2019 WATER QUALITY REPORT

West 6153251

A Message from the Director of Environmental Services and Water Reclamation

Dear Valued Customer,

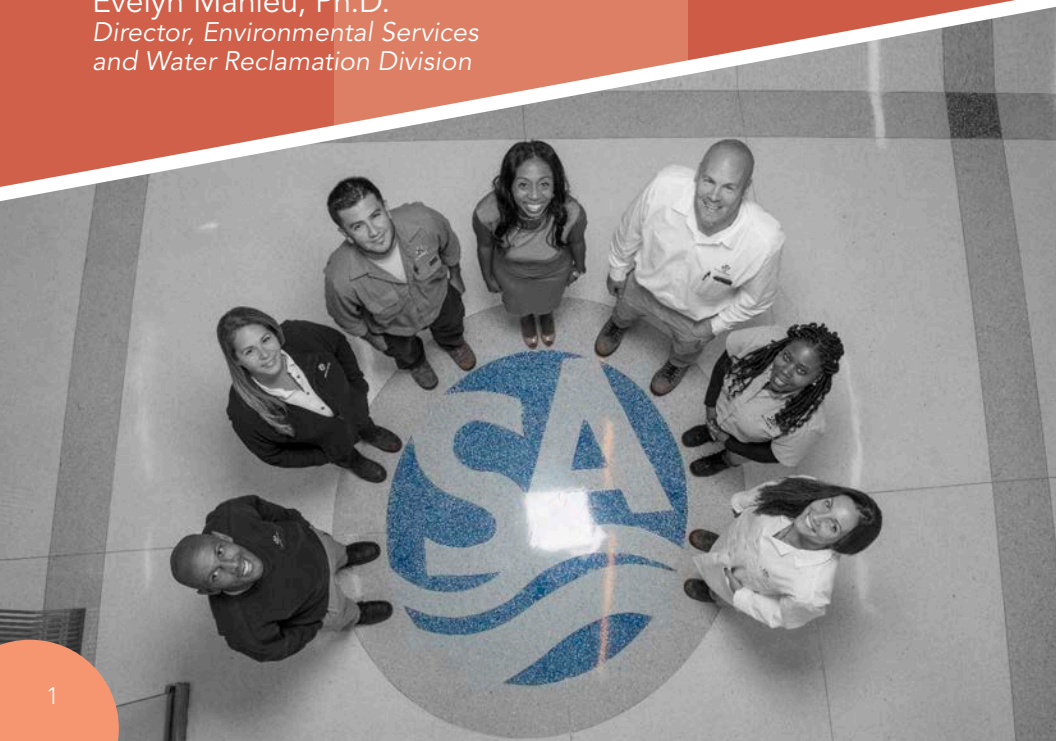
The Prince William County Service Authority (PWCSA) is pleased to present our annual Water Quality Report. The report provides the results of water quality testing performed during calendar year 2018 or the most recent regulatory period. This report is a requirement of the National Primary Drinking Water Regulations and the Virginia Waterworks Regulations. The quality of the water PWCSA provided to you met all federal and state water quality requirements.

We are committed to providing high quality water and reliable service to you and all our customers throughout Prince William County.

Sincerely,

Evelyn Mahieu

Evelyn Mahieu, Ph.D.
Director, Environmental Services and Water Reclamation Division



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 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 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 an inventory 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 Environmental Services and Water Reclamation Division (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 John DeRosa, Regulatory Affairs Officer, at (703) 335-7976 or at water_quality@pwcsa.org.

PWCSA also has 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 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 water 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 **1-800-426-4791**.

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 at **1-800-426-4791** or at **www.epa.gov/safewater/lead**.

SOURCE WATER

The sources of tap water include rivers, lakes, streams, ponds, reservoirs, s
the ground, it dissolves naturally occurring minerals and, in some cases, ra
of animal or human activity.

CONTAMINANTS THAT MAY BE PRE

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 (both tap water and bottled water) may contain small amounts of some contaminants. The presence of these contaminants does not necessarily indicate a health risk.

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

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.

More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline at **1-800-426-4791**.

SUBSTANCE (UNITS)	MCLG	MCL	AVERAGE	MINIMUM
Alpha Emitters (pCi/L)	0	15	2.02	ND
Barium (ppm)	2	2	0.029	0.02
Dalapon (ppb)	200	200	0.25	ND
Beta/photon emitters (pCi/L)	0	50	1.92	ND
Fluoride (ppm)	4	4	0.7	0.4
Nitrate [as Nitrogen] (ppm)	10	10	1.26	0.25
Radium 226 (pCi/L)	0	5	0.182	ND
SUBSTANCE (UNITS)	MRDLG	MRDL	HIGHEST QUARTERLY RUNNING ANNUAL AVERAGE	MINIMUM SINGLE VALUE
Chlorine (ppm)	4	4	2.7	0.6
SUBSTANCE (UNITS)	MCLG	MCL	HIGHEST QUARTERLY RUNNING ANNUAL AVERAGE	MINIMUM SINGLE VALUE
Haloacetic Acids [HAAs] (ppb)	N/A	60	35.9	5.1
Total Trihalomethanes [TTHMs] (ppb)	N/A	80	42.7	6.4
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.				
SUBSTANCE (UNITS)	MCLG	MCL	QUARTERLY RUNNING ANNUAL AVERAGE RATIO	MINIMUM
Total Organic Carbon (removal ratio)	N/A	TT (ratio)	1.3	1.0
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 these disinfection by-products.				
SUBSTANCE (UNITS)	MCLG	MCL	ANNUAL AVERAGE TURBIDITY	HIGHEST SINGLE MEASUREMENT
Turbidity (NTU)	N/A	TT (NTU)	0.054	0.25
Turbidity must be less than or equal to 0.3 NTU in at least 95% of the samples in any month and at no time can turbidity exceed 1 NTU.				

Microbiological Testing: PWCSA is pleased to report that the West system remained in compliance during the 2018 calendar year.

MAXIMUM	VIOLATION	TYPICAL SOURCE
3.01	No	Decay of natural and man-made deposits.
0.045	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
1.0	No	Runoff from herbicide used on rights of way.
3.82	No	Decay of natural and man-made deposits.
0.8	No	Water additive that promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories.
1.63	No	Fertilizer runoff; leaching of septic tanks or sewage; erosion of natural deposits.
0.282	No	Decay of natural and man-made deposits.
MAXIMUM SINGLE VALUE	VIOLATION	TYPICAL SOURCE
4.0	No	Water additive used to control bacteria and microbes.
MAXIMUM SINGLE VALUE	VIOLATION	TYPICAL SOURCE
54.5	No	Byproduct of drinking water disinfection.
64.2	No	Byproduct of drinking water disinfection.
MAXIMUM	VIOLATION	TYPICAL SOURCE
N/A	No	Corrosion of household plumbing.
N/A	No	Corrosion of household plumbing.
Lead and copper monitoring takes place every 3 years in accordance with Virginia Waterworks Regulations.		
MAXIMUM	VIOLATION	TYPICAL SOURCE
1.6	No	Naturally present in the environment.
Quarterly Running Annual Average (QRAA) is calculated by taking the monthly ratio of actual Total Organic Carbon removal versus required Total Organic Carbon removal. QRAA must be greater than or equal to 1.0 to be in compliance.		
LOWEST MONTHLY % SAMPLES MEETING THE TREATMENT TECHNIQUE TURBIDITY LIMIT	VIOLATION	TYPICAL SOURCE
100%	No	Soil runoff.

TABLE DEFINITIONS

- **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 Detection:** 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 water is delivered to you, it goes through a six-step treatment process that ensures it is clean.

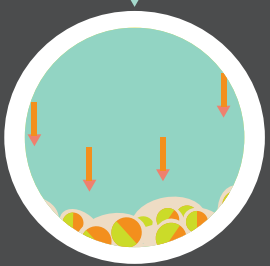
In addition, PWCSA continually monitors the water that is delivered to you to ensure that it is of the highest possible quality.

COAGULATION

A chemical is added to the water, causing small particles to adhere to one another, or coagulate.

FLOCCULATION

As the particles coagulate, they create larger particles called floc that become heavier and heavier.

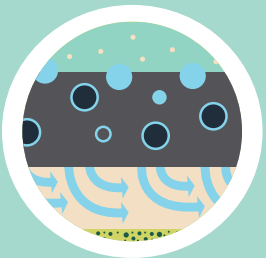


SEDIMENTATION

The heavy floc settles to the bottom and is cleared away.

OZONATION

Ozone (a gas) is added to destroy bacteria and other microorganisms and to improve taste.



FILTRATION

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

SECONDARY DISINFECTION

As a final step, chlorine is added to ensure a safe product is delivered to your home.

LEARN MORE ABOUT YOUR WATER

For more information about your drinking water, please contact John DeRosa, Regulatory Affairs Officer, at **(703) 335-7976** or at **water_quality@pwcsa.org**.

Regular monthly meetings of the PWCSA Board of Directors are held on the second Thursday of each month at 7:30 p.m. in the Board Room at PWCSA headquarters, 4 County Complex Court, Woodbridge, Virginia, 22192. Public hearings are advertised in local newspapers. 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:

www.pwcsa.org/water-quality/calidad-de-agua.

WEST WATER SYSTEM


Aquachek

2019 Water Quality Report

P.O. Box 2266 Woodbridge, VA
22195-2266 www.pwcsa.org

Service Authority
Exceptional Water Service