

# WATER QUALITY REPORT

For Calendar Year 2018



Town of Herndon  
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# 2018 Town of Herndon Water Quality Report

## ABOUT THIS REPORT

The Town of Herndon is pleased to present the 2018 Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Our goal is to provide the Town of Herndon with a safe and dependable supply of drinking water, and to inform concerned citizens of the efforts taken to protect the water supply. The quality of the drinking water must meet strict state and federal requirements administered by the Virginia Department of Health (VDH). If you have questions about this report, desire additional information about any aspect of your drinking water or the water system, or desire to know how to participate in decisions that may affect the quality of your drinking water, please contact Mike Farr, Utility Manager, at the Department of Public Works at 703-435-6800, ext.2153.

Si Usted tiene preguntas acerca de este reporte o si desea informacion adicional acerca de cualquier aspecto del agua para beber o desea saber como participar en decisiones que puedan afectar la calidad del agua que usted bebe; por favor contacte a Mike Farr del Departamento de Obras Publicas al(703) 435-6800,ext.2153.

Este informe contiene informacion muy importante sobre la calidad de su agua beber. Traduscalo o hable con alguien que lo entienda bien.

## OPPORTUNITIES FOR PUBLIC PARTICIPATION

Ordinances and resolutions pertaining to water quality and distribution are advertised locally prior to Town Council hearings. Town Council work sessions and regular sessions are held twice a month on Tuesday nights except for the months of December, June, July, and August. In each of these months Town Council meets for only one work session and one regular session. Please refer to the town calendar regarding dates and times of these meetings.

## HERNDON'S SOURCES OF DRINKING WATER

The Town of Herndon purchases finished water from Fairfax Water. Fairfax Water draws surface water from two primary sources: the Potomac River and the Occoquan Reservoir, which is fed by the Occoquan River. Treatment facilities are located at opposite ends of Fairfax County and feed an interconnected distribution system. The James J. Corbalis, Jr. Treatment Plant, located in the northern part of Fairfax County, draws water from the Potomac River. The Frederick P. Griffith Jr. Treatment Plant, which draws water from the Occoquan Reservoir, is located on the southern border of Fairfax County. Even though Fairfax Water is an interconnected distribution system, because of the northern location of the Town of Herndon within Fairfax County, the Town of Herndon received water primarily from the James J. Corbalis treatment plant during 2018.

## SOURCE WATER ASSESSMENT

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.

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 state, 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. The assessment report is available by contacting Fairfax Water at 703-698-5600, or by visiting Fairfax Water's website at [www.fairfaxwater.org/water/swap.htm](http://www.fairfaxwater.org/water/swap.htm).



## STATEMENT ON CRYPTOSPORIDIUM MONITORING

*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 do not allow us to 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 can 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 their doctor regarding appropriate precautions to take 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.

Fairfax Water has completed monitoring the Potomac River and Occoquan Reservoir for compliance with Round 2 of the EPA Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR Round 2). 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. Fairfax Water's LT2ESWTR Round 2 monitoring program 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.

Under the LT2ESWTR Round 2, the average *Cryptosporidium* concentration determines whether additional treatment measures are needed. A *Cryptosporidium* concentration of 0.075 oocysts/Liter triggers additional water treatment measures. Fairfax Water's raw water *Cryptosporidium* concentrations were below this threshold. Results for LT2ESWTR Round 2 monitoring of the Potomac River for the period of 2015-2017 are as follows:

Source (before treatment)	Mean <i>Cryptosporidium</i> concentration (oocysts/Liter)	Final Bin Assignment under LT2ESWTR Round 2
Potomac River	0.000	Bin 1 (no additional treatment required)

## WHY ARE THERE CONTAMINANTS IN MY DRINKING WATER?

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 Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791). 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 and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity: microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; 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; 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 can also come from gas stations, urban storm water runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

## DO I NEED TO TAKE SPECIAL PRECAUTIONS?

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

## WATER QUALITY DATA TABLES

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The tables below list all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in these tables are from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In these tables you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the tables.

### Microbiological Contaminants

Contaminants	MCLG	MCL	No. of Samples Indicating Presence of <u>Bacteria</u>	Violation	Year Sampled	Typical Source
E. coli	0	A routine sample and a repeat sample are total coliform positive and one is also E. coli positive	0	No	2018	Human and animal fecal waste

### Turbidity

Contaminants	MCLG	MCL	Your Water	Highest Single Measurement	Violation	Sample Date	Typical Source
Turbidity (NTU)	NA	TT	0.04	0.25	No	2018	Soil runoff

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

NTU = Nephelometric Turbidity Unit      TT= Treatment Technique

## Disinfectants & Disinfection By-Products

Contaminants	MCLG	MCL	Your Water <sup>1</sup>	Range		Violation	Sample Date	Typical Source
				Low	High			
Chlorine (as Cl <sub>2</sub> ) (ppm)	4	4	1.84	1.60	2.30	No	2018	Water additive used to control microbes
Haloacetic Acids (HAA5) (ppb)	NA	60	17.0	4.7	40.3	No	2018	By-product of drinking water chlorination
TTHMs [Total Trihalomethanes] (ppb)	NA	80	20	7.8	46.8	No	2018	By-product of drinking water disinfection

<sup>1</sup> Amounts listed for Disinfectants and Disinfection By-Products are running annual averages

## TESTING OF PROCESS WATER

Total Organic Carbon	MCLG	MCL	Your Water	Range		Violation	Sample Date	Typical Source
				Low	High			
Total Organic Carbon (% Removal)	NA	TT	1.2	1.0	1.6	No	2018	Naturally present in the environment

Total Organic Carbon has no health effects; however, it provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes and haloacetic acids. Compliance with the treatment technique (TT) reduces the formation of these disinfection by-products. Quarterly Running Annual Average (QRAA) refers to the monthly ratio of actual Total Organic Carbon removal to the required Total Organic Carbon removal between source and treated waters. QRAA must be greater than 1.0 to be in compliance.

## Inorganic Contaminants

Contaminants	MCLG	MCL	Your Water <sup>1</sup>	Range		Violation	Sample Date	Typical Source
				Low	High			
Alpha emitters (pCi/L)	0	15	2.02	ND	3.01	No	2014	Decay of natural and man-made deposits
Barium (ppm)	2	2	0.038	0.031	0.045	No	2018	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta/photon emitters (pCi/L)	0	50	1.92	ND	3.82	No	2017	Decay of natural and man-made deposits. The EPA considers 50 pCi/L to be the level of concern for Beta particles.
Fluoride (ppm)	4	4	0.7	0.6	0.8	No	2018	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate [measured as Nitrogen] (ppm)	10	10	1.26	0.70	1.63	No	2018	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Radium 226 (pCi/L)	0	5	0.182	ND	0.282	No	2014	Erosion of natural deposits

ND = Non detect, below detection level

ppm = parts per million

pCi/l = picocuries per liter

<sup>1</sup> Amounts listed for inorganic contaminants are running annual averages

## ADDITIONAL INFORMATION FOR LEAD

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. Town of Herndon is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800-426-4791) or at <http://www.epa.gov/safewater/lead>.

Lead and Copper							
Contaminants	MCLG	Action Level	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source
Copper (ppm)	1.3	1.3	0.091	2017	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	0	15	0.51	2017	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

## UNREGULATED CONTAMINANT MONITORING RULE

The 1996 Safe Drinking Water Act (SDWA) amendments require the EPA once every five years to issue a new Unregulated Contaminant Monitoring Rule (UCMR) list of no more than 30 unregulated contaminants to be monitored by public water systems. This is the first step in the EPA’s process to determine what new contaminants may need to be regulated.

Through the UCMR, public water systems provide the EPA with scientifically valid data about the presence of these contaminants in drinking water. This data allows the EPA to determine if the population being exposed, quantify the level of exposure, and assess the impact of these unregulated contaminants on the environment and public health. This data is one of several primary sources of occurrence and exposure information used by the EPA to develop regulatory decisions for emerging contaminants.

The current UCMR (UCMR4) requires public water systems like the Town of Herndon to monitor for 28 chemical contaminants in 2018 and 2019. The table below shows the contaminants that were found in 2018 at levels that are able to be detected.

Components (ppb)	Average	Range		Use or Environmental Source
		Low	High	
HAA5	16.46	6.72	36.82	By-product of drinking water disinfection
HAABr6	6.94	4.43	12.46	By-product of drinking water disinfection
HAA9	22.90	11.15	48.46	By-product of drinking water disinfection
Manganese	0.892	0.744	1.04	Naturally occurring element

## DEFINITIONS

Unit Descriptions	
Term	Definition
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
NTU	NTU: Nephelometric Turbidity Units. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
positive samples/month	positive samples/month: Number of samples taken monthly that were found to be positive
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.
positive samples	positive samples/yr: The number of positive samples taken that year

Important Drinking Water Definitions	
Term	Definition
MCLG	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.
MCL	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.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection 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.
MRDL	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.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level



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