

# Annual Drinking Water Quality Report for 2021

Town of Stuart

PWSID 5141640

## INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2021 is designed to inform you about your drinking water quality. Our goal is to provide 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 must meet state and federal requirements administered by the Virginia Department of Health (VDH).

If you have questions about this report or 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:

**Mr. Tony Boothe, Water Plant Manager**  
**(276) 694-3902**

The time and location of the regularly scheduled council meeting is as follows:

**Third Wednesday of each month at 7:00 PM at the Town Office**

## 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. Contaminants in source water may be naturally occurring substances, or may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban stormwater 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.

Contaminants that may be present in source water include:

- **Microbial contaminants**, such as viruses and bacteria, which 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 stormwater 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 stormwater runoff, and residential uses.
- **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 stormwater runoff, and septic systems.
- **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 which limit the amount of certain contaminants in water and provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

All drinking water, including bottled drinking 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 can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

## VULNERABLE POPULATIONS

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/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).

## SOURCE(S) AND TREATMENT OF YOUR DRINKING WATER

Our water supply is from surface water and well water sources. The primary raw water source is the South Mayo River. An auxiliary source of water is available from Carter Mountain Reservoirs.

Treatment of the surface water consists of chemical addition, coagulation, flocculation, settling, filtration, fluoridation and chlorination. All of these processes work together to remove the physical, chemical and biological contaminants to make the water safe for drinking. The wells are PH adjusted and disinfected prior to being pumped into the system.

A source water assessment of our system was conducted in 2001 by the Virginia Department of Health. The river source was determined to be of high susceptibility to contamination while the reservoir sources were determined to be of moderate susceptibility to contamination. These determinations were based upon criteria developed by the state in its approved Source Water Assessment Program.

The assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern and documentation of any known contamination within the last five years. The report is available by contacting your water system representative at the phone number given elsewhere in this drinking water report.

### WATER CONSERVATION TIPS

Did you know that the average U.S. household uses approximately 350 gallons of water per day? Luckily, there are many low-cost or no-cost ways to conserve water. Water your lawn at the least sunny times of the day. Fix toilet and faucet leaks. Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath. Turn the faucet off while brushing your teeth and shaving; 3-5 gallons go down the drain per minute. Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!

### DEFINITIONS

Contaminants in your drinking water are routinely monitored according to federal and state regulations. The table on the next page shows the results of this monitoring for the period of January 1<sup>st</sup> through December 31<sup>st</sup>, 2021. 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:

**Non-detects (ND)** - lab analysis indicates that the contaminant is not detectable, based on the limits of the analytical equipment used.

**Parts per million (ppm) or Milligrams per liter (mg/l)** - one part per million corresponds to one minute in two years or one penny in \$10,000.

**Parts per billion (ppb) or Micrograms per liter (µg/l)**- one part per billion corresponds to one minute in 2,000 years, or one penny in \$10,000,000.

**Picocuries per liter (pCi/L)** - picocuries per liter is a measure of the radioactivity in water.

**Nephelometric Turbidity Unit (NTU)** - nephelometric turbidity unit is a measure of the cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

**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 Disinfection 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.

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

**WATER QUALITY RESULTS**

We routinely monitor for various contaminants in the water supply to meet all regulatory requirements. The table lists 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.

<b>TEST RESULTS</b>						
Contaminant / unit of measurement	Violation Y/N	Level Detected/ <b>Range</b>	Sample Date	MCLG	MCL	Likely Source of Contamination
<b>Microbiological Contaminants (ND)</b>						
Total Coliform Bacteria (Present or absent)	N	No samples total coliform present	Monthly at two sample sites	0	Presence of coliform in no more than 1 sample per month	Naturally present in the environment and are used as an indicator that other potentially-harmful, bacteria that may be present.
Turbidity / NTU	N	0.086(highest level)  100 % < 0.3	Daily	NA	1.0 Max TT 0.3 in 95 % of monthly samples	Soil runoff
<b>Lead and Copper</b>						
Lead (ppb)	N	< 2 (90 <sup>th</sup> percentile) Range: All = ND Of the 10 samples collected none exceeded the AL	2021	0	AL = 15	Corrosion of household plumbing systems; erosion of natural deposits.
Copper (ppm)	N	<.02 (90 <sup>th</sup> percentile) Range = <0.02-.103mg/l Of the 10 samples collected none exceeded the AL.	2021	1.3	AL = 1.3	Corrosion of household plumbing systems; erosion of natural deposits.
<b>Inorganic Contaminants</b>						
Sodium	N	7.64 mg/l	Nov. 2021	20	20	Naturally present, plus the addition of Soda Ash for Coagulation.
Nitrate + Nitrite (ppm)	N	< .05ppm	November 2021	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Fluoride (ppm)	N	Average= 0.78 Range = 0.62 - .95	Daily 2021	4	4	Water additive which promotes strong teeth
<b>Disinfection Byproducts</b>						
Chlorine (ppm)	N	Average=1.0 Range: 0.7 - 1.4	Monthly at two sample sites	4	4	Chlorine is added to insure that water is disinfected
TTHM [Total trihalomethanes] (ppb)	N	RAA = 33.5 Range: 14 - 52	Quarterly 2021	N/A	80	By-product of drinking water chlorination
HAA [Haloacetic Acids] (ppb)	N	RAA = 26 Range: 12 - 57	Quarterly 2021	N/A	60	By-product of drinking water chlorination

TOC range = ppm  TOC Removal ratio Total Organic Carbon	N	Range 0.40 to 0.49  Removal Ratio: = 1	Quarterly 2021	NA	TT- TOC Removal Ratio greater than or equal to 1	Naturally present in the source water
radium was detected within previous 5 years						
Combined radium (pCi/L)	N	0.2	November 2019	0	5	Erosion of natural deposits

The results in this table are from testing done from 2021. However, the State allows us to monitor for some contaminants less than once a year because the concentrations of these contaminants do not change frequently. We constantly monitor for various contaminants to meet all regulatory requirements. The table lists only those contaminants that had some level of detection. Other contaminants were either not present or below the detection limits of the laboratory equipment. Some of our results, though representative, are more than one year old.

The U.S. Environmental Protection Agency sets MCLs at very stringent levels. In developing the standards EPA assumes that the average adult drinks 2 liters of water each day throughout a 70-year life span. EPA generally sets MCLs 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.

Cryptosporidium is a microbial parasite found in surface waters throughout the United States. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Our monitoring indicated the presence of 3 of these organisms in our raw/source water samples. Current test methods do not allow us to determine if 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 are at a greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

**Additional information on 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 Stuart 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 15 to 30 seconds or until it becomes cold or reaches a steady temperature 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 or at <http://www.epa.gov/safewater/lead>.

**VIOLATIONS:** The Town of Stuart had no violations in 2021.

**AWARDS:**

The Town of Stuart has earned a “Silver” ( Backwash ) 2021 Excellence in Waterworks Operations/ Performance Award. The Town of Stuart Water Plant has received a VOP award every year since the award program was implemented in 2005.

This Drinking Water Quality Report was presented by:  
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