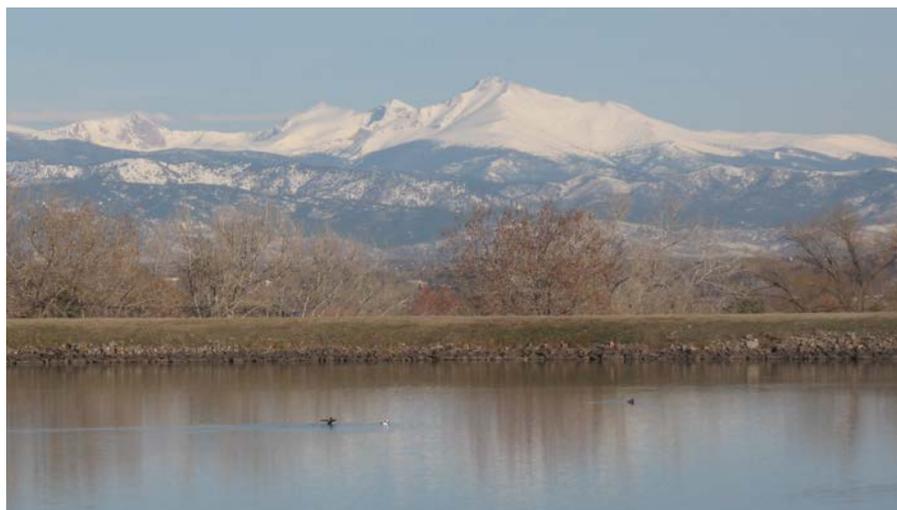


CITY OF NORTHGLENN 2017 Drinking Water Quality Report For Calendar Year 2016



Public Water System ID: CO0101115

Esta es información importante. Si no la pueden leer, necesitan que alguien se la traduzca.

We are pleased to present to you this year's water quality report. Our constant goal is to provide you with a safe and dependable supply of drinking water. Please contact RAYMOND RELING at 303-450-4049 with any questions about your utilities or for public participation opportunities.

General Information

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's Safe Drinking Water Hotline (1-800-426-4791) or by visiting <http://water.epa.gov/drink/contaminants>.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 of infections. These people should seek advice about drinking water from their health care providers. For more information about contaminants and potential health effects, or to receive a copy of the U.S. Environmental Protection Agency (EPA) and the U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and microbiological contaminants call the EPA Safe Drinking Water Hotline at (1-800-426-4791).

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, 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:

- Microbial contaminants:** viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants:** 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:** may come from a variety of sources, such as agriculture, urban stormwater runoff, and residential uses.
- Radioactive contaminants:** can be naturally occurring or be the result of oil and gas production and mining activities.
- 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 storm water runoff, and septic systems.

In order to ensure that tap water is safe to drink, the Colorado Department of Public Health and Environment prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Lead in Drinking Water

If present, elevated levels of lead can cause serious health problems (especially for pregnant women and young children). It is possible that lead levels at your home may be higher than other homes in the community as a result of materials used in your home’s plumbing. If you are concerned about lead in your water, you may wish to have your water tested. 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 before using water for drinking or cooking. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

Source Water Assessment and Protection (SWAP)

The Colorado Department of Public Health and Environment has provided us with a Source Water Assessment Report for our water supply. For general information or to obtain a copy of the report please visit <http://wqcdcompliance.com/ccr>. The report is located under “Source Water Assessment Reports”, and then “Assessment Report by County”. Select ADAMS

County and find 101115; NORTHGLENN CITY OF or by contacting RAYMOND RELING at 303-450-4049. The Source Water Assessment Report provides a screening-level evaluation of potential contamination that ***could*** occur. It ***does not*** mean that the contamination ***has or will*** occur. We can use this information to evaluate the need to improve our current water treatment capabilities and prepare for future contamination threats. This can help us ensure that quality finished water is delivered to your homes. In addition, the source water assessment results provide a starting point for developing a source water protection plan. Potential sources of contamination in our source water area are listed on the next page.

Water Contact Phone Numbers

If you have questions or concerns about your water quality or would like your water tested call

- Evelyn Rhodes**, Laboratory Supervisor, at 303-450-4074
- Water or Sewer Problems: 303-280-7802
- Water or Sewer Problems After Hours: 303-451-1289
- Utility Billing: 303-450-8770

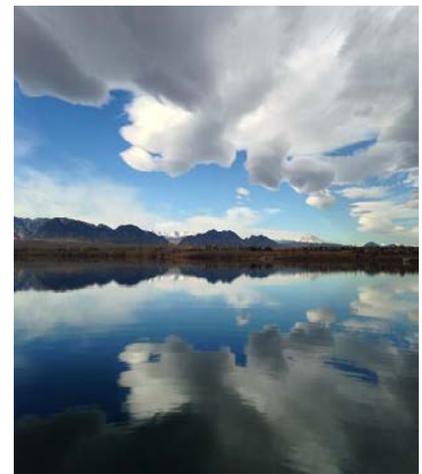
Northglenn City Council provides opportunity for public input and meets at 7 pm on the 2nd and 4th Mondays of each month. Meetings are open to the public and take place in Council Chambers at City Hall, 11701 Community Center Drive. Please see Northglenn.org for contact information for your Ward Council Member. We want you, our valued customer, to be informed about the services we provide and the quality water we deliver to you every day.



Canada Geese goslings at Standley Lake, photo by Eric Scott, City of Westminster

Our Water Source

Standley Lake: Surface Water



Northglenn's water supply originates as runoff from snowmelt and rain in the Clear Creek Watershed. Our water travels down Clear Creek and through a network of canals and ditches to Standley Lake where it is stored until treated. Water quality is monitored at each stage of the journey from Clear Creek to Standley Lake, throughout the treatment process, and in the distribution system where it is delivered to your home.

Drinking water sources are susceptible to contamination from a wide variety of natural and man-made origins. Potential contaminant sources for Northglenn include anything likely to manufacture, produce, use, store, dispose, or transport regulated and unregulated contaminants of concern. These sources are divided into discrete or dispersed sources.

Discrete contaminant sources – generally include facility-related operations from which the potential release of contamination would be confined to a relatively small area.

Potential discrete contaminant sources in our source water area have been identified as:

- EPA Superfund Sites
- EPA Abandoned Contaminated Sites
- EPA Hazardous Waste Generators
- EPA Chemical Inventory/Storage Sites
- EPA Toxic Release Inventory Sites
- Permitted Wastewater Discharge Sites
- Aboveground, Underground, and Leaking Storage Tank Sites
- Solid Waste Sites
- Existing/Abandoned Mine Sites

Dispersed contaminant sources – generally include broad-based land uses and miscellaneous sources from which the potential release of contamination would be spread widely over a relatively large area.

Potential dispersed contaminant sources in our source water area have been identified as:

- Commercial/Industrial/Transportation
- High Intensity and Low Intensity Residential
- Urban Recreational Grasses or Fallow
- Quarries/Strip Mines/Gravel Pits
- Row Crops
- Pasture/Hay
- Forests
- Septic Systems
- Oil/Gas Wells
- Road Miles

Terms and Abbreviations

- **Action Level (AL)** – The concentration of a contaminant which, if exceeded, triggers treatment and other regulatory requirements.
- **Average (\bar{x})** – The calculated central value of a set of numbers.
- **Compliance Value (No Abbreviation)** – Single or calculated value used to determine if regulatory contaminant level (e.g. MCL) is met. Examples of calculated values are the 90th Percentile, Running Annual Average (RAA) and Locational Running Annual Average (LRAA).
- **Formal Enforcement Action (No Abbreviation)** – Escalated action taken by the State (due to the risk to public health, or number or severity of violations) to bring a non-compliant water system back into compliance.
- **Gross Alpha (No Abbreviation)** – Gross alpha particle activity compliance value. It includes radium-226, but excludes radon 222, and uranium.
- **Maximum Contaminant Level (MCL)** – The highest level of a contaminant allowed 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.
- **Nephelometric Turbidity Unit (NTU)** – Measure of the clarity or cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the typical person.
- **Not Applicable (N/A)** – Does not apply or not available.
- **Parts per million = Milligrams per liter (ppm = mg/L)** – One part per million corresponds to one minute in two years or a single penny in \$10,000.
- **Parts per billion = Micrograms per liter (ppb = µg/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)** – Measure of the radioactivity in water.
- **Range (R)** – Lowest value to the highest value.
- **Sample Size (n)** – Number or count of values (i.e. number of water samples collected).
- **Treatment Technique (TT)** – A required process intended to reduce the level of a contaminant in drinking water.
- **Variance and Exemptions (V/E)** – Department permission not to meet a MCL or treatment technique under certain conditions.
- **Violation (No Abbreviation)** – Failure to meet a Colorado Primary Drinking Water Regulation.

Detected Contaminants

CITY OF NORTHGLENN routinely monitors for contaminants in your drinking water according to Federal and State laws. The following table(s) show all detections found in the period of January 1 to December 31, 2016 unless otherwise noted. The State of Colorado requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. Therefore, some of our data, though representative, may be more than one year old. Violations and Formal Enforcement Actions, if any, are reported in the next section of this report.

Note: Only detected contaminants sampled within the last 5 years appear in this report. If no tables appear in this section then no contaminants were detected in the last round of monitoring.

Disinfectants Sampled in the Distribution System TT Requirement: At least 95% of samples per period (monthly) must be at least 0.2 ppm Typical Sources: Water additive used to control microbes						
Contaminant Name	Time Period	Results	Number of Samples Below Level	Sample Size	TT Violation	MRDL
Chlorine	Jan-Dec 2016	<u>Lowest period</u> percentage of samples meeting TT requirement: 100%	0	539	No	4.0 ppm

Microorganism Contaminants Sampled in the Distribution System

Contaminant Name	Time Period	Results	Sample Size	MCL	MCLG	MCL Violation	Typical Sources
Total Coliform	Apr 2016	2.08%	48	More than 5.0% positive samples per period (If sample size is greater than or equal to 40)	0	No	Naturally present in the environment

Lead and Copper Sampled in the Distribution System

Contaminant Name	Time Period	Sample Size	90 th Percentile	Unit of Measure	90 th Percentile AL	Sample Sites Above AL	90 th Percentile AL Exceedance	Typical Sources
Copper	08/13/2014 to 08/20/2014	32	0.08	ppm	1.3	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	08/13/2014 to 08/20/2014	32	2	ppb	15	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Disinfection Byproducts Sampled in the Distribution System

Name	Year	Sample Size	Average	Range Low – High	Unit of Measure	MCL	MCLG	Highest Compliance Value (LRAA)	MCL Violation	Typical Sources
Haloacetic Acids (HAA5)	2016	16	25.5	17.0 to 37.6	ppb	60	N/A	27.6	No	Byproduct of drinking water disinfection
Total Trihalo-methanes (TTHM)	2016	16	37.2	24.5 to 54.0	ppb	80	N/A	42.2	No	Byproduct of drinking water disinfection

Total Organic Carbon (Disinfection Byproducts Precursor) Removal Ratio of Raw and Finished Water

Contaminant Name	Year	Average Ratio	Range Low – High	Sample Size	Unit of Measure	TT Minimum Ratio	TT Violation	Typical Sources
Total Organic Carbon	2016	1.34	1 to 2.86	12	Ratio	1.00	No	Naturally present in the environment

Disinfectants Sampled at the Entry Point to the Distribution System

Contaminant Name	Year	Number of Samples Above or Below Level	Sample Size	TT/MRDL Requirement	TT/MRDL Violation	Typical Sources
Chlorine	2016	0	2196	TT = No more than 4 hours with a sample below 0.2 mg/L	No	Water additive used to control microbes

Summary of Turbidity Sampled at the Entry Point to the Distribution System

Contaminant Name	Sample Date	Level Found	TT Requirement	TT Violation	Typical Sources
Turbidity	Month: Jan	Highest single measurement: 0.077 NTU	Maximum 1 NTU for any single measurement	No	Soil Runoff
Turbidity	Month: Dec	Lowest monthly percentage of samples meeting TT requirement for our technology: 100 %	In any month, at least 95% of samples must be less than 0.3 NTU	No	Soil Runoff

Radionuclides Sampled at the Entry Point to the Distribution System

Contaminant Name	Year	Sample Size	Average	Range Low – High	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Gross Alpha	2012	1	0.8	0.8 to 0.8	pCi/L	15	0	No	Erosion of natural deposits
Combined Radium	2012	1	0.18	0.18 to 0.18	pCi/L	5	0	No	Erosion of natural deposits
Combined Uranium	2012	1	0.2	0.2 to 0.2	ppb	30	0	No	Erosion of natural deposits
Gross Beta Particle Activity	2012	1	0.66	0.66 to 0.66	pCi/L*	50	0	No	Decay of natural and man-made deposits

*The MCL for Gross Beta Particle Activity is 4 mrem/year. Since there is no simple conversion between mrem/year and pCi/L EPA considers 50 pCi/L to be the level of concern for Gross Beta Particle Activity.

Inorganic Contaminants Sampled at the Entry Point to the Distribution System

Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Antimony	2012	0.24	0.24 to 0.24	1	ppb	6	6	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder

Inorganic Contaminants Sampled at the Entry Point to the Distribution System

Contaminant Name	Year	Average	Range Low – High	Sample Size	Unit of Measure	MCL	MCLG	MCL Violation	Typical Sources
Arsenic	2012	0.32	0.32 to 0.32	1	ppb	10	0	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	2012	0.05	0.05 to 0.05	1	ppm	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	2012	0.61	0.61 to 0.61	1	ppb	100	100	No	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride	2016	0.47	0.47 to 0.47	1	ppm	4	4	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Selenium	2012	0.5	0.5 to 0.5	1	ppb	50	50	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Thallium	2012	0.04	0.04 to 0.04	1	ppb	2	0.5	No	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories



Violations, Significant Deficiencies, Backflow/Cross-Connection, and Formal Enforcement Actions

No Violations or Formal Enforcement Actions



Northglenn Storm Water Management Program

The goal of this program is to reduce the amount of pollutants entering our streams, rivers, lakes, and reservoirs. Oil, grease, fluids from vehicles, soil runoff during construction, and other debris on the ground are just a few things that get washed away during storms and into the very water that we use for drinking and recreation. Properly maintaining your vehicle, picking up after your pets, and limiting use of lawn fertilizers and chemicals, are some of the ways you can help to reduce pollution. For more information on how you can make a difference in preventing storm water pollution, visit www.northglenn.org or call (303) 450-8792.

Water Conservation

The City encourages our customers to use water wisely. Here are a few conservation methods that are easy to implement:

- Water your lawn only two days per week, especially during droughts. While your lawn won't be perfectly green, it will use water more efficiently and become more tolerant to dry conditions.
- Water between 6 p.m. and 10 a.m., and break the amount of watering time into 2-3 shorter cycles. This will allow water to soak deeper into the soil. Watering during the heat of the day may cause you to lose up to 50% of your water application to evaporation.
- Regularly check pipes, hoses, valves, and faucets for leaks.
- Use a bucket to wash your car. Use a shut-off nozzle on the hose to save water.
- Use a broom to clean sidewalks, garages, patios, and driveways instead of the hose.
- Use drought tolerant plants and grasses in your landscaping (xeriscaping).
- Mulch your garden to reduce evaporation.
- Set your lawn mower to mow one notch higher. Longer grass means less evaporation.
- Reduce your watering in the spring and fall. Your lawn needs less than one third as much water in the spring and fall as it does during the summer.

Visit the City's website, www.northglenn.org, or call 303-450-4045 for more information on conservation and xeriscaping.



Frequently Asked Questions

What is the hardness of Northglenn's water?

Total hardness in drinking water is caused by calcium and magnesium carbonate, which occur naturally in our water source. When high levels of these two minerals are present in the water supply, build-up of mineral deposits or scaling can occur. A level of 75 mg/L or less of these minerals is considered "soft" water, while a level of 300 mg/L or more is considered "very hard" water. In the distribution system, Northglenn's average level of total hardness in 2016 was 128 mg/L (or 7.48 grains per gallon), which falls within the moderate range.

Why does the water appear cloudy at times?

This seems to happen more often in winter when the drinking water is colder, but may also happen if you have an aerator attached to your faucet. There is no cause for alarm; tiny air bubbles in the water cause the milky or cloudy appearance. If the water is left to stand for a short while, the bubbles will rise to the surface and dissipate.

Does our water contain fluoride?

Fluoride, a mineral that is naturally present in Northglenn's source water, can be a benefit to dental health, with an optimal range of 0.7-1.2 mg/L. Many communities add fluoride to their drinking water to help promote good dental health. The City of Northglenn does **not** add fluoride beyond what is naturally found in our source water. The EPA has set a maximum level for fluoride of 4 mg/L in drinking water. Some people who drink water that contains fluoride in excess of this level can be at risk for bone disease. A secondary level of 2 mg/L has been set to help protect against dental fluorosis, which can cause stains and pitting in developing teeth. Children who are under 9 years of age should not drink water that has more than 2 mg/L of fluoride. Our highest detected level of fluoride in 2016 was 0.49 mg/L.

How much sodium is in the water?

At this time, sodium is not a regulated contaminant in drinking water. The EPA recognizes that high levels of salt are associated with hypertension, but that sodium levels in drinking water are usually low and unlikely to contribute to adverse health effects. Most Americans consume between 4000-6000 mg of sodium a day. In a study conducted by the EPA, 75% of the water systems tested had concentrations less than 50 mg/L of sodium. At this level, drinking 2 liters (about 8 glasses) of water per day would contribute less than 100 mg of sodium per day. Northglenn's drinking water averages around 25 mg/L.

Why do I taste chlorine in my water?

Chlorine, a disinfectant, is added to the water in its final treatment stage to kill bacteria and viruses. This is the most efficient and cost-effective method of disinfection available. The amount used is well below a level that would harm humans, but some people are more sensitive to the taste and odor of chlorine than others and may find it objectionable. An inexpensive way to minimize this is to keep a jug of water in the refrigerator for drinking; the colder the water, the less noticeable the taste and odor of chlorine. The MCL for chlorine residual in drinking water is 4 mg/L, with a minimum 0.2 mg/L residual requirement; the average free chlorine residual for Northglenn in 2016 was 0.94 mg/L.

What causes rusty colored water?

Periodically, city crews flush every fire hydrant along the 110 miles of water mains in Northglenn to remove debris in the form of sand particles or pipe scale. Small amounts of iron and manganese may temporarily discolor your water during this process, but this is not harmful. If you notice a rusty tinge to your water, open all your faucets at the same time for a few minutes until the water runs clear.



Bald Eagle at Standley Lake, photo by Eric Scott, City of Westminster