



Town of Purcellville

Water Quality Report

.....
2019



I am proud to share the Town of Purcellville's 2019 Drinking Water Quality Report. During the last year, the Town has collected hundreds of water samples for lab analysis to ensure the safety of the Town's drinking water. **The drinking water produced by the Town of Purcellville is high-quality and met all State and Federal standards for drinking water in 2019.**

Purcellville residents have two protected sources of drinking water, including the J.T. Hirst Reservoir and groundwater wells. Your ratepayer dollars are dedicated to ensuring the delivery system is reliable, and that safe drinking water is available to everyone – now, and for generations to come.

Read on to learn more about the water system and how you can join us in protecting and conserving this valuable resource.

Note the U.S. Environmental Protection Agency requires specific wording for much of this report. For more information regarding this report, or for any questions relating to your drinking water, please call Bernie Snyder, Water Superintendent, at (540) 338-2513.

A handwritten signature in black ink that reads "David A. Mekarski".

David A. Mekarski, AICP
Town Manager



Town of Purcellville Water Quality Report 2019



Sources of Drinking Water

The Town of Purcellville treats more than 200 million gallons of water each year. There are two sources of drinking water for the Town: the J.T. Hirst Reservoir, located at the base of the Blue Ridge Mountains, and groundwater wells located throughout the Town. The J.T. Hirst Reservoir is filled by three primary mountain springs: Harris Spring, Potts Spring, and Cooper Spring. The reservoir, is considered "surface water", which requires treatment at the Surface Water Treatment Plant, located north of Town. The Town produces approximately half of its daily water use at this facility.

The remaining water comes from seven active wells, including: the Forbes, Cornwell, Main Street, Village Case, Mountain View, Jeffries Well, and Marsh Farm Wells. Water treatment occurs as needed at each of these locations to ensure water quality standards are met.

Source Water Assessment

A Source Water Assessment Plan (SWAP) is available at Town Hall. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. The J.T. Hirst Reservoir was determined to be of moderate susceptibility and five of our wells were assessed and all five were determined to be of

high susceptibility to contamination using the criteria developed by the state in its Source Water Assessment Program. If you would like to review the Source Water Assessment Plan, please feel free to contact Town Hall during regular business hours, at (540) 338-7421 or via email at info@purcellvilleva.gov

There are simple ways you can help protect surface water and groundwater ▼



Use less fertilizer.



Pick up after your pets.



Never dump anything in creeks or ponds.



Dispose of household chemicals, paint, and fertilizers through a hazardous waste recycling program.

Check the Loudoun County website for information about hazardous waste disposal at www.loudoun.gov/338/hazardouswaste-disposal



Don't flush unused pharmaceuticals.

Ask your pharmacist about proper disposal, participate in the Town's Prescription Drug Take Back Day, or drop off unused/expired medication at the drug collection box at the Western Loudoun Sheriff Station (47 West Loudoun Street, Round Hill, VA).



Substances That Could be in Your Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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 can acquire naturally occurring minerals and in some cases, radioactive material and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife

- **Inorganic Contaminants** such as salts and metals which can be naturally occurring or may 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 may also come from gas stations, urban storm water runoff, and septic systems
- **Radioactive Contaminants** which can be naturally occurring or may be the result of oil and gas production and mining activities



Save money, reduce waste, fill reusable bottles with tap water.



For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.





Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 the 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

Important Health Information

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, or those with HIV/AIDS or other immune system disorders, and some elderly and infants may be particularly at risk for infections. These people should seek advice from their health care providers about drinking water. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or water.epa.gov/drink/hotline.



Town of Purcellville Water Quality Report 2019

Information on the Internet



The U.S. EPA Office of Water (www.epa.gov/watrhome) and the Centers for Disease Control and Prevention (www.cdc.gov) websites provide a substantial amount of information on many issues relating to water resources, water conservation and public health.



The Virginia Department of Health, Office of Drinking Water has a website that provides complete and current information on water issues in Virginia including valuable information about our watershed. Please visit www.vdh.state.va.us/drinkingwater/index.htm for more information.

Town of Purcellville
Water Quality Report
2019



Sampling Results

During the past year, we have taken hundreds of water samples to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The drinking water produced by the Town of Purcellville Water Department met all federal and state standards for drinking water during 2019.



Fluoride in Your Drinking Water

The Town of Purcellville adds fluoride to the drinking water to meet recommendations set by the United States Department of Health and Human Services (HHS) and Centers for Disease Control (CDC). The optimal level for fluoride is intended to prevent tooth decay and protect public health. In January 2011, the HHS and CDC issued a revised recommendation for the optimal level of fluoride in drinking water. Based on new research, HHS/CDC recommends a fluoride level of 0.7 mg/L as optimal for ensuring public health protection. In the past, HHS/CDC supported a fluoride level between 0.7 to 1.2 mg/L, as safe and effective in preventing tooth decay. The Town achieves the revised optimal fluoride level of 0.7 mg/L in its operations. More information on fluoride can be found on the Town's website at <http://www.purcellvilleva.gov/821>.

Update on Hirst Farm Well

Prior to July 2015, the Hirst Farm Well produced approximately six percent of the Town's daily water capacity. However, the Hirst Farm Well was turned off on July 10, 2015 after samples collected from the untreated (raw) water tested positive for a fecal indicator (*E. coli*). It is important to note that treated water samples collected from the well showed no presence of bacteria and was safe to drink. The Hirst Farm Well was not operational at any time during 2019. The Town is currently investigating treatment options, so the well can be reinstated in the future.



The table at right shows only those contaminants that were detected in the water. The state allows us to monitor for certain substances less often than once per year because the concentration of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

Definitions

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

MCL (Maximum Contaminant Level) The 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 (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 (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.

MRDLG (Maximum Residual Disinfectant 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.

NA Not applicable.

ND (Not Detected) Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units) Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter) A measure of radioactivity.

ppb (parts per billion) One part substance per billion parts water (or micrograms per liter).

ppm (parts per million) One part substance per million parts water (or milligrams per liter).

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

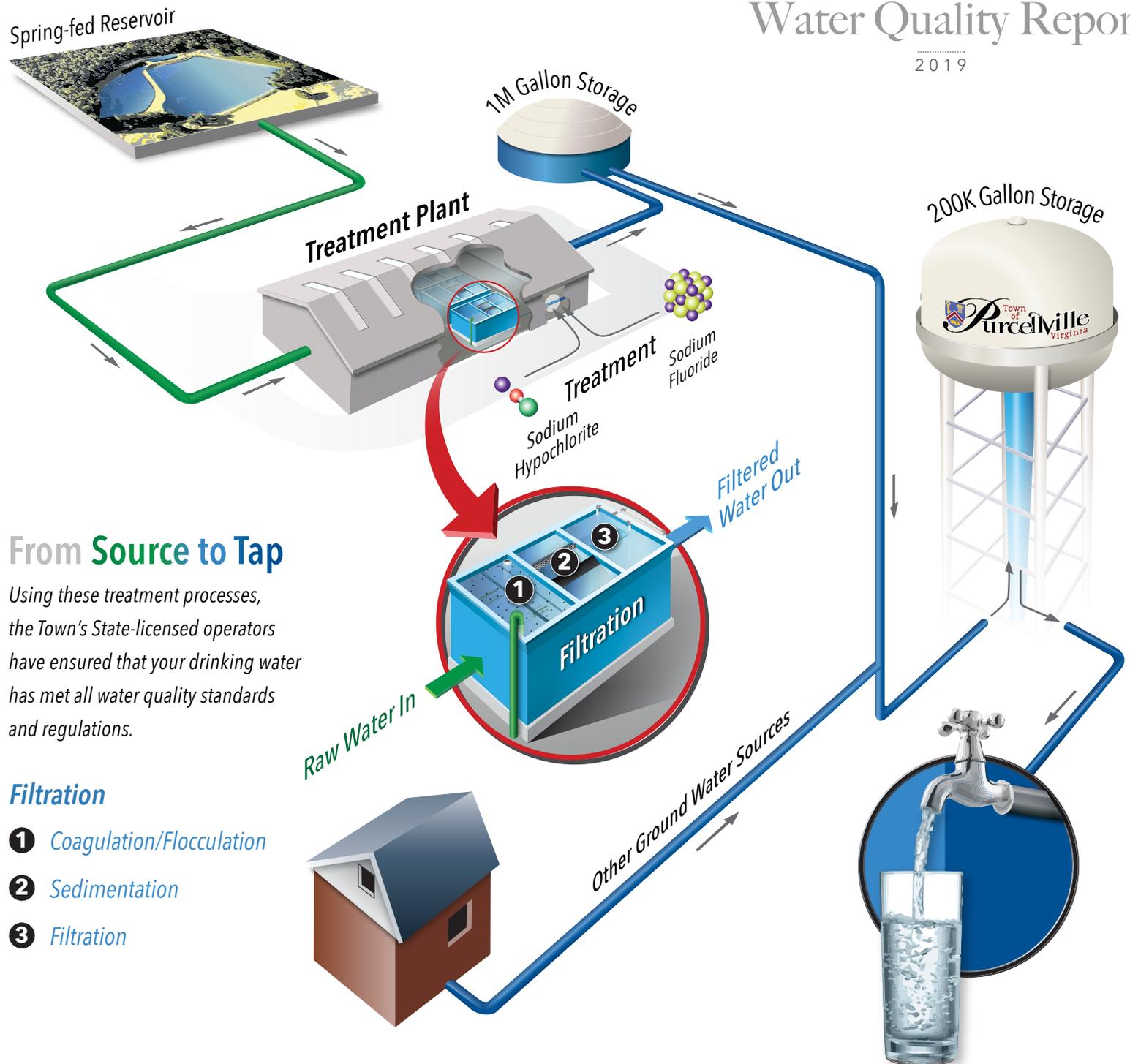
Substance (Units)	Year Sampled	MCL (MRDL)	MCLG (MRDLG)	Amount Detected	Range Low-High	Violation?	Typical Source
<i>Cis</i> -1,2 Dichloroethylene (ppb)	2019	70	70	1.6	ND-1.6	No	Discharge from industrial chemical factories
Alpha Emitters (pCi/L)	2017 & 2018	15	0	5.4	ND-5.4	No	Erosion of natural deposit
Barium (ppm)	2017, 2018 & 2019	2	2	0.065	ND-0.065	No	Erosion of natural deposits; Discharge of drilling wastes
Beta/Phonton Emitters ⁱ (pCi/L)	2017 & 2018	50	0	9.1	ND-9.1	No	Decay of natural and man-made deposits
Chlorine (ppm)	2019	(4)	(4)	1.43	0.5-1.99	No	Water additive to control microbes
Combined Radium (pCi/L)	2017 & 2018	5	0	0.7	ND-0.7	No	Erosion of natural deposits
Fluoride (ppm)	2017, 2018 & 2019	4	4	0.81	ND-0.81	No	Erosion of natural deposits; Water additive that promotes strong teeth
Haloacetic Acids (HAAs) (ppb)	2019	60	NA	18	8.7-2.6	No	By-products of drinking water chlorination
Nitrate (ppm)	2019	10	10	3.5	ND-3.5	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
TTHMs (Total Trihalomethanes) (ppb)	2019	80	NA	32	17-69	No	By-product of drinking water chlorination
Turbidity ⁱⁱ (NTU)	2019	TT	NA	0.14	0.03-0.14	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2019	TT	NA	100	NA	No	Soil runoff
Total Organic Carbon (TOC) ⁱⁱⁱ	2019	TT	NA	1.44	1.19-1.93	No	Naturally occurring organic matter
Total Coliform Bacteria	2019	Presence in more than one sample in a month	0	0	NA	No	Naturally present in the environment
E.coli	2019	A routine sample and a repeat sample are positive	0	0	NA	No	Human and animal fecal waste

Substance (Units)	Year Sampled	AL	MCLG	Amount Detected (90% tile)	Sites Above AL/Total Sites	Violation?	Typical Source
Copper (ppm)	2019	1.3	1.3	0.51	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2019	15	0	<2.5	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits

ⁱ The MCL for beta particles is 4 mrem/year. The U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

ⁱⁱ Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

ⁱⁱⁱ TOC is reported as a removal ratio on an annual average basis, the annual average removal ratio must be equal to or greater than 1.0.



From Source to Tap

Using these treatment processes, the Town's State-licensed operators have ensured that your drinking water has met all water quality standards and regulations.

Filtration

- 1 Coagulation/Flocculation
- 2 Sedimentation
- 3 Filtration

