Annual Drinking Water Quality Report for 2019

Pine Forest Subdivision PWS ID No. 5089634

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INTRODUCTION

This Annual Drinking Water Quality Report for the 2019 calendar year 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 if you 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:

Henry County Public Service Authority 2285 Fairystone Park Highway Bassett, VA 24055	Mr. Darrell Campbell Phone: 276.634.2555 Email: dcampbell@co.henry.va.us

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 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.

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, the United States Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water 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 EPA'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 C*ryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline at 800.426.4791.

SOURCE(S) AND TREATMENT OF YOUR DRINKING WATER

The source of your drinking water is groundwater drawn from two drilled wells located within the subdivision. The water is treated with soda ash for pH adjustment for corrosion control purposes and sodium hypochlorite for continuous disinfection.

A source water assessment of our system was conducted in 2003 by the Virginia Department of Health. 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 within the last 5 years. The report is available by contacting your water system operator, Mr. Darrell Campbell at 276.634.2555.

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 through December 31, 2019. 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) - a measure of the radioactivity in water.

Nephelometric Turbidity Unit (NTU) - 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.

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

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 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 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.

Variances and exemptions - state or EPA permission not to meet an MCL or a treatment technique under certain conditions.

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.

Microbiological Contaminants

Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample	Typical Source of Contamination
Total Coliform Bacteria	0	1 positive monthly sample	**Non-Detects**	No	Monthly 2019	Naturally present in the environment

Inorganic Contaminants

Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample	Typical Source of Contamination
Nitrate (ppm)	10	10	Highest Level: 3.8 Range: 0.72 to 3.8	No	November 2019	Fertilizer use runoff; septic tanks / sewage leaching; erosion of natural deposits
Barium (ppm)	2	2	Highest Level: **0.039** Range: 0.026 to 0.039	No	November 2017	Erosion of natural deposits, discharge from metal refineries, discharge from drilling wastes

Radiological Contaminants

Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample	Typical Source of Contamination
Alpha emitters (pCi/L)	0	15	Highest Level: **0.4** Range: ND to 0.4	No	June 2018	Erosion of natural deposits
Combined Radium (pCi/L)	0	5	Highest Level: **0.4** Range: 0.2 to 0.4	No	June 2018	Erosion of natural deposits
Uranium (µg/L)	0	30	Highest Level: 0.6 Range: <0.6 to 0.6	No	June 2018	Erosion of natural deposits
Beta Emitters (pCi/L)	0	50	Highest Level: **2.9** Range: 2.8 to 2.9	No	June 2018	Decay of natural and man-made deposits

Disinfectants / Disinfection Byproducts

Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Exceedance	Date of Sample	Typical Source of Contamination
Total Haloacetic Acids -HAA5 (ppb)	N/A	60	8.7	No	August 2019	Byproduct of drinking water chlorination / disinfection
Total Trihalomethanes -TTHM (ppb)	N/A	80	<1 (non-detect)	No	August 2019	Byproduct of drinking water chlorination / disinfection
Chlorine Residual (ppm)	MRDLG 4	MRDL 4	Highest Quarterly Avg.: **1.56** Range: 0.92 to 1.73	No	Monthly 2019	Water additive for disinfection to control microorganisms

Lead and Copper

Copper (ppm)	1.3	AL= 1.3	**0.22** (90th Percentile) Range: 0.0046 to 0.4 All five samples were below the respective Action Level	No	September 2019	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	0	AL= 15	**20** (90th Percentile) Range: <1 to 39	**Yes**	September 2019	Corrosion of household plumbing systems; Erosion of natural deposits

Volatile Organic Contaminants

Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Exceedance	Date of Sample	Typical Source of Contamination
Xylenes (ppm)	10	10	**0.0044** Range: ND – 0.0044	No	September 2019	Discharge from petroleum factories; discharge from chemical factories

Aesthetic Quality						
Contaminant /Unit of Measurement	**MCLG**	**SMCL**	**Level Found**	**Exceedance**	**Date of Sample**	**Typical Source of Contamination**
Iron (ppm)	N/A	0.3	Highest Level:0.67 Range: <0.05 to 0.67	Yes	November 2017	Erosion of natural deposits.

*The presence of iron may affect the aesthetics of the water quality, including taste and clarity. Although there was an iron level in exceedance of the SMCL, it is not in violation of regulatory compliance.

The results in the table are from testing done between 2017 and 2019. 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 results, though representative, are more than one year old.

The U.S. EPA 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-one-million chance of having the described health effect for other contaminants.

Other drinking water constituents you may be interested in are as follows:

SODIUM: In the compliance samples collected during November 2017, the sodium content was determined to be 48.9 ppm from Well No. 1 and 41.8 ppm from Well No. 9, which are above the maximum recommended level. The EPA has established a recommended level of 20 ppm, this is the optimal level established for individuals on a sodium restricted diet. If you have any concerns about the sodium level in your drinking water, you may wish to consult with your physician. The elevated sodium concentration is most likely a result of the soda ash pH adjustment treatment.

TURBIDITY: Turbidity in compliance samples, also collected in November 2017, was 0.17 NTU (Nephelometric Turbidity Units) at Well No. 1 and 3.69 NTU at Well No. 9. Turbidity is related to the clarity of water and should generally be less than 1.0 NTU at the point of entry to the distribution system for those groundwater supplies not under the influence of surface water runoff. The turbidity results for Well No. 9 are higher due to the higher presence of iron.

ZINC: Also from the November 2017 compliance samples, zinc was detected at concentrations of 0.014 mg/L from Well No. 1 and 0.0.91 from Well No. 9, neither of these results exceeded the SMCL of 5 mg/L. The presence of zinc may result in a metallic taste in the drinking water and/or products made with the water such as coffee and tea.

We are pleased to report to you that there were no detections of total coliforms or fecal coliforms in the monthly samples collected during the calendar year 2019.

ADDITIONAL INFORMATION FOR NITRATE

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause acquired Methemoglobinemia (blue baby syndrome). Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

VIOLATION INFORMATION:

The Pine Forest Subdivision water system **did** receive a monitoring or operational violation during the 2019 calendar year. This violation was for exceeding the action level of 15 parts per billion (0.015 milligrams per liter) for lead. In September 2019, samples for lead and copper were collected from five houses in the Pine Forest well system service area. Four of these samples did not reveal lead but the fifth sample detected lead at 39 parts per billion (0.039 milligrams per liter). Lead is reported by the 90th percentile, meaning the 4th and 5th highest samples are averaged.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

The Pine Forest system had been on a reduced, triennial (3 year) sampling schedule for lead and copper since 2001. The 39 ppb result was the highest lead level detected since 1997. We strongly believe the high result was due to the house, from which the sample was collected, being unoccupied at the time of collection. The Public Service Authority now has to sample this system every six months. If the lead levels remain under the action level for three years (6 sample periods) we may return to reduced monitoring. An additional treatment method to better reduce lead levels will be installed at both wells in early 2020.
We have detected lead in source water from one of the wells serving this system on a few occasions. None of these results have exceeded the action level. There are minimal lead containing materials in the well houses and distribution system.

OTHER INFORMATION THAT MAY BE OF INTEREST
The Henry County Public Service Authority has secured grants and funding to extend our Upper Smith River Water Treatment Plant distribution system in the Preston/Spencer area. This project would eliminate the wells that currently serve your neighborhood. Construction of this water line could begin as soon as late 2020.