average	Minimum	Maximum
Manganese (ppb)	2019	0.86	0.36	1.60
Haloacetic Acids (HAA5) (ppb)	2019	17.2	2.76	52.5
Haloacetic Acids (HAA6Br) (ppb)	2019	7.63	2.50	14.10
Haloacetic Acids (HAA9) (ppb)	2019	24.2	6.51	62.7

Action Level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements by the water supplier.

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 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 Residual Disinfectant Level Goal (MRDLG): 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.

Maximum Residual Disinfectant Level (MRDL): 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. Compliance with the MRDL is based on the highest Quarterly Running Annual Average.

N/A: Not applicable.

ND: Not detected at testing limit.

Nephelometric Turbidity Units (NTU): Measurement of the cloudiness of water.

Picocuries Per Liter (pCi/L): Measurement of radioactivity.

Parts Per Billion (ppb): One part substance per billion parts of water (or micrograms per liter).

Parts Per Million (ppm): One part substance per million parts of water (or milligrams per liter).

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

90th Percentile Result: Result from a set of lead and copper samples that is used to determine if the water system will be required to implement additional actions. Action is only required should the 90th Percentile sample be higher than the Action Level listed for either copper or lead.

YOUR WATER IS TREATED RIGHT

Before your drinking water reaches your tap, it goes through a six-step treatment process that ensures it is clean. In addition, PWCSA continually monitors the quality of the water provided to you.



COAGULATION

A chemical that causes particles to bind together is added to the water.



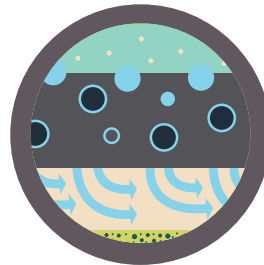
SECONDARY DISINFECTION

Chlorine is added to the filtered water to ensure it is fully disinfected.



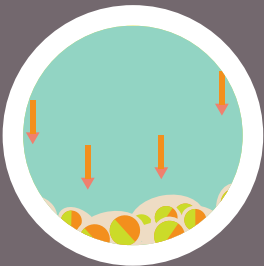
FLOCCULATION

As the particles combine, they become larger and become heavier.



FILTRATION

The water is filtered using granular activated carbon to remove any remaining particles.



SEDIMENTATION

The large, heavy particles settle to the bottom and are cleared away.



PRIMARY DISINFECTION

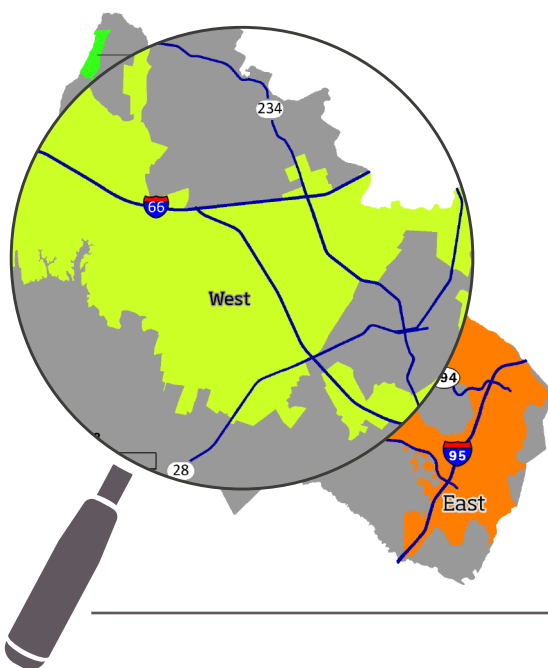
Ozone gas is added to the water to destroy bacteria, viruses and other microorganisms.

LEARN MORE ABOUT YOUR WATER

For more information about your drinking water, please contact PWCSA's Regulatory Affairs Office at (703) 331-4162 or by email at water_quality@pwcsa.org.

Regular monthly meetings of the Board of Directors are held on the second Thursday of each month at 7:30 p.m. in the Board Room of the Raymond Spittle Building, located at 4 County Complex Court, Woodbridge, Virginia 22192. For more information, please call (703) 335-7900.

Este informe contiene información muy importante sobre su agua potable. Para ver este reporte en español, visite el sitio web en www.pwcsa.org/water-quality/calidad-de-agua.



WEST WATER SYSTEM

2020 Water Quality Report



P.O. Box 2266
Woodbridge, VA 22195