Annual Drinking Water Quality Report

(Town of Pembroke - PWSID 1071665)

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2025 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: **Stanley Lucas at (540) 626-7191**

The times and location of regularly scheduled board meetings are as follows: **the first Monday of each month at 7:00pm at the Pembroke Town Hall, 500 Snidow Street, Pembroke.**

GENERAL INFORMATION

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. Contaminants that may be present in source water include: (i) microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; (ii) 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; (iii) pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; (iv) 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; (v) 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. FDA 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 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 Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer who are 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 microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

SOURCE(S) and TREATMENT OF YOUR DRINKING WATER

Your drinking water is purchased from the Giles County PSA. The PSA obtains its water from two drilled, groundwater wells (Well #1 and Well #4), one of which is under the direct influence of surface water. Both wells are located in the Town of Pearisburg.

Is there any treatment of your drinking water supply? (X) Yes ( ) No

The portion of your drinking water that comes from Well #1 is processed via microfiltration, disinfection with chlorine, fluoridation and the addition of a small amount of orthophosphate. The portion of your drinking water that comes from Well #4 is processed using disinfection with chlorine, fluoridation and the addition of a small amount of orthophosphate. Disinfection with chlorine is used to kill dangerous bacteria and microorganisms that may be in the water and is considered to be one of the major public health advances of the 20th century. A free chlorine residual is maintained throughout the distribution system to prevent the possibility of bacteria growth.

Source Water Assessment

The Virginia Department of Health conducted a source water assessment of our system during 2020. The wells were determined to be of high susceptibility to contamination using the 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. The report is available by contacting PSA Director Kevin Belcher at (540) 921-2525.

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 our monitoring for the period of January 1st to December 31st, 2025. 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:

Maximum Contaminant Level, or 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, or 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 Goal or MRDLG: the level of 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 or 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.

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

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.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

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

Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Treatment Technique (TT) - a required process intended to reduce the level of a contaminant in drinking water.

Level 1 Assessment - 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.

Level 2 Assessment - a very detailed study of the waterworks to identify potential problems and determine (if possible) why an *E. coli* PMCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity, or cloudiness, of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity is monitored because it is a good indicator of the effectiveness of our filtration system.

WATER QUALITY RESULTS

Microbiological Contaminants

Contaminant	MCLG	MCL	No. of Samples Indicating Presence of Bacteria	Violation (Y/N)	Number of Samples Analyzed	Typical Source of Contamination
E. coli	0	1 routine sample **and** a repeat sample are total coliform positive, **and** 1 is also *E. coli* positive	0	N	30	Human and animal fecal waste

Regulated Contaminants

Contaminant (units)	MCLG	MCL	Level Detected	Violation (Y/N)	Range	Date of Sample	Typical Source of Contamination
Nitrate (ppm)	10	10	2.02	N	.522 – 2.02	2025	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride (ppm)	4	4	0.84	N	0 – 1.18	2025	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Barium (ppm)	2	2	.029	N	ND – .029	2025	Discharge of drilling waste; Discharge from metal refineries; Erosion of natural deposits
Alpha Emitters (pCi/l)	0	15	0.8	N	ND – 0.8	2024	Erosion of Natural Deposits
Combined Radium (pCi/l)	0	5	1.4	N	0.4 – 1.4	2024	Erosion of Natural Deposits
Beta/photon emitters (mrem/yr)	0	4	1.8	N	1.3 – 1.8	2024	Decay of natural and man-made deposits.
Chlorine (ppm)	MRDLG = 4	MRDL = 4	0.49	N	0.30 – 0.70	2025	Water additive used to control microbes
Haloacetic Acids (ppb)	NA	60	15	N	8 – 24	2025	By-product of drinking water disinfection
Total Trihalomethanes (ppb)	NA	80	18	N	13 – 24	2025	By-product of drinking water disinfection
Turbidity	NA	TT,1 NTU Max	0.11	N	0.04 – 0.11	2025	Soil runoff
		TT, $\leq$ 0.3 NTU 95% of the time	100%	N			

Lead and Copper Contaminants

Contaminant (units)	MCLG	Action Level	90th Percentile	Date of Sampling	# of Sampling Sites Exceeding Action Level	Typical Source of Contamination
Lead (ppb)	0	AL = 15	1.1	2024	1	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	1.3	AL = 1.3	0.152	2024	0	Corrosion of household plumbing systems; Erosion of natural deposits

Monitoring Results for Sodium (Unregulated - No Limits Designated)			
Level Detected (unit)	Sample Date	Typical Source	Guidance
8.21 (mg/L) Range: 2.3 – 8.21 mg/L	2025	Naturally Occuring; Addition of treatment chemicals/processes	For individuals on a very low sodium diet (500 mg/day), EPA recommends that drinking-water sodium not exceed 20 mg/L. Should you have a health concern, contact your health care provider.

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 presented in the above tables, though accurate, is more than one year old.

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 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.

ADDITIONAL HEALTH INFORMATION

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 Town of Pembroke is responsible for providing high quality drinking water and removing lead pipes, but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have your water tested, contact Stanley Lucas at (540) 626-7191. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at http://www.epa.gov/safewater/lead.

ADDITIONAL INFORMATION ABOUT YOUR WATERWORKS

Service Line Inventory

The Town of Pembroke has completed the required Lead Service Line Inventory. A lead service line inventory was completed for this system and submitted to VDH-Office of Drinking Water. We have determined that this system is comprised of non-lead service lines along with unknown materials. If you are served by a lead status unknown service line, your service line material is unknown, but may be lead. If your service line is unknown, you have already been notified or will be notified. The inventory is accessible as a hard copy at the Town Offices by contacting Stanley Lucas at (540) 626-7191.