

2023 CITY OF BOULDER

Drinking Water Quality Report

The City of Boulder 2023 Drinking Water Quality Report summarizes water quality testing results from the 2022 calendar year. The city's goal is to provide customers with safe and high-quality drinking water.



Este informe contiene información importante sobre su agua potable. Lea este informe en línea en español escaneando el código QR arriba o visitando bouldercolorado.gov/services/drinking-water-quality.

LEARN MORE ABOUT BOULDER'S WATER

If you have any questions about this report, please contact the city's Drinking Water Program at 303-441-3200 or the Colorado Department of Public Health and Environment (CDPHE) at 303-692-3500. For more information about Boulder's water, visit bouldercolorado.gov/services/drinking-water-quality or submit a question to inquireboulder.com.

The City of Boulder's Water Resources Advisory Board meetings are additional opportunities for the public to learn about Utilities projects and programs. Board meetings are usually held the third Monday of each month at 6 p.m. and may be held virtually or in-person. For more information about the board, call 303-441-3208 or visit bouldercolorado.gov/government/boards-and-commissions.

CITY OF BOULDER WATER SOURCES

The City of Boulder is fortunate to have several high quality surface water sources for drinking water: Barker Reservoir, North Boulder Creek and Carter Lake. Water used at your home or business may come from any of these sources, depending on the season or availability. Source water protection has long been recognized as a necessary and often cost-effective component of providing clean, safe drinking water. The city closely monitors activities that could affect source water and impact drinking water. The city's Source Water Protection Plan is available at bouldercolorado.gov/services/water-supply-and-planning or on request by calling the Drinking Water Program at 303-441-3200. The protection plan identifies potential contaminant sources that could occur (which does not mean they do occur) and best management practices to protect the city's water supply at its source.



**City of Boulder
Utilities**

Digital copies of this report can be found by visiting bouldercolorado.gov/water/water-report. Federal regulations require that this report be distributed to all City of Boulder water customers.

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GENERAL INFORMATION ABOUT DRINKING WATER

All 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 Safe Drinking Water Hotline (800-426-4791). Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised people, such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, have HIV-AIDS or other immune system disorders, some elderly, and infants can be particularly at risk of infections. These people should seek advice about drinking water from their health care providers. Environmental Protection Agency (EPA) and U.S. Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

Sources of drinking water include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances associated with animals or humans. Contaminants that may be present in source water include:



Organic Chemical Contaminants including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production and also may come from gas stations, urban stormwater runoff and septic systems.



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 & Herbicides that may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.



Radioactive Contaminants that can be naturally occurring or be the result of oil and gas production and mining activities.



Microbial Contaminants such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

To ensure that tap water is safe to drink, the CDPHE prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

LEAD TESTING INFORMATION

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water comes primarily from materials and components associated with service lines and home plumbing. The City of Boulder is responsible for providing high-quality drinking water, but cannot control the variety of materials used in private plumbing components. Boulder implements a Corrosion Control Program that treats tap water to make it less corrosive and reduce lead exposure from home plumbing.

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 Environmental Protection Agency at [tinyurl.com/EPASafeDrinkingWater](https://www.epa.gov/safewater/lead).

The CDPHE has placed the City of Boulder on a reduced monitoring schedule (every three years) for lead and copper, because the city has demonstrated low lead and copper concentrations for three consecutive years. The most recent samples were collected in 2021. A result summary is listed in the 2022 Drinking Water Quality Data section.

DRINKING WATER QUALITY DATA

The City of Boulder routinely monitors for constituents in drinking water according to federal and state laws. The data presented in this report (see following page) are the result of monitoring for the period of January 1 to December 31, 2022, or from the most recent testing done in accordance with regulations. The CDPHE does not require the City of Boulder to monitor all constituents each year, because the concentrations of some constituents are not expected to vary significantly from year to year or because the City of Boulder's system is not considered vulnerable to that type of constituent. Therefore, some of the data, though representative, may be more than one year old.

TERMS AND ABBREVIATIONS

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

Locational Running Annual Average (LRAA): The average of sample results for samples collected at a particular monitoring location during the most recent four calendar quarters.

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 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 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 Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant, below which there is no known or expected risk to health.

Not Established (NE)

Nephelometric Turbidity Units (NTU)

Parts Per Billion (ppb), or micrograms per liter ($\mu\text{g}/\text{l}$)

Parts Per Million (ppm), or milligrams per liter (mg/l)

Running Annual Average (RAA): An average of monitoring results for the previous 12 calendar months or previous four quarters.

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

Constituents Detected

Constituent	Units	MCL	MCLG	Result	Violation (Yes / No)	Sample Date	Typical Source of Constituent
Barium	ppm	2	2	Average: 0.01 Range: 0.01 - 0.02	No	2022	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chlorine	ppm	MRDL = 4	MRDLG = 4	Average: 0.87 Range: 0.34 - 1.33	No	At least 120 samples per month in 2022	Water additive used to control microbes
Fluoride	ppm	4	4	Average: 0.67 Range: 0.64 - 0.69	No	2022	Erosion of natural deposits; water additive which promotes strong teeth
Sodium (not regulated)	ppm	NE	NE	Average: 5.1 Range: 3.1 - 7.1	No	2022	Erosion of natural deposits

Constituent	Units	TT Requirement	Result	Violation (Yes / No)	Sample Date	Typical Source of Constituent
Turbidity	NTU	Not to exceed 1 NTU for any single measurement	Highest single measurement: 0.126 Range: 0.012 - 0.126	No	Daily 2022	Soil Runoff
	NTU	At least 95% of month's samples must be ≤ 0.3 NTU	Lowest monthly percentage of samples meeting TT standard: 100%	No	Monthly 2022	
Chlorine	ppm	At least 95% of month's samples must be at least 0.2 ppm	Lowest monthly percentage of samples meeting TT standard: 100%	No	At least 120 samples per month in 2022	Water additive used to control microbes

Constituent	Units	AL	90th Percentile	Number of Sites over AL	Violation (Yes / No)	Sample Date	Typical Source of Constituent
Copper	ppm	1.3	0.14	0	No	2021	Corrosion of household plumbing systems, erosion of natural deposits
Lead	ppb	15	1.7	0	No	2021	Corrosion of household plumbing systems, erosion of natural deposits

Constituent	Units	MCL	MCLG	Average	Range of All Samples	Highest LRAA	Violation* (Yes / No)	Sample Date	Typical Source of Constituent
Haloacetic Acids	ppb	60	NE	25.1	15.7 - 55.0	29.8	No	Quarterly 2022	Byproduct of drinking water disinfection
Total Trihalomethanes	ppb	80	NE	28.6	15.8-52.0	37.6	No	Quarterly 2022	Byproduct of drinking water disinfection

*Compliance based on LRAA

Disinfection Byproduct Precursor - Total Organic Carbon Removal Ratio

Water Treatment Plant	Compliance Factor (minimum RAA)	RAA	Violation (Yes / No)	Sample Date	Typical Source of Constituent
Betasso Water Treatment Plant	1.0	1.28	No	2022	Naturally present in the environment
Boulder Reservoir Water Treatment Plant	1.0	1.18	No	2022	Naturally present in the environment

Violations

Constituent	Description of Violation	Year	Notice (additional information on back page)
Chlorine	Failure to Monitor	2022	This violation does not usually mean that there was a problem with the water quality. If there had been, we would have notified you immediately. We missed collecting a sample (water quality is unknown).
Backflow and Cross-Connection Control	Failure for Backflow Assembly Testing Compliance Ratio	2021 / 2022	We have an inadequate backflow prevention and cross-connection control program. Uncontrolled cross connections can lead to inadvertent contamination of the drinking water.
	All past due tests were not submitted within state required 90 days	2021	

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

The City of Boulder is required to report the following water quality violations. This situation is not an emergency and does not impact public health. City staff would have immediately informed you if this had been an emergency or resulted in public health concerns. As our customers, you have a right to know what happened, what you should do and what the city is doing to correct this situation.

Backflow and Cross-Connection Control

On February 24, 2023, the city received violations of the Colorado Primary Drinking Water Regulations for the 2021 and 2022 calendar years for Failed Backflow Assembly Testing Compliance Ratio. Backflow prevention assemblies prevent contamination from private properties to the city's public water system. Most non-single-family water connections are required to have backflow prevention devices that are owned and maintained by the property owner.

What happened?

- Boulder Revised Code requires owners of backflow prevention devices to have all devices inspected and tested annually. The city plays an enforcement role and is required by state regulations to ensure that at least 90% of devices are tested every year.
- In 2021, the city only received tests for 88% of devices.
- The city also did not achieve the state requirement to have all past-due 2021 tests submitted within 90 days.
- The city received more tests in 2022 than in 2021. However, due to data management improvements, the city is now tracking more devices overall. Therefore, the percentage of tests received in 2022 was 76%.

What do you need to do?

- The city is not aware of any backflow contamination due to untested devices. City staff collect water quality samples throughout the water distribution system on a weekly basis, and we have no evidence that drinking water was impacted.
- This violation is related to the compliance ratio and meeting state deadlines for testing commercial, industrial and multi-family backflow assemblies.
- If you are a commercial, industrial or multi-family property owner, ensure your backflow devices are tested annually and reported to the city (information at www.bouldercolorado.gov/services/backflow-prevention).
- Per state regulations, the city is required to notify consumers of the following language: "Uncontrolled cross connections can lead to a back pressure or siphonage event that may allow contaminants or disease-causing organisms to enter the drinking water, which can cause diarrhea, nausea, cramps and associated headaches."

What is being done?

- The city has implemented process improvements and modernized our records system to catch these types of issues before they occur.
- For assemblies not tested in 2021, the city received test results in 2022 and achieved a 95% testing compliance ratio in July 2022.
- The city has implemented a plan to receive all past-due tests and be in full compliance in 2023.

Chlorine Disinfectant Monitoring

On June 2, 2022, a power outage forced the Boulder Reservoir Water Treatment Plant offline. The continuous chlorine monitoring system failed to restart, and required chlorine measurements were not taken for nine hours, resulting in a violation of the state's drinking water rules. Measurements taken prior to the plant restarting and after the monitoring system was restored indicate that chlorine levels were never below the required minimum. City staff immediately corrected the issue and updated systems and procedures to ensure chlorine monitoring is immediately resumed in the event of a future outage. You do not need to take any action related to your drinking water as a result of this violation.

Disinfectant residual, such as that provided by chlorine, helps protect public health. Lack of an adequate disinfectant residual may increase the likelihood that disease-causing organisms are present.

Please share the above information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

For additional information, please contact 303-441-3200 or utilities@bouldercolorado.gov.