

2023 Annual Drinking Water Quality Report

Mountain Lakes Water Company PWSID# 2079590

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2023 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: Mr. Larry Lamb, at (434) 985-7504.

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

The source of your drinking water is obtained from thirteen (13) active drilled wells. Your drinking water is groundwater obtained from wells located in Twin Lakes Subdivision and wells located in Greene Mountain Lake Subdivision. Storage facilities are located in both subdivisions. The water is treated with chlorine for disinfection. Additional treatment is provided to control naturally occurring iron and manganese in our well sources.

The Virginia Department of Health conducted a source water assessment of our system. 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 Mr. Larry Lamb, at the phone number or address provided elsewhere in this drinking water quality report.

DEFINITIONS

In the data 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.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) – one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

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.

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

QUALITY OF YOUR DRINKING WATER

Your drinking water is routinely monitored according to Federal and State Regulations for a variety of contaminants. The tables on the next pages show the results of our monitoring for the period of January 1st to December 31st, 2023. 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 tables, though accurate, is more than one year old.

The U.S. Environmental Protection Agency sets MCL's 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-a-million chance of having the described health effect for other contaminants.

WATER QUALITY RESULTS

Microbiological Contaminants

Contaminant	MCLG	MCL	No. of Samples Indicating Presence of Bacteria	Violation (Y/N)	Month of Sampling	Typical Source of Contamination
Total Coliform	0	Presence of coliform bacteria in no more than one sample each month	1 1	N N	June 2023 Nov. 2023	Coliforms are bacteria that are naturally present in the environment and are used as

Regulated Contaminants

Contaminant (units)	MCLG	MCL	Level Detected	Violation (Y/N)	Sampling Year	Typical Source of Contamination
Nitrate (mg/l)	10	10	1.66 Range: ND – 1.66	N	2023	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride (mg/l)	4	4	0.28 Range: ND – 0.28	N	2023	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Barium (mg/l)	2	2	0.098 Range: ND – 0.098	N	2019, 2020, 2023	Discharge of drilling waste; Discharge from metal refineries; Erosion of natural deposits
Alpha Emitters (pCi/l)	0	15	5.3 Range: ND – 5.3	N	2018, 2022, 2023	Erosion of natural deposits
Beta Particle and Photon Radioactivity (pCi/l)*	0	50	7.3 Range: 2.6 – 7.3	N	2018, 2022, 2023	Decay of natural and man-made deposits
Combined Radium (pCi/l)	0	5	1.7 Range: 0.2 – 1.7	N	2018, 2022, 2023	Erosion of natural deposits

*The PMCL for beta particles is 4 mrem/year. EPA considers 50 pCi/l to be the level of concern for beta particles.

Unregulated Contaminants

Contaminant (units)	MCLG	MCL	Level Detected	Violation (Y/N)	Sampling Year	Typical Source of Contamination
Sodium (mg/l)	NA	NA	13.1 Range: 4.96 - 13.1	N	2019, 2020, 2023	Erosion of natural deposits; de-icing salt runoff; water softeners

Lead and Copper Contaminants

Contaminant (units)	MCLG	MCL or TT	90 th Percentile	AL Exceeded	Samples >AL	Sampling Year	Typical Source of Contamination
Lead (ppb)	0	AL = 15	<2	No	0	2021	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	1.3	AL = 1.3	0.305	No	0	2021	Corrosion of household plumbing systems; Erosion of natural deposits

Disinfectant Residual

Disinfectant (units)	MRDLG	MRDL	Level Found Range	Violation (Y/N)	Sampling Year	Typical Source of Contamination
Free Chlorine (mg/l)	4	4	1.59 Range: 0.87-1.59	N	2023	Water additive used to control microbes

ADDITIONAL HEALTH INFORMATION FOR LEAD IN 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. Mountain Lakes Water Company 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 to two minutes 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 (800-426-4791).

ADDITIONAL HEALTH INFORMATION FOR SODIUM IN DRINKING WATER

There is presently no established standard for sodium in drinking water. An EPA advisory recommends water containing 30 to 60 mg/L should not be used as drinking water due to esthetics such as taste and color. Water containing more than 20 mg/L should not be used by persons whose physician has placed them on severely restricted sodium diets.

VIOLATION INFORMATION

Our water system violated several drinking water regulations or standards in 2023. Even though these events were not an emergency, as our consumers you have a right to know what happened and what we did to correct each situation. We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards.

Failure to Perform and Submit a Level 1 Assessment on time:

One of two samples collected on June 21, 2023, indicated the presence of coliform bacteria. Whenever coliform bacteria are detected in a routine sample, follow-up testing is required to be conducted to determine if other bacteria of greater concern, such as E. coli, are present. As a result of the routine distribution system bacteriological sample being total coliform positive, we were required to collect additional samples in the location of the positive sample. We did not perform the additional monitoring and, therefore, cannot be sure of the well water quality of our groundwater sources during that time. Because the samples were not collected, an Assessment of the waterworks was then required to be performed by us, the Mountain Lakes Water Company. The Assessment was due by August 24, 2023, to be submitted to VDH. However, we did not perform or provide the Assessment to VDH on time. **[VDH personnel met with us on site in early August for evaluation and it was a misunderstanding on our part that the Level 1 Assessment was still required]**

What we did to correct the situation: We completed the Assessment (evaluation) in December 2023.

Zero or Negative System Pressure at Waterworks:

We were issued a violation and Boil Water advisory due to a service interruption and complete loss of water pressure that began on or about the morning of November 11, 2023, and the possibility of the presence of E. coli bacteria from infiltration into the distribution system. The Virginia Department of Health was notified of the water pressure issues on November 13, 2023.

A Tier 1 violation occurred, because public water suppliers are required, pursuant to 12VAC5-590-540 C 1 b of the Regulations, to initiate consultation with the Office of Drinking Water within 24 hours of learning of Boil Water situation.

What we did to correct the situation: We have updated our emergency plan document and now have direct contact with the Office of Drinking Water

emergency coordinator in the event of another zero or negative pressure in the system.

Failure to Perform Groundwater (Triggered) Source Water Monitoring:

One of two samples collected on June 21, 2023, indicated the presence of coliform bacteria. Whenever coliform bacteria are detected in a routine sample, follow-up testing is conducted to determine if other bacteria of greater concern, such as E. coli, are present. As a result of the routine distribution system bacteriological sample being total coliform positive, we were required to collect samples directly from our wells serving the location of the positive sample. We did not perform the well monitoring and, therefore, cannot be sure of the well water quality of our groundwater sources during that time.

What we did to correct the situation: We have subsequently collected samples from the wells which show no bacteria present. We will collect all required samples on time.

[These samples were not taken as a result of not being notified in time by VDH or the State Lab that a sample triggered these sample requirements. Of the two samples taken with the 1 indicating Total Coliform + , both were tested for E.coli and were both negative for E.coli]

Failure to Monitor for Disinfectant Residual:

State Health Officials have advised us of a failure to perform required monitoring in accordance with the Virginia Waterworks Regulations. We are required to monitor your drinking water for specific contaminants on a regular basis. During the June 2023 monitoring period, we were required to measure the chlorine residual when collecting five (5) bacteriological samples. We only measured the chlorine residual in two (2) samples. Therefore, we cannot be sure of the quality of our drinking water during that time. Five (5) chlorine residual measurements were required in June 2023, and two (2) were performed.

What we did to correct the situation: We have subsequently collected the required samples. We will collect all required samples on time.

[Only 2 samples were measured because the required 3 repeats were not taken as a result of not being notified in time by VDH or the State Lab that 1 of the 2 routines triggered a repeat requirement. This is related to the failure to perform groundwater (Triggered) source water monitoring stated above.]

This Drinking Water Quality Report was prepared by Mountain Lakes Water Company with the assistance and approval of the Virginia Department of Health. All reportable data for the water system can be searched in the public Drinking Water Viewer (DWV) by accessing the portal at <http://www.vdh.virginia.gov/drinking-water/dwv/>.

Please call if you have questions.

Signature: _____

Date: _____