

Community Systems

Drinking
WATER
Quality

Annual Report

FOR THE YEAR ENDING 2017

INTRODUCTION

Loudoun Water is pleased to present your drinking water quality annual report. The information contained in this report is based on data collected and reported to Virginia Department of Health in 2017, unless otherwise noted. Annual dissemination of this report is required under the federal Safe Drinking Water Act (SDWA). Established to safeguard the quality of drinking water across the United States, the SDWA establishes contaminant level limits in drinking water. These limits are represented in this report as MCLs, or Maximum Contaminant Levels. A glossary of helpful definitions is listed on the following page.

The tables you see in this report provide the actual data collected on your water throughout the year. Data tables on pages 11 through 16 show the quality of the water for customers in each community system.

If you have a question or concern that is not addressed in this report, please contact us at 571-291-7880. Our staff is available to assist you Monday through Friday between 8:00 a.m. and 5:00 p.m. You may also contact us at any time to obtain the latest drinking water quality data. Previous drinking water quality reports and additional water quality information can be found at www.loudounwater.org.

We also invite you to attend our monthly Loudoun Water Board Meetings, which are usually held on the second Thursday of each month in the Boardroom of our Administrative Services Facility, located at 44865 Loudoun Water Way, Ashburn, VA 20147. To learn more about Loudoun Water's Board of Directors, please visit www.loudounwater.org/about.



@loudounwater

HELPFUL DEFINITIONS

Action Level: The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement that a water system must follow.

Maximum Contaminant Level (MCL): The highest level of a contaminant that EPA allows in drinking water. MCLs are set as close to the MCLGs as possible using the best available treatment technology.

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 Residual Disinfectant Level (MRDL): The maximum permissible level of disinfectant residual in drinking water, based on a running annual average.

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.

mrems/year: Millirems per year. A measurement of radiation absorbed by the body.

N/A: Not applicable.

ND: Non-detect. Concentration levels so low they were not detectable.

Ninetieth (90th) Percentile: Represents the highest value found out of 90 percent of the samples taken in a representative group. If the 90th percentile is greater than the action level, it will trigger a treatment or other requirement that a water system must follow. NTU: Nephelometric Turbidity Unit.

pCi/L: Picocuries per liter.

ppb: Parts per billion. One ppb is equal to one microgram per liter. (ug/L)

ppm: Parts per million. One ppm is equal to one milligram per liter. (mg/L)

Total Coliform: Bacteria that indicate whether other potentially harmful bacteria may be present.

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



DEAR LOUDOUN WATER CUSTOMER,

As Loudoun County continues to grow at a rapid pace, Loudoun Water remains committed to providing clean, safe drinking water to all our customers, new and old alike. Water is essential for public health, fire protection, agriculture, economic development and the overall quality of life, which is why our staff take our role in the community so seriously.

I have the privilege of being able to work with and oversee the dedicated staff at Loudoun Water. While day-to-day job responsibilities vary greatly, all Loudoun Water employees share the common goal of providing reliable and dependable water and wastewater services while sustainably managing water resources in advocacy of health, environment and quality of life.

This water quality report serves as a good report card for all of our staff's efforts and provides a good overview of your water quality and the testing results from 2017. If you ever have any questions, comments or concerns about your water quality, please contact our customer relations team at 571-291-7880 or via email at

customerservice@loudounwater.org.

Sincerely,

A handwritten signature in black ink that reads "Carla P. Burleson".

Carla Burleson
General Manager



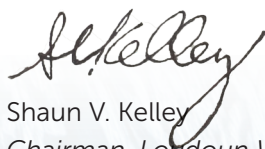
DEAR LOUDOUN WATER CUSTOMER,

It can be easy to take our access to reliable and safe drinking water for granted. So many of us will turn on the faucet and fill up a glass without giving it a second thought of where the water came from, how it was treated or how it travelled all the way to our home. Truth be told, it takes a lot of coordination from individuals both inside and outside of the organization to make everything run as smoothly as possible.

In the past year, Loudoun Water has welcomed hundreds of area students to visit our headquarters and learn more about how their drinking water and wastewater is treated. Staff had the pleasure of viewing numerous projects from elementary, middle and high school students that were developed after touring our interactive exhibit, The Aquuary. It is energizing to see students so young be so involved and interested in the efforts it takes to treat drinking water.

I encourage you to be inspired by the motivation of these students in your community and take a moment to read through this report so that you too can have a better understanding of how your water is treated.

Sincerely,

A handwritten signature in black ink, appearing to read 'S. Kelley'. The signature is fluid and cursive, written over a light blue background that features a faint, artistic rendering of water splashing over rocks.

Shaun V. Kelley
Chairman, Loudoun Water Board of Directors

ABOUT LOUDOUN WATER

It is Loudoun Water's mission to sustainably manage water resources in advocacy of health, environment and quality of life. We pledge to bring our customers clean, healthy water that is safe to drink.

To do this, Loudoun Water maintains over 1,250 miles of water distribution pipelines, over 900 miles of wastewater collection system pipelines and a growing reclaimed non-potable water system.

Loudoun Water is a political subdivision of the State and is not a department of Loudoun County. This means all Loudoun Water income is received either as user fees from customers, which go towards operating expenses or as developer fees which are used to pay for capital improvements.

Loudoun Water is governed by a Board consisting of nine members appointed by the Board of Supervisors. The Board members serve four year terms and can be reappointed by the County. The Board appoints the General Manager, who is responsible for the daily management of Loudoun Water.

Loudoun County is a rapidly growing jurisdiction located in the northern tip of the Commonwealth of Virginia approximately 25 miles northwest of Washington, D.C. Loudoun County contains 517 square miles, making it one of the largest counties in the region. It has been one of the fastest growing counties in the country over the past decade. The County is expected to continue to have one of the highest population and employment growth rates in the entire Washington region over the next 20 years. Loudoun Water continues to plan for this growth, which is outlined in our Capital Improvement Plan.



SOURCE WATER ASSESSMENT

A Virginia Department of Health source water assessment for all groundwater systems served by Loudoun Water determined them to be highly susceptible to contamination using the state source water assessment program criteria. This assessment report consists of maps showing the source water area, an inventory of known land using activities of concern and documentation of any known contaminants. Additional information about these reports can be obtained by contacting us at 571-291-7880.

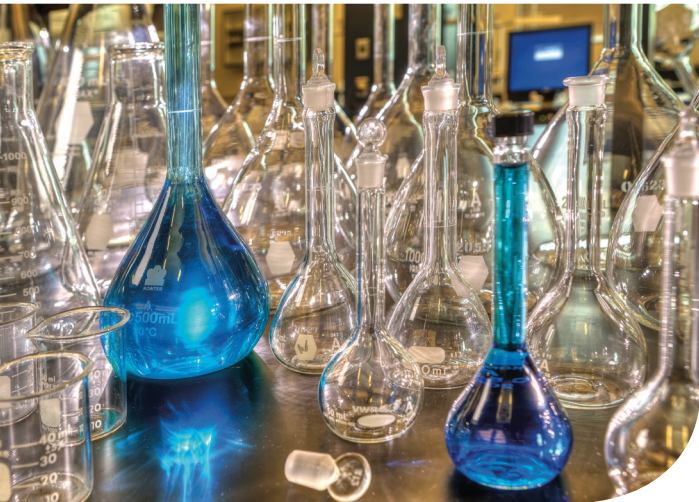
WHAT IS IN YOUR WATER?

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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency (EPA) Safe Drinking Water Hotline at 800-426-4791. 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 radioactive material and can pick up substances resulting from the presence of animals or human activity. Contaminants that may be present in the water include:

- Microbes (viruses or bacteria) from septic systems, agricultural livestock operations, wildlife and wastewater treatment plants
- Inorganics, such as salts and metals, which can occur naturally or result from storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming
- Pesticides and herbicides from agriculture, urban runoff and residential uses
- Organics, like 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, either naturally occurring or the result of oil and gas production or mining activities

WHAT DO WE TEST FOR?



The Safe Drinking Water Act of 1974 (SDWA), which has been amended most significantly in 1986 and 1996, governs drinking water quality. It sets the limits for contaminants in drinking water. These limits are represented in this report as MCLs, or the Maximum Contaminant Levels. The Food and Drug Administration (FDA) establishes limits for contaminants in bottled water, which must provide the same protection for public health as tap water.

Under the SDWA, Loudoun Water is required to test for the presence of a number of organisms and chemicals. We submit the results to the Virginia Department of Health.

- Bacteriological analysis of the treated water is a monitoring requirement. The analysis is reported based on the presence or absence of total and Escherichia coliform.
- Bacteriological analysis of the untreated water (raw water) varies from a monthly to yearly monitoring requirement. This analysis is an important indicator of raw water quality and can trigger additional treatment requirements.
- Volatile Organic Compounds is a test for 56 different chemicals such as fuel derivatives and solvents. The analysis is initially performed quarterly and is reduced to annually and eventually every three years as repeated results show no detections of the chemicals.
- Radiological analyses are performed for alpha and beta emitters, as well as for radium 226 and 228. Samples are initially conducted quarterly and may eventually be reduced to once every six years after sufficient data shows low levels of results.
- Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5) are disinfection byproducts that can form in the water supply as chlorine reacts with organic matter. When ingested in large quantities, these chemicals are suspected human carcinogens, so we monitor for them closely. The legal limit for TTHMs is an annual average of 80 parts per billion (ppb). For HAA5 the limit is an annual average of 60 ppb. They are initially measured annually in small groundwater systems and eventually reduced to every three years.
- Lead and copper are measured at the point of use (generally a homeowner's kitchen sink). In small community water systems, five to 10 homes are sampled initially every six months. The frequency of sample collection is reduced to annually and subsequently to three years based upon consistently meeting the action limit.
- Nitrite and nitrate analysis is performed annually. The combined concentration of nitrate and nitrite may not exceed 10 ppm.
- Inorganics and metals are analyzed every three years in groundwater systems to assure that none of the parameters exceed the respective MCLs.

LEAD IN DRINKING WATER

WHAT IS THE EPA STANDARD FOR LEAD IN DRINKING WATER?

EPA has established an Action Level for lead in water of 15 parts per billion. When lead testing is performed as required by EPA, 90 percent of the samples must contain less than 15 ppb. This is usually referred to as the 90th percentile results being less than 15 ppb. The Action Level was not designed to measure health risks from water represented by individual samples. Rather, it is a statistical trigger value that, if exceeded, may require more treatment, public education, and possibly lead service-line replacement where such lines exist. (Loudoun Water does not have any lead service lines in its system.)

WHERE DOES LEAD IN DRINKING WATER COME FROM?

Loudoun Water's raw water sources do not contain lead. In 1986, lead was banned from being used in pipe and solder in home construction. In older homes, where lead is present in pipe and solder connections, it may dissolve into the water after the water sits for long periods of time.

WHAT CAN I DO IN MY HOME TO REDUCE EXPOSURE TO LEAD IN THE DRINKING WATER?

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. Loudoun Water is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components in home construction. 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, or until it becomes cold or reaches a steady temperature before using the water for drinking or cooking. Use only cold water for drinking, cooking and making baby formula.

If you are concerned about lead in your water, you may wish to have your water tested. Information about lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at www.epa.gov/safewater/lead or 800-426-4791.

Some people choose to install filters in their homes. If you choose to use a water filter, follow these three rules:

1. Choose one designed for the specific filtration desired (chlorine, lead, *Cryptosporidium*, etc.).
2. Make sure the filter is approved by the National Sanitation Foundation (www.nsf.org).
3. Maintain the filter as directed.



ARE YOU VULNERABLE TO CONTAMINANTS?

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/Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infections by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

WATER QUALITY ANALYSIS AND RESULTS

We constantly monitor for various components in the water supply to meet all regulatory requirements. The following tables list only those components that are regulated and had some level of detection. If you have a question about a component not seen here, call us at 571-291-7880.

HOW IS YOUR WATER TREATED?

Your water is treated with chlorine for disinfection. Iron and manganese treatment occurs at Beacon Hill and Selma Estates due to the natural presence of iron and manganese in these ground water supplies. At Raspberry Falls and Selma Estates, corrosion control in the water system is provided by adding phosphoric acid. Fluoride is added to the Selma Estates and Village Green at Elysian Heights water systems. In 2014, a membrane filtration system was added to Selma Estates to improve water supply capacity.

WHERE DOES YOUR WATER COME FROM?

Groundwater is supplied by wells located within the development:

- Beacon Hill – Two wells
- Raspberry Falls – Two wells (through June 2017)
- The Reserve at Rokeby – Four wells
- Village Green at Elysian Heights – Five wells (one of which is an emergency well if needed)
- Selma Estates– Four wells
- Creighton Farms– Two wells

WATER QUALITY IN BEACON HILL

Data collected in 2017 unless otherwise noted

Microbials	Highest Result	MCL		MCLG	Typical Source	Violation
Total Coliform Bacteria	0	TT		N/A	Naturally present in environment	No
<i>E. coli</i> Bacteria	0	Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> .		0	Human and animal fecal waste	No
Disinfectant By-Products	Level detected	MCL		MCLG	Typical Source	Violation
Total Trihalomethanes (ppb)	20.8	80		N/A	By-product of drinking water disinfection	No
Haloacetic Acids (ppb)	7.1	60		N/A	By-product of drinking water disinfection	No
Disinfectant	Highest Quarterly Running Annual Average	MRDL		MRDLG	Typical Source	Violation
	Range					
Chlorine (ppm)	1.33	4		4	Water additive used to control microbes	No
	0.79 – 1.62					
Inorganics and Metals	Level Detected	MCL		MCLG	Typical Source	Violation
Barium (ppm)	0.28	2		2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	No
Fluoride (ppm)	0.1	4.0		4.0	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories	No
Radiologicals	Level Detected	MCL		MCLG	Typical Source	Violation
Combined Radium 226 and 228 (pCi/L) ¹	0.806	5		0	Erosion of natural deposits	No
Metal Components	90th Percentile Level	Action Level	MCLG	Number Of Sites Above Action Level	Typical Source	Violation
Copper (ppm)	0.13	1.3	1.3	0	Corrosion of household plumbing	No
Lead (ppb)	1.2	15	0	0	Corrosion of household plumbing	No

¹ Samples taken in 2016.

WATER QUALITY IN VILLAGE GREEN AT ELYSIAN HEIGHTS

Data collected in 2017 unless otherwise noted

Inorganics and Metals	Level Detected	MCL	MCLG	Typical Source	Violation	
Nitrate/Nitrite [as Nitrogen] (ppm)	3.95	10	10	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits	No	
Arsenic ¹ (ppb)	1.1	10	0	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes		
Barium ¹ (ppm)	0.14	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	No	
Fluoride (ppm)	Average 0.66 Range 0.54 – 0.80	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	No	
Microbials	Highest Result	MCL	MCLG	Typical Source	Violation	
Total Coliform Bacteria	0	TT	N/A	Naturally present in environment	No	
<i>E. coli</i> Bacteria	0	Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> .		Human and animal fecal waste	No	
Disinfectant By-Products	Highest Result	MCL	MCLG	Typical Source	Violation	
	Range					
Total Trihalomethanes (ppb)	19.7	80	N/A	By-product of drinking water disinfection	No	
Haloacetic Acids (ppb)	6.6	60	N/A	By-product of drinking water disinfection	No	
Disinfectant	Highest Quarterly Running Annual Average	MRDL	MRDLG	Typical Source	Violation	
	Range					
Chlorine (ppm)	1.27 0.91 – 1.97	4	4	Water additive used to control microbes	No	
Radiologicals	Level Detected	MCL	MCLG	Typical Source	Violation	
Uranium (ppb) ²	2.54	30	0	Erosion of natural deposits	No	
Metal Components	90th Percentile Level	Action Level	MCLG	Number Of Sites Above Action Level	Typical Source	Violation
Copper (ppm)	0.49	1.3	1.3	0	Corrosion of household plumbing	No
Lead (ppb)	1.0	15	0	0	Corrosion of household plumbing	No

¹ Samples taken in 2016

² Samples taken in 2014

WATER QUALITY IN RASPBERRY FALLS (JANUARY – JUNE 2017*)

Data collected in 2017 unless otherwise noted

Inorganics and Metals	Level Detected	MCL	MCLG	Typical Source	Violation	
Nitrate/nitrite [as nitrogen] (ppm)	3.27	10	10	Runoff from fertilizer; leaching from septic tanks, erosion of natural deposits	No	
Fluoride ¹ (ppm)	0.057	4	4	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories	No	
Barium ¹ (ppm)	0.049	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	No	
Microbials	Highest Result	MCL	MCLG	Typical Source	Violation	
Total Coliform Bacteria	0	TT	N/A	Naturally present in environment	No	
<i>E. coli</i> Bacteria	0	Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> .	0	Human and animal fecal waste	No	
Disinfectant	Highest Quarterly Running Annual Average	MRDL	MRDLG	Typical Source	Violation	
	Range					
Chlorine (ppm)	1.78	4	4	Water additive used to control microbes	No	
	1.49 – 2.31					
Disinfectant By-Products	Highest Result	MCL	MCLG	Typical Source	Violation	
Total Trihalomethanes (ppb) ³	20.3	80	N/A	By-product of drinking water disinfection	No	
Haloacetic Acids (ppb) ³	7.4	60	N/A	By-product of drinking water disinfection	No	
Radiologicals	Level Detected	MCL	MCLG	Typical Source	Violation	
Combined Radium 226/228 ² (pCi/L)	0.546	5	0	Erosion of natural deposits	No	
Metal Components	90th Percentile Level	Action Level	MCLG	Number Of Sites Above Action Level	Typical Source	Violation
Copper ¹ (ppm)	0.1	1.3	1.3	0	Corrosion of household plumbing	No
Lead ¹ (ppb)	ND	15	0	0	Corrosion of household plumbing	No

¹Sample taken in 2015.

²Sample taken in 2013.

³Sample taken in 2016

* July – December 2017 water quality refer to Selma Estates report on page 15.

WATER QUALITY IN THE RESERVE AT ROKEBY

Data collected in 2017 unless otherwise noted

Inorganics and Metals	Level Detected	MCL	MCLG	Typical Source	Violation	
Nitrate/nitrite [as nitrogen] (ppm)	3.46	10	10	Runoff from fertilizer; leaching from septic tanks, erosion of natural deposits	No	
Arsenic (ppb)	1.5	10	0	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes	No	
Barium (ppm)	0.11	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	No	
Selenium (ppb)	2.7	50	50	Discharge from petroleum and metals refineries; Erosion of natural deposits; Discharge from mines.	No	
Microbials	Highest Result	MCL	MCLG	Typical Source	Violation	
Total Coliform Bacteria	0	TT	N/A	Naturally present in environment	No	
<i>E. coli</i> Bacteria	0	Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> .	0	Human and animal fecal waste	No	
Disinfection By-Products	Level Detected	MCL	MCLG	Typical Source	Violation	
Total Trihalomethanes (ppb)	2.0	80	N/A	By-product of drinking water disinfection	No	
Haloacetic Acids (ppb)	ND	60	N/A	By-product of drinking water disinfection	No	
Disinfectant	Highest Quarterly Running Annual Average	MRDL	MRDLG	Typical Source	Violation	
	Range					
Chlorine (ppm)	1.31 0.92 – 1.77	4	4	Water additive used to control microbes	No	
Radiologicals	Level Detected	MCL	MCLG	Typical Source	Violation	
Radium 226 and 228 ¹ (pCi/L)	0.2	5	0	Erosion of natural deposits	No	
Alpha emitters ¹ (pCi/L)	2.3	15	0	Erosion of natural deposits	No	
Beta/photon emitters ^{1,2} (pCi/L)	2.5	50	0	Decay of natural and man-made deposits	No	
Metal Components	90th Percentile Level	Action Level	MCLG	Number Of Sites Above Action Level	Typical Source	Violation
Copper (ppm)	0.026	1.3	1.3	0	Corrosion of household plumbing	No
Lead (ppb)	ND	15	0	0	Corrosion of household plumbing	No

¹ Samples taken in 2012.

² The MCL for Beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for Beta particles.

WATER QUALITY IN SELMA ESTATES

Data collected in 2017 unless otherwise noted

Inorganics and Metals	Highest Result/ Level Detected	MCL	MCLG	Typical Source	Violation	
Nitrate/nitrite [as nitrogen] (ppm)	1.89	10	10	Runoff from fertilizer; leaching from septic tanks, erosion	No	
Barium (ppm) ¹	0.068	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	No	
Fluoride (ppm)	Average 0.77 Range 0.5 – 1.5	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	No	
Microbials	Highest Result	MCL	MCLG	Typical Source	Violation	
Total Coliform Bacteria	0	TT	N/A	Naturally present in environment	No	
<i>E. coli</i> Bacteria	0	Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> .	0 † ‡	Human and animal fecal waste	No	
Disinfectant By-Products	Level Detected	MCL	MCLG	Typical Source	Violation	
Total Trihalomethanes (ppb)	ND	80	N/A	By-product of drinking water disinfection	No	
Haloacetic Acids (ppb)	ND	60	N/A	By-product of drinking water disinfection	No	
Disinfectant	Highest Quarterly Running Annual Average	MRDL	MRDLG	Typical Source	Violation	
	Range					
Chlorine (ppm)	2.08 1.69 – 2.57	4	4	Water additive used to control microbes	No	
Radiologicals	Highest Result	MCL	MCLG	Typical Source	Violation	
Radium 226 and 228 (pCi/L) ¹	0.307	5	0	Erosion of natural deposits	No	
	ND – 0.307					
Uranium (ppb) ¹	0.275	30	0	Erosion of natural deposits	No	
	ND – 0.275					
Metal Components	90th Percentile Level	Action Level	MCLG	Number Of Sites Above Action Level	Typical Source	Violation
Copper (ppm) ²	0.12	1.3	1.3	0	Corrosion of household plumbing	No
Lead (ppb) ²	ND	15	0	0	Corrosion of household plumbing	No

¹ Sample taken in 2014.

² Sample taken in 2016.

WATER QUALITY IN CREIGHTON FARMS

Data collected in 2017 unless otherwise noted

Inorganics and Metals	Level Detected	MCL	MCLG	Typical Source	Violation	
Nitrate/nitrite [as nitrogen] (ppm)	1.33	10	10	Runoff from fertilizer; leaching from septic tanks, erosion	No	
Arsenic (ppb) ¹	2.1	10	0	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes	No	
Barium (ppm) ¹	0.16	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	No	
Fluoride (ppm) ¹	0.15	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	No	
Microbials	Highest Result	MCL	MCLG	Typical Source	Violation	
Total Coliform Bacteria	0	TT	N/A	Naturally present in environment	No	
<i>E. coli</i> Bacteria	0	Routine and repeat samples are total coliform-positive and either is <i>E. coli</i> -positive or system fails to take repeat samples following <i>E. coli</i> -positive routine sample or system fails to analyze total coliform-positive repeat sample for <i>E. coli</i> .	0	Human and animal fecal waste	No	
Disinfectant By-Products	Level Detected	MCL	MCLG	Typical Source	Violation	
Total Trihalomethanes (ppb)	7.9	80	N/A	By-product of drinking water disinfection	No	
Haloacetic Acids (ppb)	ND	60	N/A	By-product of drinking water disinfection	No	
Disinfectant	Highest Quarterly Running Annual Average	MRDL	MRDLG	Typical Source	Violation	
	Range					
Chlorine (ppm)	1.24 0.6 – 1.50	4	4	Water additive used to control microbes	No	
Radiologicals	Highest Result	MCL	MCLG	Typical Source	Violation	
	Range					
Radium 226 and 228 ² (pCi/L)	0.4 ND – 0.4	5	0	Erosion of natural deposits	No	
Alpha emitters ² (pCi/L)	2.3 ND – 2.3	15	0	Erosion of natural deposits	No	
Beta/photon emitters ^{2,3} (pCi/L)	3.2 ND – 3.2	50	0	Decay of natural and man-made deposits	No	
Metal Components	90th Percentile Level	Action Level	MCLG	Number Of Sites Above Action Level	Typical Source	Violation
Copper (ppm)	0.29	1.3	1.3	0	Corrosion of household plumbing	No
Lead (ppb)	5.2	15	0	0	Corrosion of household plumbing	No

¹ Sample taken in 2015.

² Sample taken in 2012

³ The MCL for Beta particles is 4mrem/year. The EPA considers 50 pCi/L to be the level of concern for Beta particles

WHAT ARE COMMUNITY SYSTEMS?

Community Water and Wastewater Systems are free standing water and wastewater systems whereby water may be supplied to a rural village or hamlet by its own community well and wastewater may be treated in the village/hamlets by the village's own packaged treatment facility. Highly treated wastewater (effluent) is discharged in most cases on site or, in a few cases, to local streams/rivers.

CURRENT COMMUNITY SYSTEMS MANAGED BY LOUDOUN WATER INCLUDE:

- Beacon Hill
- Courtland Rural Village
- Creighton Farms
- Raspberry Falls (Raspberry Falls combined with Selma Estates as one water system in June 2017)
- Selma Estates
- The Reserve at Rokeby
- Village Green at Elysian Heights

Information regarding each community system can be found on the Loudoun Water website at www.loudounwater.org.

IMPORTANCE OF CONSERVATION FOR COMMUNITY SYSTEM USERS

While conservation is important for all customers, it is imperative that Community System users are responsible and good stewards of water resources. In the Central System, the focus of conservation efforts is on a reduction of peaks and max days and minimizing water waste. In the Community Systems, the focus is on overall daily demand reductions due to the more limited nature of the groundwater supply. These water systems must be managed prudently due to permitted capacity in each community.

LANDSCAPING WITHOUT IRRIGATION

While Community System capacities are limited in nature for excessive watering, it is still possible to have an eye-catching garden. The practice of water-smart landscaping allows homeowners to plan and maintain landscapes in an attractive way that requires less maintenance and less water. Key tips to remember when it comes to water-smart landscaping are:

- Choose plants that require less water. Check with your local nursery to see which plants they recommend based on watering requirements.
- Group plants according to their watering needs. Grouping plants in "hydrozones," helps to reduce water usage as well as allowing you to water each zone's specific needs.
- Maintain healthy soils. This helps to effectively cycle nutrients, minimizes runoff, retains water, and absorbs excess nutrients, sediments and pollutants.
- Be very selective when adding turf areas. To improve the aesthetic of your landscape and better manage outdoor water use, plant turf only where there is a practical function.
- Water wisely. Understand your plant's water needs and always avoid watering during the heat of the day.
- Use mulch. Mulch helps to reduce evaporation, inhibits weed growth, moderates soil temperature, and helps to prevent erosion.
- Provide regular maintenance. Replace mulch around shrubs and garden plants at least once per year, and remove weeds and thatch as necessary.

SOURCE WATER PROTECTION

Source water is untreated water from lakes, rivers, streams, ponds, reservoirs, aquifers, and springs that serve as a community's water source. Protecting these water sources is an easy way to prevent drinking water from becoming polluted by managing possible sources of contamination.

HOW DOES SOURCE WATER PROTECTION BENEFIT ME?

1. **Public health protection:** Reduced threats to public health due to acute or chronic illness from exposure to contaminated water.
2. **Economic benefits:** Minimizes cost for water treatment, emergency replacement water and finding new supplies.
3. **Environmental stewardship:** Protection of rural lands, wildlife habitats, recreational areas and water quality of streams and wetlands.

HOW YOU CAN HELP PROTECT SOURCE WATER:

- Pick up after your pet.
- Refrain from swimming in known drinking water sources.
- Never dump anything in creeks or lakes.
- If you like boating, only participate in passive boating such as rowing, canoeing or kayaking instead of motorized boating.
- Compost yard waste and use natural fertilizers.
- Plant trees along creeks.
- Check and repair vehicle fluid levels.
- Properly dispose of household cleaning products, paint, fertilizers, pesticides and expired/unused medications.

VISIT US!

Partnering with area organizations, schools, community members and customers allows Loudoun Water staff to share their knowledge about water and wastewater treatment, conservation, wetlands and more. In 2017 Loudoun Water welcomed more than 60 different groups of local students for a free guided tour of our exhibits.

Located inside of our Administrative Services Facility in Ashburn is an interactive educational center with over 3,500 square feet of indoor exhibits and nearly one mile of outdoor trails. Come explore "The Aquary" on your own or let Loudoun Water guide you. School groups, community organizations and HOAs are all welcome to schedule a tour. Call us at 571-291-7880 for more information or visit our website at www.loudounwater.org.

TAP WATER FOR FISH TANKS

Customers will need to treat tap water before using it in a fish aquarium because drinking water contains free chlorine and chloramines to inhibit bacterial growth. These disinfectants can harm fish. Check with a local pet store to learn what types of chemicals you need to add to the tank to neutralize the effects of the disinfectants.

MAKING EVERY DROP COUNT

The U.S. Environmental Protection Agency's WaterSense® program helps identify a range of certified products that help you use water more wisely as well as save money on your bill. Visit the WaterSense website at www.epa.gov/watersense to learn more about what you can do to make every drop count.

Looking for other ways to save? Visit our website at www.loudounwater.org for some creative ways to optimize your water use in the bathroom, kitchen, laundry room and more!



www.loudounwater.org

44865 Loudoun Water Way
PO Box 4000
Ashburn, VA 20146

(571) 291-7880 Customer Relations
(571) 291-7700 Administration
(571) 291-7878 After-Hours Emergencies

Have a question about this report?
www.loudounwater.org/contactus

LW Connect self-service customer portal
www.lwconnect.org

Miss Utility / VA 811
www.va811.com
Dial 811 in Virginia or 1-800-552-7001

LET'S KEEP IN TOUCH

Join over 15,000 people who receive our newsletter, On Tap! Each issue includes service updates, seasonal tips and other Loudoun Water highlights.

To sign up, visit www.loudounwater.org.



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