

2017 ANNUAL DRINKING WATER QUALITY REPORT

Drewryville Water System

PWSID 3175300

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2017 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:

Southampton County Dept of Public Utilities (757) 653-9269

The times and location of regularly scheduled board of supervisors meetings are as follows:

Southampton County Office Center, 4th Monday of each month, Call (757) 653-3015 for times

GENERAL INFORMATION

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. 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. The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells.

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 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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water 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 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 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 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).

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 Southampton County Department of Public Utilities 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 30 seconds – 2 minutes 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>.

SOURCE(S) and TREATMENT OF YOUR DRINKING WATER

The source(s) of your drinking water is groundwater as described below:

The Drewryville Water System receives its water from two wells. Well # 1 is 240 feet deep and Well # 2 is 310 feet deep.

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

The Virginia Department of Health conducted a Source Water Assessment of the Town of Drewryville's Well #1 in 2001. The drilled well was 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 and Potential Conduits to Groundwater, utilized at Land Use Activity sites in Zone 1, Susceptibility Explanation Chart, and Definitions of Key Terms. An assessment is pending on Well # 2. The report for Well # 1 is available by contacting your waterworks system owner/operator at the phone number or address included in the CCR.

DEFINITIONS

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. The table included shows the results of our monitoring for the period of **2013 - 2017**. In the table and elsewhere in this report you will find many terms and abbreviations with which you might not be familiar. The following definitions are provided to help you better understand these terms:

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 ($\mu\text{g/L}$) - 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) - is a measure of the radioactivity in water.

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

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 Disinfection 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 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.

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

Level 1 Assessment – an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment.

Level 2 Assessment – an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment in a more comprehensive investigation than a Level 1 assessment.

Sanitary Defect – a defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place.

Secondary Maximum Contaminant level, or SMCL – the level of a contaminant, which, when exceeded, may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. The presence of secondary contaminants is not considered a risk to health.

WATER QUALITY RESULTS

CONTAMINANT	MCLG	MCL	LEVEL FOUND	RANGE	VIOLATION	DATE OF SAMPLE	TYPICAL SOURCE OF CONTAMINATION
Barium (ppm)	2	2	0.057	NA	No	11/03/15	Discharge of drilling waste; Discharge of metal refineries; Erosion of natural deposits.
Copper (ppm)	1.3	AL = 1.3	0.18	ND – 0.224	No	08/17	Corrosion of household plumbing systems.
Alpha emitters (pCi/L)	0	15	2*	NA	No	10/11/16	Erosion of natural deposits
Gross Beta (pCi/L)	0	50**	4.7***	NA	No	10/11/16	Decay of natural & man made deposits
Radium (pCi/L)	0	5	0.4	NA	No	10/11/16	Erosion of natural deposits

**If the results of the sample had been above 5 pCi/L, our system would have been required to do additional testing for radium. Because the results were below 5 pCi/L, no testing for radium was required.*

***The MCL for Gross Beta is 4 mrem/year however EPA considers 50 pCi/L to be the level of concern.*

****Because the beta particle results were below 50 pCi/L, no testing for individual beta particle constituents was required.*

Zero of five (5) samples tested above the copper AL.

We constantly 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.

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.

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

CONTAMINANT	SMCL	LEVEL FOUND	VIOLATION	DATE OF SAMPLE	TYPICAL SOURCE OF CONTAMINATION
Manganese (ppb)	50	60	No	11/03/15	Erosion of natural deposits widely distributed in nature, industrial waste discharge
Iron (ppb)	300	198	No	11/03/15	Erosion of natural deposits; corrosion of plumbing systems
Sulfate (ppm)	250	7.4	No	11/03/15	Erosion of natural deposits widely distributed in nature, industrial waste discharge, fossil fuel by-product

Water samples collected on 11/3/2015 were analyzed for various parameters. The test for iron in the water indicated a level of 198 ppb. The Secondary Maximum Contaminant (SMCL) level for iron is 300 ppb. Testing for manganese indicated a level of 60 ppb. The Secondary Maximum Contaminant Level for manganese is 50 ppb. Iron and manganese are highly objectionable constituents in water supplies for either domestic or industrial use. They may impart brownish discolorations to laundered goods. The taste that they impart to water may be described as bitter or astringent, and may adversely affect the taste of other beverages. Diets contain 7,000 to 35,000 micrograms of iron per day, and average 16, 000 micrograms. The amount of iron and manganese permitted in water by quality control to prevent objectionable taste or laundry staining constitutes only a small fraction of the amount normally consumed and does not have toxicological significance.

There is presently no established standard for sodium in drinking water. Water containing more than 270 ppm should not be used as drinking water by those persons whose physician has placed them on a moderately restricted sodium diet. Water containing more than 20 ppm should not be used as drinking water by those persons whose physician has placed them on a severely restricted sodium diet. For informational purposes, the last analysis show a level of 9.99 ppm of sodium in your water.

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.

SYSTEM ASSESEMENTS FOR TC+

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found.

LEVEL I

During the past year, we were required to conduct one Level 1 assessment. One Level 1 assessment was completed. In addition, we were required to take one corrective action and we completed one of these actions. During the month of April 2017, there were five total Coliform samples taken. Of the five, three samples tested positive. During May 2017, there were six samples taken; of these five samples, only one tested positive. A Level 1 assessment was conducted to try and find the possible reason for the positive samples. The samples for June and July 2017 were taken and they were found absent.

LEVEL II

During the past year, one Level 2 assessment was required to be completed for our water system. One Level 2 assessment was completed. During August 2017, there were six samples taken and two tested positive. A Level 2 assessment was triggered and the Virginia Department of Health conducted the assessment and made suggestions to aid with the sampling problems. In addition, we were required to take corrective action and we are in the process of installing chlorine disinfection. During the months of September through December, 15 samples were taken and two sample tested positive.

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