



Our quality is clear

ANNUAL WATER QUALITY REPORT
2019

TABLE OF CONTENTS

4

Executive Letters

6

Understanding
Your Water Quality

8

Finding Your Water
Quality

9

Information About
Source (Raw) Water

10

Reducing Exposure
To Lead

12

Understanding
Water Quality Test
Results

13

Key Terminology
& Abbreviations

14

Fairfax Water Legacy &
City Service Area Results

18

City of Falls
Church Results

22

Arlington Special
Service Area Results

26

2018 *Cryptosporidium*
Monitoring Statement

28

2018 Unregulated
Contaminant
Monitoring Rule Data

"We are, all of us, water beings on a water planet. Water is life. Without it, all living things die. Our dependence on water is absolute; our psyches know this and signal us in myriad ways of water's elemental importance and significance. That is why we love the water and remember experiences associated with it.

Of the earth's vast resources of water, only a small fraction is fresh and drinkable. A few people among the globe's billions have been charged with the task of ensuring everyone else has a reliable supply of safe water. Supplying potable water is an essential human activity, a great responsibility, and a vocation of distinction."

J.B. Mannion

1931 ~ 2009

Former Executive Director

American Water Works Association

This report contains very important information about your drinking water. Please translate it or speak with someone who understands it. If you are a landlord, please share a copy of this report with your tenants.

이 보고서에는 귀하가 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이것을 번역하거나 충분히 이해하시는 친구와 상의하십시오.

Bản báo cáo có ghi những chi tiết quan trọng về phẩm chất nước trong cộng đồng quý vị. Hãy nhờ người thông dịch, hoặc hỏi một người bạn biết rõ về vấn đề này.

El informe contiene información importante sobre la calidad del agua en su comunidad. Tradúzcalo o hable con alguien que lo entienda bien.

Letter from the Chairman

My Fellow Customers:

I am happy to report that Fairfax Water continues to provide you with water of exceptional quality at some of the lowest rates in the region.

I invite you to read further and view the data firsthand, but first I would like to talk a bit about the purpose of this publication. If you are a new customer, this may be the first time you've seen our Annual Water Quality Report. I want to take this opportunity to explain its importance.

This report compiles water quality data based on standards set by the Environmental Protection Agency (EPA) and the Virginia Department of Health (VDH). Fairfax Water's mutual interest with those organizations is to be transparent and communicate with you about the quality of your water. EPA's Consumer Confidence Report Rule requires that every drinking water utility make this report available to customers annually and that it be available for viewing online or on paper. If you have friends or family in neighboring counties and cities who have questions about their water quality, please encourage them to ask their water utility for the most recent report.

Knowledge is power, and this report is designed to give you the knowledge you need about the water you drink every day. You will learn about the quality of your water, the source of your drinking water, how we manage risks to our water supply, and the water treatment process.

Being both customer and Chairman of Fairfax Water's Board of Directors, I am proud of this report and the information it contains. I hope you are inspired to learn more about the water we proudly serve.



Philip W. Allin
Chairman
Fairfax Water Board of Directors



Letter from the General Manager

Dear Fairfax Water Customers:

It's time once again to report on the quality of your drinking water. As always, your water quality is excellent and we've surpassed the standards set for us by the Environmental Protection Agency (EPA) and the Virginia Department of Health (VDH). Delivering better-than-required water to our customers has been a goal of Fairfax Water since its founding. We've always reached this goal because of our team's commitment to its very important task.

Later in this report you will see data for the many parameters we are required to report to you based on the guidance of the EPA. You will find information about contaminants not normally referenced in every report. These contaminants are part of the Fourth Unregulated Contaminant Monitoring Rule (UCMR 4), which is an updated list of emerging contaminants that the EPA asks utilities to analyze and report once every five years. This is part of the Safe Drinking Water Act and is used by the EPA to determine if certain contaminants require regulation. Fairfax Water joins with many other water utilities to report results and the EPA uses those results in its regulatory process.

This is all a long way of saying that your drinking water is being monitored for currently unregulated contaminants as well as those that are currently regulated, such as lead and *E. coli*.

The bottom line is that the quality of your water is of top concern to Fairfax Water. We will use every available tool to make sure your water continues to exceed expectations. We are proud to share these results with you.




Charles M. Murray
General Manager
Fairfax Water



>> UNDERSTANDING YOUR WATER QUALITY

HOW IS MY WATER QUALITY?

Your water quality is excellent. As a Fairfax Water customer, you drink water that consistently surpasses all federal and state standards. Of the 180 compounds for which we tested, very few were found in our drinking water. Those we did find were in negligible amounts well below the EPA's maximum contaminant levels.

HOW IS THE WATER TESTED AND BY WHOM?

Fairfax Water's state-certified Water Quality Laboratory performs or manages the testing required by federal and state regulations. In addition to regulatory testing, many other analyses are performed to monitor the quality of Fairfax Water's raw water sources, water within the treatment process, and water within the distribution system. Water undergoing the treatment process is continuously monitored for pH, turbidity, coagulation efficiency, and disinfectant residuals, using technically advanced online monitoring systems. Chlorine, pH, and temperature testing is also performed at sample sites throughout the system using portable instrumentation. The results for much of the 2018 testing are included in the tables on pages 14 - 25 of this report.

For additional analytical reports, visit www.fairfaxwater.org or call 703-698-5600, TTY 711.

HOW IS OUR WATER TREATED?

Fairfax Water provides water treated at four treatment plants. The James J. Corbalis Jr. and the Frederick P. Griffith Jr. Treatment Plants are owned and operated by Fairfax Water. The Dalecarlia and McMillan Treatment Plants, part of the Washington Aqueduct, are owned and operated by the U.S. Army Corps of Engineers. All four locations use advanced technologies and practices in drinking water treatment, which is the process of cleaning raw water to make it safe for you to drink. When untreated water enters the treatment plant, coagulants are added to cause small particles to adhere to one another, become heavy, and settle in a sedimentation basin.

The water is then filtered through activated carbon and sand to remove remaining fine particles. It is disinfected with chlorine to kill harmful bacteria and viruses. A corrosion inhibitor is added to help prevent leaching of lead and copper that may be in household plumbing. Fluoride is added to protect teeth. Powdered activated carbon and potassium permanganate may also be added to the treatment process to remove taste or odor-causing compounds. In addition to these treatment steps, the Corbalis and Griffith plants use ozone to further reduce odors and organic material.

THE WATER TREATMENT PROCESS

Throughout this report, you will find many references to water in different stages of the treatment process.



Raw Water Source

Water in its natural state that feeds into our treatment plants



Process

Water at various points during the treatment process



Finished Water

Water leaving the treatment plant for distribution or storage



Distribution

Treated water piped from our facilities to your home or business

NOTE ABOUT MEETINGS OF THE FAIRFAX WATER BOARD OF DIRECTORS

Fairfax Water's Board of Directors typically meets the first and third Thursday of each month at 6:30 p.m. in the Boardroom of the Fairfax Water offices at 8570 Executive Park Avenue in Fairfax. Notices of public hearings and other opportunities for public participation are posted in the lobby and on the website at www.fairfaxwater.org. If you plan to attend a meeting or need more information, contact Fairfax Water at 703-289-6029, TTY 711, to confirm the date and time for the meeting.

>> FINDING YOUR WATER QUALITY

This water quality report provides information for all customers whose drinking water is provided by Fairfax Water. Our raw water comes from two sources and is treated at four treatment plants. You can use the map shown here to determine where your water comes from and what water quality data applies to your drinking water.

Note the color of the map in the area where you live. Use this color coding throughout the report to identify the information that relates to your drinking water. If you are still uncertain which service area is yours or if you have additional questions, visit www.fairfaxwater.org or call 703-698-5800, TTY 711.



Customers in this service area receive water from the Potomac River and Occoquan Reservoir that is treated at the James J. Corbalis Jr. or Frederick P. Griffith Jr. treatment plants, owned and operated by Fairfax Water. See report on page 14.

Customers in this service area receive water from the Potomac River that is treated at the Dalecarlia water treatment plant, part of the Washington Aqueduct system, owned and operated by the U.S. Army Corps of Engineers. See report on page 22.

Customers in this service area receive water from the Potomac River that is treated at the McMillan and Dalecarlia water treatment plants, part of the Washington Aqueduct system, owned and operated by the U.S. Army Corps of Engineers. See report on page 18.

***Areas in white are not covered in this report.**

This report covers metals, organics, and contaminants as required by the U.S. Environmental Protection Agency. Data for components not mentioned here may be available online. For information on additional measurements, please refer to the "additional data" links on each of the service area pages (14, 18 and 22).

>> INFORMATION ABOUT SOURCE (RAW) WATER

SOURCES OF DRINKING WATER

The sources of all drinking water, both tap water and bottled water, include rivers, lakes, streams, ponds, reservoirs, springs, and groundwater. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material. It can also 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, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
2. Inorganic contaminants, such as salts and metals, that can be naturally occurring or can 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 or residential uses and urban stormwater runoff.
4. Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and also come from gas stations, urban stormwater runoff, septic systems, and decaying plants.
5. Radioactive contaminants that can be naturally occurring or can be the result of oil and gas production or mining activities.

SOURCES OF DRINKING WATER

Fairfax Water draws raw water from two primary sources: the Potomac River and the Occoquan Reservoir, which is fed by the Occoquan River. The Corbalis Treatment Plant and the Dalecarlia and McMillan Treatment Plants treat water from the Potomac River. The Frederick P. Griffith Jr. Treatment Plant treats water from the Occoquan Reservoir. The four facilities that treat your water feed an interconnected distribution system.

SOURCE WATER ASSESSMENT AND PROTECTION

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 watersheds that supply public tap water.
- Provide an inventory of contaminants present in the watershed.
- Assess susceptibility to contamination in the watershed.

Source-water assessments for the watersheds are conducted by the Virginia Department of Health (VDH). The assessment consists of maps of the evaluated watershed area, an inventory of known land-use activities, and documentation of any known source-water contamination within the last five years. Based on the criteria developed by the VDH, the Potomac River and the Occoquan Reservoir were determined to be of high susceptibility to contamination. This determination is consistent with the state's finding for other surface waters, such as rivers, lakes, and streams, throughout Virginia. A secure version of the assessment report is available by visiting our website at www.fairfaxwater.org or by calling Fairfax Water at 703-698-5600, TTY 711.

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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at the following number: (800-426-4791, TTY 711).



>> REDUCING EXPOSURE TO LEAD

Fairfax Water's distribution system does not contain lead pipe, as we have made an extensive effort to identify and replace any lead service connections in the older areas of our system. Depending on when it was constructed, your home's plumbing may contain lead. The level of lead in water can increase when the water stands in contact with lead-based plumbing. Keep reading for important information about safe lead levels and how to reduce your exposure to lead.

FAIRFAX WATER'S SOURCES

The EPA has established an Action Level for lead in water of 15 parts per billion (ppb). When lead testing is performed as required by the EPA, 90 percent of the samples must contain less than 15 ppb. This is usually referred to as the 90th percentile results being less than 15 ppb.

The Action Level was not designed to measure health risks from water represented by individual samples. Rather, it is a statistical trigger value that, if exceeded, may require more treatment, public education, and possibly lead-service-line replacement where such lines exist. Fairfax Water does not have any lead service lines in its system.

Fairfax Water has been testing for lead in accordance with the EPA's Lead and Copper Rule (LCR) since 1992 and has consistently tested below the Action Level established in the LCR. In the most recent tests performed as required by the EPA, all Fairfax Water samples were well below the Action Level of 15 ppb. The next EPA-required monitoring will be conducted in 2021 for Arlington Special service area and 2020 for the remaining service areas.

WHERE DOES LEAD IN DRINKING WATER COME FROM?

The Potomac River and the Occoquan Reservoir - Fairfax Water's sources - do not contain lead. In 1986, lead was banned from use in pipe and solder in home construction. In older homes where lead is present in pipe and solder connections, it may dissolve into the water after the water sits for long periods. Some household plumbing components may contain a small amount of lead and can contribute to lead concentrations at the tap. Fairfax Water adds a phosphate-based corrosion inhibitor during the treatment process to slow this dissolution process. For more information on lead in your water, visit our website: www.fairfaxwater.org.

WHAT CAN I DO IN MY HOME TO REDUCE EXPOSURE TO LEAD IN MY WATER?

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. Fairfax Water is responsible for providing high-quality drinking water but cannot control the materials used in plumbing components in home construction.

If you are concerned about lead in your water, following these tips can help minimize the potential for lead exposure:

1. Use only fresh, cold water for cooking and making baby formula.
2. When your water has been sitting for several hours, flush your tap for 30 seconds to two minutes until the water becomes colder or until it reaches a steady temperature before using the water for drinking or cooking.
3. Do not boil water to remove lead. Boiling water will not reduce lead.
4. Some people choose to install a filter in their home. If you choose a water filter, follow these three rules:
 - Choose a filter designed for the specific filtration desired (chlorine, lead, *Cryptosporidium*, etc.).
 - Make sure the filter is approved by NSF International (www.nsf.org).
 - Maintain the filter as directed.
5. Test your water for lead. For information about lead-level testing, call the Fairfax Water Customer Service Department at 703-698-5800, TTY 711.
6. Regularly clean your faucet aerator. This removes particles from your household plumbing that may contain lead.
7. Consider buying low-lead fixtures. Look for fixtures with the lowest lead content. Visit www.nsf.org to learn more.



FOR MORE INFORMATION

In addition to the tips above, information about lead in drinking water, testing methods, and steps you can take to minimize exposure can be found at:

www.epa.gov/safewater/lead
or by calling the Safe Drinking Water Hotline at
800-426-4791, TTY 711.

Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	
57	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
89	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118

>> UNDERSTANDING THE WATER QUALITY TEST RESULTS

In general, drinking water standards are regulated by a maximum contaminant level (MCL) or a treatment technique (TT). For parameters with an MCL, the utility must sample at the required frequency and results must be below the MCL. Depending on the parameter, the MCL may apply to individual results, an average of all results in a calendar year, or an average of all results in a calendar year for a specific site.

For parameters with a TT, the utility must sample at the required frequency and is required to take action (such as a change in treatment) if specified conditions are not met. Specified conditions vary per regulation. For instance, the TT for turbidity requires action to be taken if the percentage of filtered water turbidity results less than 0.3 Nephelometric Turbidity Units (NTU) falls below 95%. If this were to occur, the utility must perform corrective action until the specified conditions are met.

In the water quality test results on pages 14 - 25 and elsewhere in this report, you may find terms and abbreviations with which you are not familiar. On the next page is a quick reference guide to help you better understand unfamiliar terms and abbreviations.

IMPORTANT INFORMATION FROM THE ENVIRONMENTAL PROTECTION AGENCY

Drinking Water and People with Weakened Immune Systems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer who are undergoing chemotherapy, those who have undergone organ transplants, those with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. If you are in this at-risk group, you should seek advice about drinking water from your health care provider. The Environmental Protection Agency (EPA) and Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection from *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791.

>> KEY TERMINOLOGY AND ABBREVIATIONS

AL or Action Level - The concentration of a contaminant that, if exceeded, requires a water system to carry out an additional treatment or other action.

LRAA or Locational Running Annual Average - An ongoing annual average calculation of data at one specific location; not based on individual result.

MCL or 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 or 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 or Maximum Residual Disinfectant Level - The highest level of a disinfectant allowed in drinking water.

MRDLG or Maximum Residual Disinfectant Level Goal - The level of a disinfectant in drinking water below which there is no known or expected risk to health.

N/A or Not Applicable - Does not apply to this subject or in this scenario.

ND or Non-detect - A level at which there is an inability to detect an analyte because it is indistinguishable from the background signal.

90th Percentile - Represents the highest value found out of 90 percent of the samples taken in a representative group. If the 90th percentile is greater than the action level, it will trigger a treatment or additional requirements that a water system must follow.

NTU or Nephelometric Turbidity Units - A measure of cloudiness or haziness of water.

pCi/L or Picocuries per liter - Radioactivity concentration unit.

ppb or parts per billion - One ppb corresponds to one penny in \$10,000,000.

ppm or parts per million - One ppm corresponds to one penny in \$10,000.

QRAA or Quarterly Running Annual Average - An ongoing annual average calculation of data from the most recent four quarters.

TT or Treatment Technique - A required process intended to reduce the level of a contaminant in drinking water.

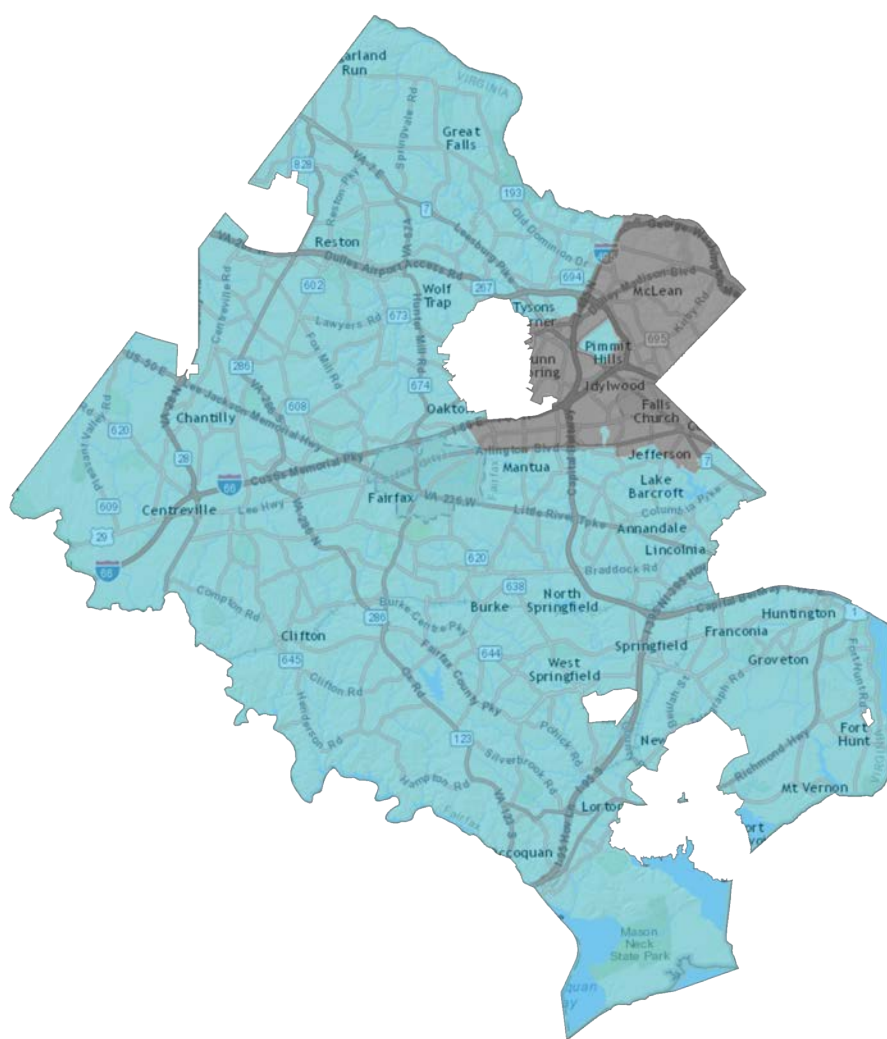
FAIRFAX WATER

2018 WATER QUALITY TABLES

FAIRFAX WATER CUSTOMERS IN THE LEGACY AND CITY OF FAIRFAX SERVICE AREA

The Water Quality Laboratory at Fairfax Water monitors for more than 180 different parameters, from alkalinity to zinc! Some of the monitoring is required for regulatory purposes, some to evaluate the treatment process and emerging technology, and even more for customer information. In 2018, some 50,000 data points were gathered from 15,000 samples of water for these 180 parameters. The tables on pages 14 - 17 show the results of the monitoring that is required by state and federal regulations. The monitoring was conducted for the Griffith and Corbalis water treatment plants between January 1 and December 31, 2018, unless otherwise noted.

For more water quality information, visit the Fairfax Water website at www.fairfaxwater.org/water-quality.



Customers in this service area receive water from the Potomac River and Occoquan Reservoir that is treated at the James J. Corbalis Jr. or Frederick P. Griffith Jr. treatment plants, owned and operated by Fairfax Water.

SERVICE AREA

SUMMARY OF FINISHED WATER CHARACTERISTICS

Components	Ideal Goal (EPA MCLG*)	Highest Level Allowed (EPA MCL*)	Range (Individual Results)	Violation	Common Sources in Drinking Water
Alpha Emitters (pCi/L) ¹	0	15	ND - 3.01	No	Decay of natural and man-made deposits
Barium (ppm)	2	2	ND - 0.045	No	Discharge of drilling wastes; discharge from metal refineries; erosion from natural deposits
Beta/photon particles (pCi/L) ^{1, 2}	0	50	ND - 3.82	No	Decay of natural and man-made deposits
Fluoride (ppm)	4	4	0.6 - 0.8	No	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate [as Nitrogen] (ppm)	10	10	0.57 - 1.87	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite [as Nitrogen] (ppm)	1	1	ND - 0.013	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Radium 226/228 (pCi/L) ¹	0	5	ND - 0.691	No	Decay of natural and man-made deposits

* Unless otherwise specified, MCLG and MCL apply to an individual result.

¹ As granted by the State, Fairfax Water is on reduced monitoring for this parameter based upon historical results. The results above for Alpha Emitters, Radium 226 are derived from the last monitoring period of 2014 for the Corbalis plant and 2013 for the Griffith plant. The results above for Beta/photon particles are derived from Griffith 2013 data and Corbalis 2017 data.

² The MCL for the Beta particles is written as 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for Beta particles.

Total Organic Carbon	Treatment Technique (TT) ³	Range (Monthly Ratio QRAA)	Violation	Common Sources in Drinking Water
	Monthly Ratio QRAA > 1	1.2 - 1.4	No	Naturally present in the environment

Total Organic Carbon (TOC) has no health effects, however it does provide a medium for the formation of disinfection by-products. These by-products include trihalomethanes and haloacetic acids.

³ Compliance is based upon a Quarterly Running Annual Average (QRAA) of the monthly ratios of actual Total Organic Carbon removal between the source water and the treated water in a calendar year (not based on an individual result).

FAIRFAX WATER

Turbidity	Highest Level Allowed (EPA MCL*)	Highest Individual Result for Year	Violation	Common Sources in Drinking Water
	1 NTU	0.27	No	Soil runoff
	Treatment Technique (TT)	Lowest Monthly % of Samples Meeting ≤0.3 NTU Limit	Violation	Common Sources in Drinking Water
	Turbidity of filtered water must be ≤0.3 NTU in 95% or more samples	100%	No	Soil runoff

Turbidity levels are measured during the treatment process after the water has been filtered, but before disinfection.

* Unless otherwise specified, MCL applies to an individual result.

<i>E. coli</i>	Ideal Goal (EPA MCLG)	Highest Level Allowed (EPA MCL) ⁴	# of Positive <i>E.coli</i> samples this year	Violation	Assessment Required ⁴	Common Sources in Drinking Water
	0	Repeat sample is <i>E.coli</i> positive <u>OR</u> Routine sample is <i>E.coli</i> positive followed by Repeat sample that is Total Coliform positive <u>OR</u> System fails to take all required repeat samples following <i>E.coli</i> positive routine sample <u>OR</u> System fails to analyze for <i>E.coli</i> when any repeat sample tested positive for Total Coliform	Routine = 0 Repeat = 0	No	No	Human and animal fecal waste

* Unless otherwise specified, MCLG and MCL apply to an individual result.

⁴ If an *E. coli* MCL violation occurs, an assessment to determine the cause would be performed and corrective action taken.

Metals	Action Level [§]	90th Percentile Result [§]	Number of Sites Above Action Level [§]	Violation	Common Sources in Drinking Water
Copper (ppm) ⁵	1.3	0.110	0	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) ⁵	15	0.63	0	No	Corrosion of household plumbing systems; erosion of natural deposits

§ Refer to definitions for full description of terms

⁵ As granted by the State, Fairfax Water is on reduced monitoring for these parameters based upon historical results. The results above are taken from the most recent monitoring period in 2017.

SERVICE AREA



Fairfax Water's Frederick P. Griffith Jr. Water Treatment Plant

Disinfection By-products	Ideal Goal (EPA MCLG*)	Highest Level Allowed (EPA MCL*) ⁶	Highest LRAA for all sites	Range (Individual Results)	Violation	Common Sources in Drinking Water
Total Trihalomethanes (ppb)	0	LRAA = 80	58.5	10.4 - 98.1	No	By-product of drinking water disinfection
Haloacetic Acids 5 (HAA5) (ppb)	0	LRAA - 60	35.8	ND - 60.5	No	By-product of drinking water disinfection

* Unless otherwise specified, MCLG and MCL apply to an individual result.

⁶ Compliance is based upon site-specific Locational Running Annual Averages (LRAAs) (not based upon an individual result).

Total Chlorine (ppm)	Ideal Goal (EPA MRDLG)	Highest Level Allowed (EPA MRDL) ⁷	Highest QRAA	Range (Individual Results)	Violation	Common Sources in Drinking Water
	4	QRAA = 4	2.8	1.0 - 5.0	No	Water additive used to control microbes

⁷ Compliance is based upon a Quarterly Running Annual Average (QRAA) of all the regulatory chlorine results in a calendar year (not based on an individual result).

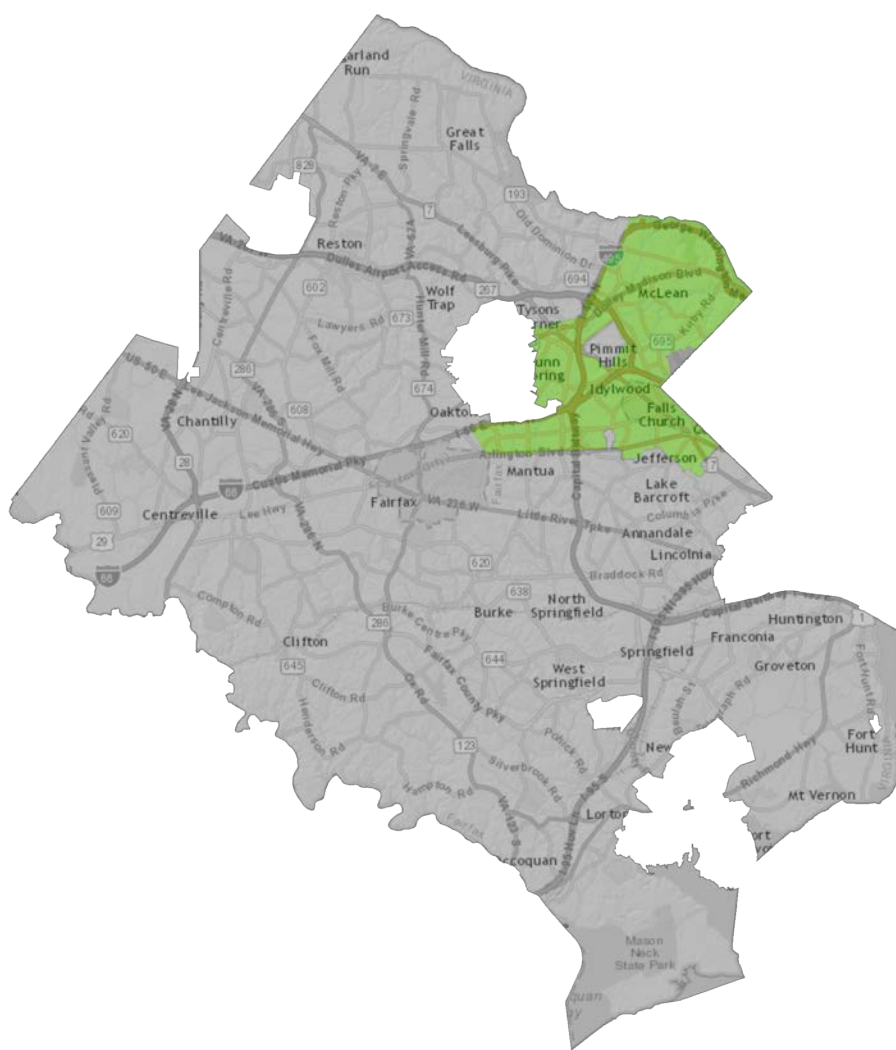
FALLS CHURCH

2018 WATER QUALITY TABLES

FAIRFAX WATER CUSTOMERS IN THE CITY OF FALLS CHURCH SERVICE AREAS

Even though you are a Fairfax Water customer, your water is supplied by the Washington Aqueduct Division of the U.S. Army Corps of Engineers. The tables on pages 18 - 21 show the results of monitoring performed by the Washington Aqueduct and Fairfax Water as required by state and federal regulations. Unless otherwise noted, the monitoring was conducted between January 1 and December 31, 2018.

For more information about your water quality, visit www.nab.usace.army.mil/Missions/Washington-Aqueduct/WaterQuality.



Customers in this service area receive water from the Potomac River that is treated at the McMillan and Dalecarlia water treatment plants, part of the Washington Aqueduct system, owned and operated by the U.S. Army Corps of Engineers.

SERVICE AREA

SUMMARY OF FINISHED WATER CHARACTERISTICS

Components	Ideal Goal (EPA MCLG*)	Highest Level Allowed (EPA MCL*)	Range (Individual Results)	Violation	Common Sources in Drinking Water
Arsenic (ppb)	0	10	ND - 0.4	No	Erosion of natural deposits; runoff from orchards, runoff from glass and electronics production wastes
Barium (ppm)	2	2	0.02 - 0.04	No	Discharge of drilling wastes; discharge from metal refineries; erosion from natural deposits
Beta/photon particles ^{1,2} (pCi/L)	0	50	ND - 3.0	No	Decay of natural and man-made deposits
Dalapon (ppb)	200	200	ND - 1.0	No	Runoff from herbicide used on rights of way
Radium 226/228 ¹ (pCi/L)	0	5	ND - 2.0	No	Decay of natural and man-made deposits
Fluoride (ppm)	4	4	0.4 - 0.9	No	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate [as Nitrogen] (ppm)	10	10	0.8 - 3.0	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite [as Nitrogen] (ppm)	1	1	ND - 0.01	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

*Unless otherwise specified, MCLG and MCL apply to an individual result.

¹ As granted by the regulatory agency, Washington Aqueduct is on reduced monitoring for this parameter based upon historical results. The results above are taken from the last monitoring period in 2017.

² The MCL for Beta and photon emitters is 4 mrem/year and EPA considers 50 pCi/L to be the level of concern for beta/photon emitters. These detects for beta/photon emitters were below the minimum detection limits prescribed in the Consumer Confidence Rule as stated in 40 CFR 141.151 (d) and may not be required for CCR reporting.

Total Organic Carbon	Treatment Technique (TT) ³	Range (QRAA of Monthly Ratio)	Violation	Common Sources in Drinking Water
	Monthly Ratio QRAA >1	1.3 - 1.5	No	Naturally present in the environment

Total Organic Carbon (TOC) has no health effects; however, it provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes and haloacetic acids.

³ Compliance is based upon a Quarterly Running Annual Average (QRAA) of the monthly ratios of actual Total Organic Carbon removal between the source water and the treated water in a calendar year (not based on an individual result). The QRAA ratio must be ≥ 1 .

FALLS CHURCH

Turbidity	Highest Level Allowed (EPA MCL*)	Highest Individual Result for Year	Violation	Common Sources in Drinking Water
	1 NTU	0.10	No	Soil runoff
	Treatment Technique (TT)	Lowest Monthly % of Samples Meeting ≤0.3 NTU Limit	Violation	Common Sources in Drinking Water
	Turbidity of filtered water must be ≤0.3 NTU in 95% or more samples	100%	No	Soil runoff

* Unless otherwise specified, MCL applies to an individual result.

Turbidity levels are measured during the treatment process after the water has been filtered, but before disinfection.

<i>E. coli</i>	Ideal Goal (EPA MCLG)	Highest Level Allowed (EPA MCL*)	# of Positive <i>E.coli</i> samples this year	Violation	Assessment Required ⁴	Common Sources in Drinking Water
	0	Repeat sample is <i>E. coli</i> positive <u>OR</u> Routine sample is <i>E. coli</i> positive followed by Repeat sample that is Total Coliform positive <u>OR</u> System fails to take all required repeat samples following <i>E. coli</i> positive routine sample <u>OR</u> System fails to analyze for <i>E. coli</i> when any repeat sample tested positive for Total Coliform	Routine = 0 Repeat = 0	No	No	Human and animal fecal waste

* Unless otherwise specified, MCLG and MCL apply to an individual result.

⁴ If an *E. coli* MCL violation occurs, an assessment to determine the cause would be performed and corrective action taken.

Metals	Action Level [§]	90th Percentile Result [§]	Number of Sites Above Action Level [§]	Violation	Common Sources in Drinking Water
Copper (ppm) ⁵	1.3	0.110	0	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) ⁵	15	0.63	0	No	Corrosion of household plumbing systems; erosion of natural deposits

§ Refer to definitions for full description of terms

⁵ As granted by the State, Fairfax Water is on reduced monitoring for these parameters based upon historical results. The results above are taken from the most recent monitoring period in 2017.

SERVICE AREA



Washington Aqueduct's Dalecarlia Water Treatment Plant

Disinfection By-products	Ideal Goal (EPA MCLG [*])	Highest Level Allowed (EPA MCL [*]) ₆	Highest LRAA for all sites	Range (Individual Results)	Violation	Common Sources in Drinking Water
Total Trihalomethanes (ppb)	0	LRAA = 80	58.5	10.4 - 98.1	No	By-product of drinking water disinfection
Haloacetic Acids 5 (HAA5) (ppb)	0	LRAA = 60	35.8	ND - 60.5	No	By-product of drinking water disinfection

^{*} Unless otherwise specified, MCLG and MCL apply to an individual result.

⁶ Compliance is based upon site-specific Locational Running Annual Averages (LRAAs) (not based upon an individual result).

	Ideal Goal (EPA MRDLG)	Highest Level Allowed (EPA MRDL) ⁷	Highest QRAA	Range (Individual Results)	Violation	Common Sources in Drinking Water
Total Chlorine (ppm)	4	QRAA = 4	2.8	1.0 - 5.0	No	Water additive used to control microbes

⁷ Compliance is based upon a Quarterly Running Annual Average (QRAA) of all the regulatory chlorine results in a calendar year (not based on an individual result).

ARLINGTON

2018 WATER QUALITY TABLES

FAIRFAX WATER CUSTOMERS IN THE ARLINGTON SPECIAL SERVICE AREA

Even though you are a Fairfax Water customer, your water is supplied by the Washington Aqueduct Division of the U.S. Army Corps of Engineers. The tables on pages 22-25 show the results of monitoring performed by the Washington Aqueduct and Fairfax Water as required by state and federal regulations. Unless otherwise noted, the monitoring was conducted between January 1 and December 31, 2018.

For more information about your water quality, visit www.nab.usace.army.mil/Missions/Washington-Aqueduct/WaterQuality.

SUMMARY OF FINISHED WATER CHARACTERISTICS

Components	Ideal Goal (EPA MCLG*)	Highest Level Allowed (EPA MCL*)	Range (Individual Results)	Violation	Common Sources in Drinking Water
Arsenic (ppb)	0	10	ND - 0.4	No	Erosion of natural deposits; runoff from orchards, runoff from glass and electronics production wastes
Barium (ppm)	2	2	0.02 - 0.04	No	Discharge of drilling wastes; discharge from metal refineries; erosion from natural deposits
Beta/photon particles ^{1,2} pCi/L	0	50	ND - 3.0	No	Decay of natural and man-made deposits
Dalapon (ppb)	200	200	ND - 1.0	No	Runoff from herbicide used on rights of way
Radium 226/228 ¹ pCi/L	0	5	ND - 2.0	No	Decay of natural and man-made deposits
Fluoride (ppm)	4	4	0.4 - 0.8	No	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate [as Nitrogen] (ppm)	10	10	0.8 - 3.0	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite [as Nitrogen] (ppm)	1	1	ND - 0.01	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

*Unless otherwise specified, MCLG and MCL apply to an individual result.

¹ As granted by the regulatory agency, Washington Aqueduct is on reduced monitoring for this parameter based upon historical results. The results above are taken from the last monitoring period in 2017.

² The MCL for beta and photon emitters is 4 mrem/year and EPA considers 50 pCi/L to be the level of concern for beta/photon emitters. These detects for beta/photon emitters were below the minimum detection limits prescribed in the Consumer Confidence Rule as stated in 40 CFR 141.151 (d) and may not be required for CCR reporting.

SERVICE AREA



Customers in this service area receive water from the Potomac River that is treated at the Dalecarlia water treatment plant, part of the Washington Aqueduct system, owned and operated by the U.S. Army Corps of Engineers.

Total Organic Carbon	Treatment Technique (TT) ³	Range (QRAA of Monthly Ratio)	Violation	Common Sources in Drinking Water
	Monthly Ratio QRAA >1	1.3 - 1.4	No	Naturally present in the environment

Total Organic Carbon (TOC) has no health effects; however, it provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes and haloacetic acids.

³ Compliance is based upon a Quarterly Running Annual Average (QRAA) of the monthly ratios of actual Total Organic Carbon removal between the source water and the treated water in a calendar year (not based on an individual result). The QRAA ratio must be ≥ 1 .

Turbidity	Highest Level Allowed (EPA MCL*)	Highest Individual Result for Year	Violation	Common Sources in Drinking Water
	1 NTU	0.10	No	Soil runoff
	Treatment Technique (TT)	Lowest Monthly % of Samples Meeting ≤ 0.3 NTU Limit	Violation	Common Sources in Drinking Water
	Turbidity of filtered water must be ≤ 0.3 NTU in 95% or more samples	100%	No	Soil runoff

* Unless otherwise specified, MCL applies to an individual result.

Turbidity levels are measured during the treatment process after the water has been filtered, but before disinfection.

ARLINGTON

Metals	Action Level [§]	90th Percentile Result [§]	Number of Sites Above Action Level [§]	Violation	Common Sources in Drinking Water
Copper (ppm) ⁴	1.3	0.021	0	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) ⁴	15	0.27	0	No	Corrosion of household plumbing systems; erosion of natural deposits

§ Refer to definitions for full description of terms

Total Coliforms ⁴	Assessment Trigger ⁵	Number of Assessments Required	Common Source in Drinking Water
	Level 1 ⁵		Naturally present in the environment
	2 or more Total Coliform positive (TC+) samples in the same month	1	
	Level 2 ⁵		
	A system has a second Level 1 Assessment within a rolling 12-month period	None	

⁴ Total Coliforms do not have an MCL; however, systems are required to routinely monitor for total coliforms and perform assessments when specific triggers occur.

⁵ A Level 1 Assessment is a study of the waterworks to identify potential problems and determine, if possible, why total coliform bacteria have been found in the waterworks. A Level 2 Assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in the water system on multiple occasions.

During the past year, we were required to conduct one Level 1 assessment due to the positive total coliform results. A summary of this assessment is in the table below.

Level 1 Assessment
Health Effects – Presence of Coliforms <p>Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found.</p>
Activity associated with a Level 1 Assessment <p>During the past year, we were required to conduct one Level 1 Assessment. One Level 1 Assessment was completed. In addition, we were required to take five corrective actions and we completed five of these actions.</p>

SERVICE AREA

	Ideal Goal (EPA MCLG)	Highest Level Allowed (EPA MCL)*	# of Positive <i>E.coli</i> samples this year	Violation	Assessment Required ⁶	Common Sources in Drinking Water
<i>E. coli</i>	0	Repeat sample is <i>E. coli</i> positive OR Routine sample is <i>E. coli</i> positive followed by Repeat sample that is Total Coliform positive OR System fails to take all required repeat samples following <i>E. coli</i> positive routine sample OR System fails to analyze for <i>E. coli</i> when any repeat sample tested positive for Total Coliform	Routine = 0 Repeat = 0	No	No	Human and animal fecal waste

* Unless otherwise specified, MCLG and MCL apply to an individual result.

⁶ If an *E. coli* MCL violation occurs, an assessment to determine the cause would be performed and corrective action taken.

Disinfection By-products	Ideal Goal (EPA MCLG *)	Highest Level Allowed (EPA MCL *) ⁷	Highest LRAA for all sites	Range (Individual Results)	Violation	Common Sources in Drinking Water
Total Trihalomethanes (ppb)	0	LRAA = 80	41.2	30.2 - 54.0	No	By-product of drinking water disinfection
Haloacetic Acids 7 (HAA5) (ppb)	0	LRAA = 60	36.6	25.1 - 53.2	No	By-product of drinking water disinfection

* Unless otherwise specified, MCLG and MCL apply to an individual result.

⁷ Compliance is based upon site-specific Locational Running Annual Averages (LRAAs) (not based upon an individual result).

	Ideal Goal (EPA MRDLG)	Highest Level Allowed (EPA MRDL) ⁸	Highest QRAA	Range (Individual Results)	Violation	Common Sources in Drinking Water
Total Chlorine (ppm)	4	QRAA = 4	2.7	1.3 - 3.3	No	Water additive used to control microbes

⁸ Compliance is based upon a Quarterly Running Annual Average (QRAA) of all the regulatory chlorine results in a calendar year (not based on an individual result).

>> 2018 CRYPTOSPORIDIUM MONITORING STATEMENT

Cryptosporidium is a microbial pathogen sometimes found in surface water throughout the United States. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. Fairfax Water consistently maintains its filtration process in accordance with regulatory guidelines to maximize removal efficiency. Our monitoring indicates the occasional presence of these organisms in the source water. Current test methods cannot determine whether the organisms are dead or if they are capable of causing disease.

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

Cryptosporidium must be ingested in order to cause disease. It 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.



Under the Round 2 of the EPA Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR Round 2), utilities were required to monitor surface water sources for a period of 24 months. The EPA created this rule to provide for increased protection against microbial pathogens, such as *Cryptosporidium*, in public water systems that use surface water sources. Based upon the results obtained during the LT2ESWTR monitoring period, utilities would be evaluated to determine if the current treatment processes were sufficient to provide removal of microbial pathogens or if additional treatment was necessary.

LEGACY AND CITY OF FAIRFAX SERVICE AREAS

Fairfax Water completed monitoring of the Potomac River and Occoquan Reservoir for compliance with the LT2ESWTR Round 2 in 2017. Results for Fairfax Water *Cryptosporidium* monitoring during the LT2ESWTR Round 2 are summarized below:

Source (before treatment)	Mean <i>Cryptosporidium</i> concentration (oocysts/Liter) ¹	Additional Treatment Measures Required?*
Potomac River	0.000	No
Occoquan Reservoir	0.007	No

¹ Data from the LT2ESWTR Round 2 monitoring for the period of 2015-2017

*Based upon final bin assignment under the EPA LT2ESWTR Round 2 guidelines

THE CITY OF FALLS CHURCH AND ARLINGTON SPECIAL SERVICE AREAS

In 2017, the Washington Aqueduct completed monitoring of the Potomac River for compliance with the LT2ESWTR Round 2. Monitoring results indicated that no additional treatment measures were required.

After the LT2ESWTR Round 2 monitoring period ended, the Washington Aqueduct continued to monitor the Potomac River for *Cryptosporidium* on a monthly basis. In 2018, *Cryptosporidium* oocysts were detected in samples collected in February, March, April, June, and November. There are no regulatory limits for *Cryptosporidium*; however, results in 2018 were at levels indicating no need for additional treatment measures (based upon LT2ESWTR Round 2 criteria). Results for Washington Aqueduct *Cryptosporidium* monitoring in 2018 are summarized below:

Source (before treatment)	<i>Cryptosporidium</i> Concentration Range (oocysts/Liter)
Potomac River (Little Falls & Great Falls)	0.000 - 0.35

>> 2018 UNREGULATED CONTAMINANT MONITORING RULE (UCMR 4) DATA



WHAT IS THE UCMR?

The 1996 amendments to the Safe Drinking Water Act (SDWA) require that, once every five years, the U.S. Environmental Protection Agency (EPA) issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems. The Unregulated Contaminant Monitoring Rule (UCMR) provides EPA and other interested parties with scientifically valid data on the occurrence of contaminants in drinking water. This national survey is one of the primary sources of information on occurrence and levels of exposure used by the EPA to develop regulatory decisions for contaminants in the public drinking water supply. Each round of the UCMR is numbered sequentially with the current round being the fourth.

“Revisions to the Unregulated Contaminant Monitoring Rule (UCMR 4) for Public Water Systems and Announcement of Public Meeting” was published by the Federal Register on December 20, 2016 (81 FR 92666). UCMR 4 monitoring will occur from 2018-2020 and 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 by-products groups, three alcohols, and three semivolatile organic chemicals).

HOW DOES THE UCMR DATA BENEFIT US?

The UCMR program provides the EPA and other interested parties with nationally representative data on the occurrence of particular contaminants in drinking water, the number of people potentially being exposed, and an estimate of the levels of that exposure. In accordance with SDWA, EPA will consider the occurrence data from UCMR 4 and other sources, along with the peer-reviewed health effects assessments, to support a regulatory determination on whether to initiate the process to develop a national primary drinking water regulation.

For more information on UCMR 4, visit EPA’s UCMR web page (<https://www.epa.gov/dwucmr>) or call the Safe Drinking Water Hotline at 1-800-426-4791.

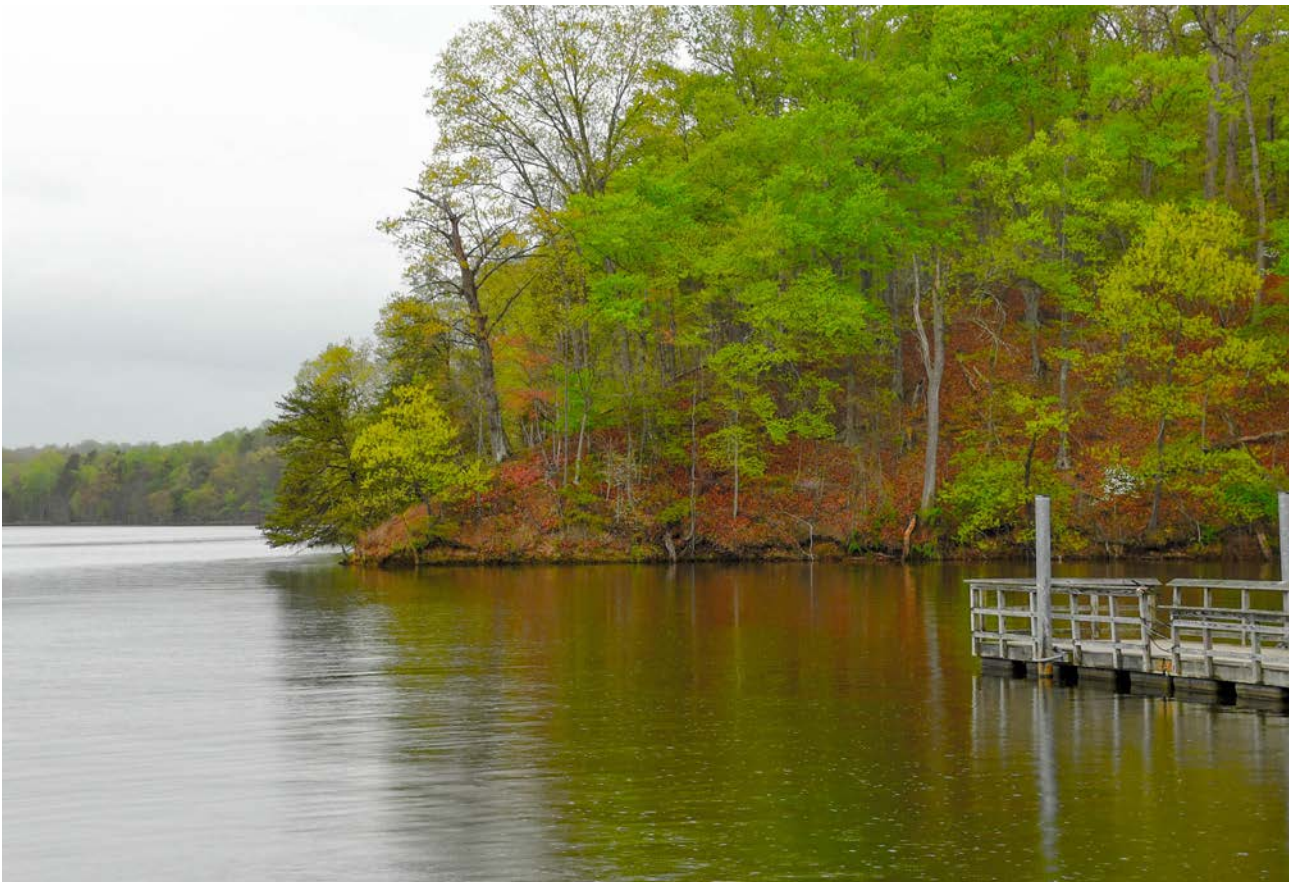
UNREGULATED COMPONENTS DETECTED IN 2018 UCMR 4 MONITORING

Components (ug/L)	Average	Minimum	Maximum	Use or Environmental Source
Haloacetic Acids 5 (HAA5) ¹	19.66	1.10	63.90	By-product of drinking water disinfection
Haloacetic Acids 6 Brominated Group (HAA6Br) ²	7.95	ND	14.61	By-product of drinking water disinfection
Haloacetic Acids 9 Group (HAA9) ³	26.97	1.40	72.75	By-product of drinking water disinfection

¹ HAA5 includes: dibromoacetic acid, dichloroacetic acid, monobromoacetic acid, monochloroacetic acid, trichloroacetic acid

² HAA6Br includes: bromochloroacetic acid, bromodichloroacetic acid, dibromoacetic acid, chlorodibromoacetic acid, monobromoacetic acid, tribromoacetic acid

³ HAA9 includes: bromochloroacetic acid, bromodichloroacetic acid, chlorodibromoacetic acid, dibromoacetic acid, dichloroacetic acid, monobromoacetic acid, monochloroacetic acid, tribromoacetic acid, trichloroacetic acid



Fountainhead Park at Fairfax Station, Virginia.



Will Not:

- * **Contact you asking for account or personal information**
- * **Offer discounts or rebates**
- * **Collect payment fees or payment at your home or residence**
- * **Refuse to show their credentials or photo ID**

Beware of Fraud: Scammers Target Customers

Here are some tips to help spot scammers pretending to be our employees:

If you receive a call offering discounts, requesting account information, or offering to pay your bill, it is a scam. Fairfax Water does not call to ask for your account information, nor do we offer discounts for service.

Fairfax Water employees have photo identification with them at all times when they are on the job. Our vehicles and field-staff clothing bear our logo. During the summer months there may be Fairfax Water summer interns in your neighborhood who do not wear uniforms; however, each one will have a Fairfax Water photo identification badge displayed prominently.

If someone comes to your door and identifies themselves as a Fairfax Water employee, please ask for their identification or call 703-698-5800, TTY 711, to verify before letting them into your home.

Fairfax Water employees do not receive or accept any form of payment during service calls and we do not collect water-service fees door-to-door.

Most water meters can be found outside a customer's home which means Fairfax Water employees typically DO NOT require access to a customer's home to read a meter.

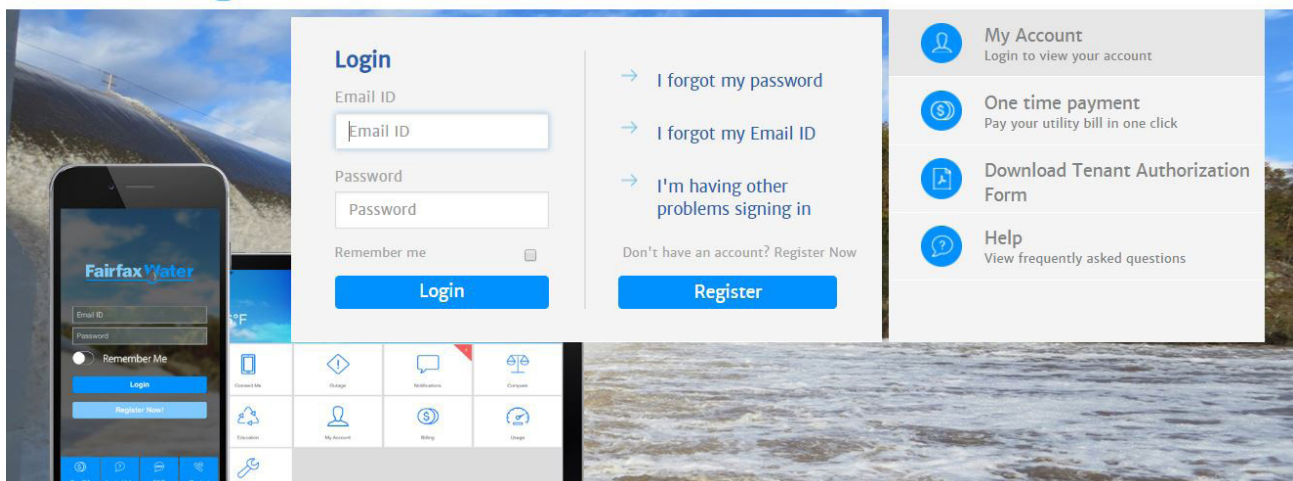
Pay your bill from home with our Online Customer Portal!

The #1 customer-requested feature is now available



Fairfax Water

Contact us: (703) 698-5800



ADDITIONAL RESOURCES

Fairfax Water Services

www.fairfaxwater.org

Questions about water service:

703-698-5800

After Hours/Emergencies:

703-698-5613

To report a water main break:

www.fwnotifications.org/public

watermainbreak@fairfaxwater.org

703-698-5613

Questions about billing:

703-698-5800

All other Fairfax Water departments:

703-698-5600

If you have comments or suggestions about this report, please contact us at:

pr@fairfaxwater.org

703-698-5600

Sewer Services

Fairfax County	City of Falls Church	City of Fairfax
Department of Public Works	Department of Public Works	Department of Public Works
703-324-5033	703-248-5350 TTY 711	703-385-7810
www.fairfaxcounty.gov/ publicworks	www.fallschurchva.gov/155/ Public-Works	www.fairfaxva.gov/ government/public-works

Dig with C.A.R.E.

Call before you dig! 1-800-552-7001 or 811

<http://va811.com>