

2023 CITY OF WINCHESTER ANNUAL DRINKING WATER QUALITY REPORT

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2023 is designed to provide you with valuable information about your drinking water quality. The City of Winchester is committed to providing you with a safe and dependable supply of drinking water, and we want you to understand the efforts we make to protect your water supply. The quality of your drinking water meets all state and federal requirements administered by the Virginia Department of Health (VDH).

Este informe contiene información muy importante sobre su agua potable.

Tradúzcalo o hable con alguien que lo entienda bien.

If you have questions about this report, want additional information about any aspect of your drinking water, or want to know how to participate in decisions that may affect the quality of your drinking water, please contact:

Don Riggleman, City of Winchester at (540)773-1340 ext.1204

GENERAL INFORMATION

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Substances (referred to as contaminants) in source water may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban storm water runoff, residential uses, and many other types of activities. Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment.

All drinking water, including bottled drinking water, may contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

SOURCES AND TREATMENT OF YOUR DRINKING WATER

Your drinking water is surface water obtained from the North Fork Shenandoah River. Two booster pump stations, six storage tanks, and variously sized pipes distribute water throughout the City.

All water supplied to the City Winchester undergoes treatment. This treatment is accomplished at the Percy Miller water treatment plant prior to distribution and consists of chemical addition, coagulation, flocculation, sedimentation, and filtration to remove turbidity; chlorination to disinfect the water; and fluoridation to aid in reducing tooth decay.

SOURCE WATER ASSESMENT

A source water assessment for the City of Winchester was completed by the Virginia Department of Health (VDH) in July 2020. This assessment determined that the City's raw water source, the North Fork Shenandoah River, may be susceptible to contamination because it is surface water exposed to a wide array of contaminants at varying concentrations. Changing hydrologic, hydraulic, and atmospheric conditions promote migration of contaminants from land use activities of concern within the assessment area. More specific information may be obtained by contacting the water system representative referenced within this report.

QUALITY OF YOUR DRINKING WATER

Your drinking water is routinely monitored according to Federal and State Regulations for a variety of contaminants. The table on the next page shows the results of our monitoring for the period of January 1, to December 31, 2023.

Most of the results in the table are from testing done in 2023. However, the state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, is more than one year old.

DEFINITIONS

In the table and elsewhere in this report you will find many terms and abbreviations you might not be familiar with. The following definitions are provided to help you better understand these terms:

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

Level 1 Assessment: A Level I Assessment is a study of the water system to identify potential problems and determine, if possible, why total coliform bacteria have been found in our water system.

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 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 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.

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 contamination.

Nephelometric Turbidity Unit (NTU): A measure of the clarity of water. Turbidity more than 5 NTU is just noticeable to the average person.

Non-detects (ND): Lab analysis indicates that the contaminant is not present

Parts per billion (ppb) or Micrograms per liter (µg/L): One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per million (ppm) or Milligrams per liter (mg/L): One part per million corresponds to one minute in two years or a single penny in \$10,000.

Picocuries per liter (pCi/L): A measure of the radioactivity in water.

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

PFAS: Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that includes PFOA, PFOS, GenX, and many other chemicals. Examples of where PFAS can be found include cleaners, textiles, leather, paper and paints, fire-fighting foams, and wire insulation. PFAS, often referred to as "forever chemicals," do not easily break down in the environment and are difficult to destroy. More information on PFAS in drinking water can be located at <https://www.vdh.virginia.gov/drinking-water/pfas/>

WATER QUALITY RESULTS

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The tables list only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment.

Maximum Contaminant Levels (MCL's) are set at very stringent levels by the U.S. Environmental Protection Agency. In developing the standards EPA assumes that the average adult drinks two liters of water each day throughout a seventy-year life span. EPA generally sets MCL's at levels that will result in no adverse health effects for some contaminants or a one-in-ten thousand to one-in-a-million chance of having the described health effect for other contaminants.

Turbidity

Contaminant	MCLG	MCL	Highest Single Level Found	Unit Measurement	Lowest Monthly %<0.3 NTU	Violation	Sample Date	Typical Source of Contamination
Turbidity (1)	NA	TT	0.25	NTU	100	NO	7-7-23	Soil Runoff

(1) Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration and disinfection process.

Total Organic Carbon

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Sample Date	Typical Source of Contamination
Total Organic Carbon (2)	NA	TT	2.38	Ratio of Actual to Required Removals	NO	2023	Naturally Present in Environment

(2) Total Organic Carbon (TOC) has no health effects but provides formation medium for disinfection by-products. These by-products include Trihalomethanes (TTHM) and Haloacetic acids (HAA5).

Radiological Contaminant

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Sample Date	Typical source of contamination
Alpha Emitter	0	15	<0.42	pCi/l	NO	01-12-23	Erosion of Natural Deposits
Beta Emitter	0	⁴ mrem/yr	1.5	pCi/l	NO	01-12-23	Decay of natural and man-made deposits
Combined Radium	0	5	0.8	pCi/l	NO	01-12-23	Erosion of Natural Deposits

Inorganic Contaminants

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Sample Date	Typical Source of Contamination
Nitrates	10	10	1.59	mg/l	NO	01-11-23	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
Barium	2	2	0.038	mg/l	NO	01-12 -23	Erosion of natural deposits; Discharge from metal refineries; Discharge of drilling wastes
Sodium	NA	NA	12.1	mg/l	NO	01-12-23	Sodium may reach both ground and surface water supplies as a result of residential, commercial and industrial activity, such as road salting.
Fluoride	4	4	0.57	mg/l	NO	01-11-23	Erosion of natural deposits; deposits; Discharge from fertilizer and aluminum factories; Water additive, which promotes strong teeth.

Total Coliform

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Sample Date	Typical Source of Contamination
Total Coliform (3) Presence or Absence	0	Presence of Total Coliform in >1 Sample per Month	0	P/A	NO	2023	Naturally Present in the environment

(3) Total Coliform: Bacteria that are naturally present in the environment and are used as an indicator for potentially harmful bacteria.

Disinfectant and Disinfection Byproduct Contaminants

Contaminant	MCLG	MCL	Level Found	Unit Measurement	Violation	Sample Date	Typical Source of Contamination
Total Trihalomethanes (TTHM)	0	80	57	ppb	NO	2023	By-product of water chlorination
Halo Acetic Acids (HAA5)	0	60	55	ppb	NO	2023	By-product of water chlorination

Contaminant	MRDLG	MRDL	Level Found	Unit Measurement	Violation	Sample Date
Residual Chlorine	4	4	2.27 avg. Range (0.6 - 3.0)	mg/l	NO	Monthly

Lead and Copper

Contaminant	MCLG	MCL	Level Found	Unit Measurement	AL Exceeded	Samples >AL	Sample Date	Typical Source of Contamination
Lead Copper	0 1300	AL-15 AL-1300	ND 0.11	ppb mg/l	NO NO	0 0	06-2021	Corrosion of household plumbing systems; Erosion of natural deposits

Amended 3/25/2024

*ND = Non-Detectable

(1) Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of our water quality and the effectiveness of the filtration process. Turbidity TT - 1 NTU Max; ≤ 0.3 NTU in at least 95% of all samples tested.

(2) Total Organic Carbon (TOC) has no health effects but provides formation medium for disinfection by-products.

(3) Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present. We analyze Total Coliform bacteria samples three times every month.

Sodium was detected at a concentration of 12.6 mg/l. There is no MCL for sodium, we are providing this information for consumers who wish to know the level of sodium in our water. For individuals on a very low sodium diet (500 mg/day), EPA recommends that drinking-water sodium not exceed 20 mg/L. To avoid adverse effects on taste, EPA recommends that sodium concentrations in drinking water not exceed 30 to 60 mg/L, a threshold for taste-sensitive segments of the population.

PER AND POLYFLUOROALKYL SUBSTANCES (PFAS)

On March 14, 2023, EPA released the proposed [National Primary Drinking Water Regulation](#) (NPDWR) for PFOA and PFOS, along with four additional PFAS. EPA is proposing to set a Maximum Contaminant Level (MCL) of 4 parts per trillion (ppt) for PFOA and 4 ppt for PFOS. In addition to these two MCLs, EPA is proposing to address four additional PFAS (GenX, PFBS, PFNA, and PFHxS) as a mixture using a Hazard Index. The Hazard Index is a tool typically used to evaluate potential health risks from exposure to chemical mixtures.

PFAS Compound	Proposed MCLG	Proposed MCL
PFOA	0 ppt	4.0 ppt
PFOS	0 ppt	4.0 ppt
PFNA	1.0 (unitless Hazard Index)	1.0 (unitless Hazard Index)
PFHxS		
PFBS		
HFPO-DA (GenX)		

It is important to note that the EPA proposed regulation for PFOA and PFOS, along with four additional PFAS has not been finalized.

The results of our PFAS sampling are listed in the table below. We are pleased to proclaim that our levels are non-detect and well below the proposed EPA MCL for PFAS contamination in our source water.

PFAS Compound	Proposed MCL	City of Winchester 2023 Monitoring Results
PFOA	4.0 ppt	ND
PFOS	4.0 ppt	ND
PFNA	1.0 (unitless Hazard Index)	ND (unitless Hazard Index)
PFHxS		
PFBS		
HFPO-DA (GenX)		

LEAD CONTAMINATES

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. The City of Winchester is responsible for providing high quality drinking water but cannot control the variety of materials used in the household 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 the lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

BACKFLOW AND CROSS-CONNECTION CONTROL

The City is committed to help ensure the safety of our water by means of a backflow and cross-connection control program. During the recent water meter replacement project, the City of Winchester installed double check valves to prevent the possibility of water flowing backwards and creating a vacuum, better known as back siphonage. Back siphonage is a major cause of back flow.

Additional information and City of Winchester code information can be found at the following web address.
https://library.municode.com/va/winchester/codes/code_of_ordinances?nodeId=CO_CH29UT_ARTIWA

Once at this location, the information is listed under the following Division.
DIVISION 3. - BACKFLOW PREVENTION AND CROSS-CONNECTION CONTROL

VIOLATION INFORMATION

Monitoring and Reporting:

We were in full compliance with all monitoring and reporting requirements, and no violations occurred during the calendar year 2023.

Water Quality:

We were in full compliance with all water quality standards, and no violations occurred during the calendar year 2023.

The City of Winchester prepared this Drinking Water Quality Report with the assistance and approval of the Virginia Department of Health (VDH). Please call if you have questions.

Signature: 

Date: 3/25/2023