



ANNUAL
WATER
QUALITY
REPORT

WATER TESTING PERFORMED IN 2014



Presented By
City of Westminster

Our Mission Continues

We are proud to present once again our annual water quality report covering all testing performed between January 1 and December 31, 2014. Most notably, last year marked the 40th anniversary of the Safe Drinking Water Act (SDWA). This rule was created to protect public health by regulating the nation's drinking water supply. We celebrate this milestone as we continue to manage our water system with a mission to deliver the best quality drinking water. By striving to meet the requirements of the SDWA, we are ensuring a future of healthy, clean drinking water for years to come.

Water Treatment and Distribution

The treatment process begins with the initial chemical assessment of the water coming into the facility from the lake. Water quality changes constantly based on lake conditions; therefore, it is critical that the process is monitored 24/7 by on-site staff. Certified treatment operators continuously adjust and balance treatment options to provide consistent quality in the finished water that comes out of your faucet.

Chemicals are added during water treatment to remove impurities from the lake water and optimize the treatment process. The chemicals react with the impurities to form larger particles during the flocculation stage of the treatment process. These larger, heavier particles settle out of the water during the sedimentation stage and are filtered out during the filtration stage. Ammonia and chlorine are carefully added during the disinfection stage in just the right concentrations to make sure the water is free of harmful bacteria by the time it gets to your home.

The treated water is stored in tanks until it is pumped into the distribution system which consists of 511 miles of pipes that bring treated drinking water to individual consumers. The system consists of a complex infrastructure of pumps and hydrants designed to ensure there is enough water pressure for homes as well as for fire fighting efforts when the need arises. Occasional flushing of sections of the distribution system may be required to bring fresh water into locations where water usage is lower than expected so as to ensure the highest quality of water is available to all residents.

Substances That Could Be in Water

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

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, in some cases, radioactive material; and substances resulting from the presence of animals or from human activity. 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater 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 stormwater runoff, and residential uses;

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

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

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Community Participation

Citizens are invited to provide comments about drinking water quality at City Council meetings. Westminster City Council meets in regular session on the second and fourth Mondays of each month at 7:00 p.m. in the Council Chambers at Westminster City Hall, 4800 W. 92nd Avenue. Refer to the City's Web site at www.cityofwestminster.us for changes to the meeting schedule.

Additional Drinking Water Results Ranges for 2014

Analyte	Concentration Range
Total Dissolved Solids	160 - 228 ppm
pH	8.0 - 8.7
Conductivity	268 - 380 μ S/cm
Alkalinity (as CaCO ₃)	46 - 64 ppm
Total Hardness (as CaCO ₃)	120 ppm = approximately 7 grains per gallon (estimated - based on historical data)
Sodium	19 - 25 ppm
Ammonia (as N)	0.34 - 0.58 ppm

Important Health Information

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. 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 from infections. These people should seek advice about drinking water from their health care providers. More information about contaminants and the potential health effects, along with the U.S. Environmental Protection Agency (EPA) and the 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 (800-426-4791).

Source Water Description

The City of Westminster customers are fortunate because we enjoy a high-quality water supply that originates on the mountain peaks of the Continental Divide. Our Semper and Northwest Water Treatment Facilities draw water from Standley Lake, which is filled with surface water flows mainly from Clear Creek. Snow melt and rain from the watershed flow down Clear Creek and are transported to the lake via three separate canals.



Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. The sources of lead in drinking water are primarily from materials and components associated with service lines and home plumbing. We are 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 cold tap for 30 seconds to 2 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 or at www.epa.gov/safewater/lead.

QUESTIONS?

For more information about this report or any questions related to your drinking water, please call our Water Quality staff at (303) 658-2461.

Unregulated Contaminant Monitoring Rule

The City of Westminster participated in the U.S. Environmental Protection Agency's (EPA) third round of the Unregulated Contaminant Monitoring Rule (UCMR). Approximately 6,000 utilities nationwide will monitor unregulated contaminants for 1 year to help the EPA determine the occurrence of these contaminants in drinking water and whether or not they need to be regulated for protection of public health. The EPA currently regulates 90 contaminants in drinking water. The 1996 Safe Drinking Water Act amendments require that once every 5 years the EPA issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems. The EPA requires utilities to report UCMR results in their annual Water Quality Reports.

As part of the UCMR3 program, the City collected treated water samples from both surface water treatment plants and the distribution system on a quarterly basis for 1 year. Six of the 28 contaminants tested were measured at detectable concentrations with results below the reference levels for all analytes, except chlorate. Hormones, perfluorinated compounds, synthetic organic compounds, and volatile organic compounds analyzed in the UCMR3 monitoring were not detected in our treated drinking water. The EPA has not established maximum contaminant levels (MCLs) for these unregulated contaminants in drinking water, and the human health effects of these contaminants at the levels they were found are uncertain. In the absence of MCLs and health standards, published guidance or health reference levels from the EPA are listed in the table below as a point of comparison.

The most direct source of exposure to chlorate is through drinking water that has been disinfected with sodium hypochlorite. The amount of chlorate in drinking water depends on a number of chemical reactions in both the formation of these disinfectants and the conditions in which they are used. As a result, concentrations of chlorate can vary at different points within the system and at different times during the year. Water providers can mitigate the production of chlorate during disinfection by optimizing operational variables. EPA's current reference concentration indicates that ongoing exposure to chlorate at levels of more than 210 parts per billion per day can lead to an enlarged thyroid. Water systems that provide UCMR3 data for chlorate will assist EPA in determining how prevalent it is in U.S. drinking water supplies and at what levels it appears. With this information, EPA will be better able to determine if chlorate in tap water presents a health concern.

The City is committed to protecting public health and will continue to monitor and support EPA's research on all of these contaminants. For more information on all the UCMR3 contaminants, visit <http://www.drinktap.org/home/water-information/water-quality/ucmr3>.

UCMR3 Contaminants Detected in Drinking Water Samples (2014 - 2015)

Contaminant	Laboratory Minimum Reporting Limit	Reference Concentration	Range of Concentrations Detected
Molybdenum (ppb)	1	40	2.8 - 3.4
Strontium (ppb)	0.3	4,000	170 - 220
Chromium (ppb)	0.2	100	0.20 - 0.73
Hexavalent Chromium (ppb)	0.03	None established	0.11 - 0.51
Chlorate (ppb)	20	210	61 - 350
Vanadium (ppb)	0.2	21	<0.2 - 0.24

Source Water Assessment

The Colorado Department of Public Health and Environment (CDPHE) has provided us with a Source Water Assessment Project report (SWAP) for our water supply. The SWAP provides a screening evaluation of potential contamination that could occur. It does not mean that the contamination has occurred or will occur. This information will be used to evaluate the need to improve our current water treatment capabilities and prepare for future contamination threats. A copy of the report is available at www.colorado.gov/cdphedir/wq/swap/adams/101170westminstercityof.pdf or by contacting Westminster's Water Quality staff at (303) 658-2461. Potential sources of contamination to our source water include existing/abandoned mines, above-ground and underground leaking storage tanks, EPA abandoned contaminated sites and Superfund sites, EPA chemical inventory/storage site and toxic release inventory sites, EPA hazardous waste generators, permitted wastewater discharges, solid waste sites, forests, residential areas, urban recreational grasses, commercial/industrial transportation, quarries/strip mines/gravel pits, row crops, fallow and pasture/hay, septic systems, oil/gas wells, and roads.



Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of regulated radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires water providers to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was collected. The amount detected is reported as the maximum range value unless otherwise specified.

REGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2011	15	0	2.0	1.2–2.0	No	Erosion of natural deposits
Barium (ppm)	2014	2	2	0.037	0.030–0.037	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta/Photon Emitters ¹ (pCi/L)	2011	50	0	2.0	0.8–2.0	No	Decay of natural and man-made deposits
Chloramine [as Cl ₂] ² (ppm)	2014	[4]	[4]	1.84	0.71–2.6	No	Water additive used to control microbes
Combined Radium (pCi/L)	2011	5	0	0.1	0.1–0.1	No	Erosion of natural deposits
Fluoride (ppm)	2014	4	4	0.56	0.52–0.56	No	Erosion of natural deposits
Haloacetic Acids [HAA]–Stage 2 ³ (ppb)	2014	LRAA < 60	NA	16.3	11.8–18.1	No	By-product of drinking water disinfection
Nitrate (ppm)	2014	10	10	0.12	0.11–0.12	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes]–Stage 2 ³ (ppb)	2014	LRAA < 80	NA	32.3	22.5–41.5	No	By-product of drinking water disinfection
Total Coliform Bacteria ⁴ (% positive samples)	2014	5% of monthly samples are positive	0	0.81	NA	No	Naturally present in the environment
Total Organic Carbon ³ (ppm)	2014	TT = RAA < 2	NA	1.5	1.3–1.6	No	Naturally present in the environment
Turbidity ⁵ (NTU)	2014	TT = no sample above 1.0	NA	0.076	0.012–0.076	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2014	TT = 95% of samples < 0.3 NTU	NA	100	NA	No	Soil runoff
Uranium (ppb)	2011	30	0	1.2	ND–1.2	No	Erosion of natural deposits

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL ⁶	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2014	1.3	1.3	0.26	0/51	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2014	15	0	2	0/51	No	Corrosion of household plumbing systems; Erosion of natural deposits

¹ The MCL for beta particles is 4 mrem/year. The U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

² The amount detected for chloramines represents the average of all individual sample results.

³ Total Organic Carbon is regulated as quarterly running annual average (RAA). HAA and TTHM are regulated as locational running annual average (LRAA). The Amount Detected represents the highest RAA or LRAA, and the Range Low-High represents the individual sample results.

⁴ The greatest number of total coliform positive samples was collected in July 2014.

⁵ Turbidity is measured at the water treatment plant to assess cloudiness of the water as a good indicator of the effectiveness of the filtration process. The highest turbidity result was recorded on October 27, 2014.

⁶ The Action Levels for lead and copper apply to the 90th percentile of all samples collected; 90% of all samples collected (9 of 10) must be below the Action Level.

Definitions

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

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

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