

## Director's Message

The mission of Greeley Water is to protect both the quality and quantity of your water supply. This report describes the high water quality that Greeley citizens have come to expect and deserve in their drinking water. Making sure that all water going down the pipe meets the highest quality standards is a 24-hour a day job. This report documents that job was well done, as it has since pure filtered Poudre water first flowed to Greeley, a hundred years ago this year.

Greeley Water's mission is to provide you with pure plentiful water for health and fire safety. That mission includes being vigilant in protecting the value of your water supply. During the last year especially, Greeley Water has been in Water Court several times to make sure that others, be they well owners or developers, are not using the water supplies that the citizens of Greeley have already bought and paid for. Greeley has created a water legacy and still has plenty of water for beneficial uses but never for waste. So be water wise.



Jon Monson  
Water & Sewer Director

### Greeley's Water Legacy: 1907-2007

In 1907, Greeley finished construction of its Bellvue Treatment Facility, consisting of slow sand filters and 36 miles of wooden pipe to Greeley. Until then, residents relied on wells built into the gravel bed of the river to provide water to their homes. In 2007, the Water & Sewer Department is celebrating the 100th anniversary of Greeley's water system.



June 21	Water Facility & Reservoir Tour
July 6	"Colorado Water, Liquid Gold" Exhibit
August 18	Greeley Water Legacy Festival
September 13	Water Facility & Reservoir Tour

Call (970) 350-9204 for information on any of our special events or visit [www.greeleygov.com/water](http://www.greeleygov.com/water).

## Get More Information

For details about the material in this report, call (970)350-9811. To view the report online, visit [www.greeleygov.com/ccr](http://www.greeleygov.com/ccr). Access information about drinking water in general on the EPA's drinking water Web site at [www.epa.gov/safewater](http://www.epa.gov/safewater).



Greeley's Water and Sewer Board meetings are open to the public. Meetings are usually held the third Wednesday afternoon of each month at City Hall, 1000 10th Street. For details, please call (970)350-9812 or visit [www.greeleygov.com/water](http://www.greeleygov.com/water).

### Greeley Water Contact Directory

<b>Water &amp; Sewer Department</b> <a href="http://www.greeleygov.com/water">www.greeleygov.com/water</a> <a href="mailto:water@greeleygov.com">water@greeleygov.com</a>	<b>350-9811</b>
<b>Conservation/Restrictions</b> <a href="http://www.greeleygov.com/wc">www.greeleygov.com/wc</a>	<b>336-4134</b>
<b>Water Emergencies (Daytime)</b>	<b>350-9811</b>
<b>Water Emergencies (After Hours)</b>	<b>350-9600</b>
<b>Taste and Odor Concerns</b>	<b>350-9324</b>
<b>Utility Billing</b>	<b>350-9720</b>



# City of Greeley Annual Drinking Water Report 2006

June 2007

CO-0162321



**Issue #9**

Greeley's drinking water meets or exceeds all applicable federal, state and local standards for drinking water quality. This report, the ninth annual, details Greeley's public water system for the calendar year 2006. It provides customers an opportunity to learn about drinking water sources and quality.

Esta es información importante. Si no la pueden leer, necesitan que alguien se la traduzca. Si tiene alguna pregunta llame al telefono (970) 350-9811.

## Health 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. Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 for 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.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. 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 elevated lead levels in your home's water, you may wish to have your water tested or flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline 1-800-426-4791.



## Common Drinking Water Contaminants

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:



Microbiological Contaminants: such as viruses and bacteria, which may come from sewage treatment plants, septic systems, livestock operations and wildlife.

# 2006 Drinking Water Quality Results

(Sampling was performed from January 1, 2006, through December 31, 2006, unless otherwise indicated.)

## Key to the Tables

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

**MCL:** Maximum contaminant level. The highest level of a contaminant allowed in drinking water below which there are no known health effects. 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 are no known or expected risks to health. MCLGs allow for a margin of safety.

**MRDLG:** Maximum residual disinfectant level goal. The level of a drinking water disinfectant, below which there are no known or expected risks to health. MRDLGs do not reflect the benefits of the use of disinfectants to

The Safe Drinking Water Act establishes drinking water standards for most water systems in the country, including Greeley's. In 2006, Greeley's system operated without exemption. The City's water system did receive permission not to test for cyanide, asbestos, dioxin or glyphosate because it is unlikely they would be found.

In compliance with state and federal laws, the City routinely monitors for a long list of contaminants. The tables identify which ones Greeley detected, the levels found, and the maximum allowable levels. Greeley met all drinking water standards. For a list of the contaminants tested but not detected, please call (970)350-9811. In addition, the EPA requires water systems to monitor for certain unregulated contaminants.



## Microbiological Contaminants

Contaminant, Units	MCLG	MCL		Highest Single Value	Violation?	Source of Contaminant in Drinking Water
Turbidity, NTU	N/A	TT ≤ 0.3	100%	0.17	No	Soil runoff
		TT ≤ 1.0	100%			

There are two treatment technique standards for turbidity. To meet the treatment technique standard of 0.3 NTU, the reported turbidity must be less than or equal to this value at least 95% of the time. To meet the treatment technique standard of 1.0 NTU, turbidity must never be greater than 1.0 NTU.

Contaminant	MCLG	MCL	Percentage of samples that were positive	Violation?	Source of contaminant in drinking water
Total coliform bacteria	0	5% of the samples test positive	0%	No	Naturally present in the environment

Each month, 90 samples are taken in the distribution system. Of the 90 taken each month, none were found positive for coliform bacteria.

Contaminant, Units	Compliance Factor (measurements should not be lower than this factor)	Annual removal ratio and lowest RAA detected	Violation?	Source of contaminant in drinking water
Total Organic Carbon (TOC)	1.0	Range: 1.07 – 1.28 Lowest RAA: 1.07	No	Naturally present in the environment

Compliance with the TOC standard is based on how much organic carbon is removed from the raw water.

## Disinfectants and Disinfection Byproducts

Contaminant, Units	MCLG	MCL	Range of levels detected and highest value detected	Violation?	Source of contaminant in drinking water
Chlorine Dioxide, ppb	800 (MRDLG)	800 (MRDL)	Range: 0 – 111 Highest: 111	No	Water additive used to control microbes
Chlorite, ppm	0.8	1	Range: 0.05 – 0.71 Highest: 0.71	No	By-product of disinfection
Chlorine residual, ppm	4 (MRDLG)	4.0 (MRDL)	Range: 0.02 - 1.5 Highest Annual Average: 0.64	No	Water additive used to control microbes

Compliance with the Chlorine residual standard is based on a running annual average of monthly samples taken throughout the distribution system.

Inorganic Contaminants: such as salts and metals, which can be naturally-occurring or result from urban storm water 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 storm water runoff and residential uses.

Organic Chemical Contaminants: including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and can also come from gas stations, urban storm water runoff and septic systems.

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

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.



### A Word about Cryptosporidium

Cryptosporidium is a microorganism found in rivers and lakes. It can cause severe intestinal disorders, including nausea, diarrhea and abdominal cramps. Most healthy individuals can recover from it in a few weeks. Immuno-compromised people face a greater risk of developing life-threatening illness and should ask their doctors about appropriate precautions to take. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

In 2006, Cryptosporidium was detected in untreated water samples from source water supplied by the C-BT system and the Cache la Poudre River. Current test methods cannot determine whether the organisms were dead or capable of causing disease. Greeley's system eliminates Cryptosporidium from drinking water. The treatment combination includes coagulation, sedimentation, filtration, and disinfection. Tests did not detect the organisms in treated water.



control microbial contaminants.

N/A: Not applicable.

ND: Not detected. Lab analysis indicates that contaminant is not present.

NTU: Nephelometric turbidity unit is the measurement of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/l: Pico curies per liter, a measure of radioactivity.

ppm: Parts per million, or milligrams per liter (mg/l).

ppb: Parts per billion or micrograms per liter (ug/l).

RAA: Running annual average. It is an average of four consecutive quarterly averages.

TOC: Total organic carbon. A measure of the total amount of carbon in the water, present as organic molecules.

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

Haloacetic Acids, (HAA5), ppb	N/A	60	Range: 15 - 41 Highest Annual Average: 27	No	By-product of disinfection
Total Trihalomethanes, (TTHM), ppb	N/A	80	Range: 19 - 66 Highest Annual Average: 42	No	By-product of disinfection

Compliance with the TTHM & HAA5 standards is based on a running annual average of four quarterly sets of samples taken throughout the distribution system.

### Inorganic Contaminants

Contaminant, Units	MCLG	MCL	Range of levels detected and highest value detected		Violation?	Source of contaminant in drinking water
Antimony, ppb	6	6	Range: 0.16 -- 0.25	Highest: 0.25	No	Industrial activity
Barium, ppm	2	2	Range : 0.17 – 0.56	Highest: 0.56	No	Erosion of natural deposits
Beryllium, ppb	4	4	Range: 0.13 -- 0.38	Highest: 0.38	No	Industrial activity
Fluoride, ppm	4	4	Range: 0.24 – 1.10	Highest: 1.10	No	Water additive that promotes strong teeth
Nitrate, ppm	10	10	Range: 0.01 – 0.035	Highest: 0.035	No	Runoff from fertilizer use; leaching from septic systems; erosion of natural deposits
Selenium, ppb	50	50	Range: 0.3 – 1.5	Highest: 1.5	No	Erosion of natural deposits
Contaminant, Units	MCLG	MCL	90th Percentile Value	# of Homes Exceeding Action Level	Violation?	Source of contaminant in drinking water
Lead, ppb	0	AL=15	5	0	No	Corrosion of household plumbing systems
Copper, ppm	1.3	AL=1.3	0.34	0	No	

The 90th percentile value represents the highest concentration that is exceeded by 10% of the taps sampled. The data presented are from the most recent testing performed in 2005.

### Radionuclides

Contaminant, Units	MCLG	MCL	Range of levels detected and highest value detected		Violation?	Source of contaminant in drinking water
Gross alpha, pCi/L	0	15	Range: Not detected – 2	Highest: 2	No	Erosion of natural deposits
Gross beta, pCi/l	0	50	Range: not detected – 3	Highest: 3	No	Decay of natural deposits

The data presented for radionuclides are from the most recent testing performed in 2004.

### Synthetic (including pesticides and herbicides) and Volatile Organic Compounds

Contaminant, Units	MCLG	MCL	Value Detected	Violation?	Source of contaminant in drinking water
Hexachloropentadiene, ppb	50	50	0.086	No	Discharge from chemical factories

Testing performed on Aug. 21 and Nov. 27. Detected in November. Performing quarterly follow up testing in 2007.

### Secondary Contaminants/ Other Monitoring

Contaminant, Unit	Highest value detected	Range	Secondary Standard
Sodium, MG/L	27	8-27	10000
Total dissolved solids (TDS), MG/L	286	50-286	500

Secondary standards are non-enforceable guidelines for contaminants that may cause aesthetic effects in drinking water. EPA recommends these standards but does not require water systems to comply.

## Greeley's Drinking Water Sources

Greeley's drinking water comes from surface waters in four major river basins: the Cache la Poudre, Laramie, Big Thompson and Colorado.

Greeley uses six high-mountain reservoirs — Barnes Meadow, Comanche, Hourglass, Peterson, Milton Seaman and Twin Lake— in the Cache la Poudre River basin in the Roosevelt National Forest. The reservoirs store water from spring snowmelt for redistribution during the summer and fall when demand is high and rivers are low. Greeley also uses three plains reservoirs — Boyd Lake, Lake Loveland and Horseshoe Lake— to provide peak summer demand storage.



Greeley owns a portion of the Colorado-Big Thompson and Windy Gap projects. The City stores its C-BT water in Lake Granby, Horsetooth Reservoir and Carter Lake. The C-BT can deliver water to either the Cache la Poudre or Big Thompson rivers for Greeley.

Greeley receives water from the Laramie River basin through a transmountain diversion project, the Laramie-Poudre Tunnel. The Laramie River originates northwest of Fort Collins and flows north out of Colorado to the North Platte River in Wyoming. Greeley acquired water from the Laramie River in 2006.

The City treats raw water from its four sources at the Boyd Lake Water Treatment Plant near Loveland or the Bellvue Water Treatment Plant north of Fort Collins. The Boyd Lake facility usually operates April through October to accommodate increased demand from lawn watering. The Bellvue plant operates year-round. Treated water is piped to Greeley and distributed to customers, or stored until it is needed.



## Watersheds and Source Water Protection

Source water is untreated water from streams, rivers, lakes or underground aquifers. The Colorado Source Water Assessment and Protection Program is designed to provide information about the drinking water as well as to provide individuals a way to become involved in water quality protection. The SWAP program encourages community-based protection and preventive management strategies. SWAP completed its assessment of Colorado's 1,700-plus public waters in 2004. To learn more about the program or to read assessments online, visit [www.cdphe.state.co.us/wq/swaphom.html](http://www.cdphe.state.co.us/wq/swaphom.html).

Greeley has been a member of the Big Thompson Watershed Forum since 1997 and has collaborated with other communities and organizations to monitor and analyze water quality in the Big Thompson Watershed. The information gathered through the monitoring program is used to inform customers about source water quality and bring improved protection to this watershed. For more information, contact the Big Thompson Watershed Forum at (970) 613-6160 or visit [www.btwatershed.org](http://www.btwatershed.org)



## Milton Seaman Reservoir Enlargement

You may have heard that Greeley is planning to enlarge Milton Seaman Reservoir. The reservoir was built by the City in 1945 and currently stores 5,008 acre feet of water on the North Fork of the Poudre River. The proposed enlargement will increase capacity to 48,000 acre feet of storage. Greeley anticipates Seaman's enlargement will occur around 2025.



The project, currently in the permitting stage, will increase future water storage and provide drought protection. City leaders believe the enlargement will help meet future demands, encourage efficient use of existing supplies and support a reliable water system.

For details visit [www.halligan-seaman.com](http://www.halligan-seaman.com)

## 2007 Watering Restrictions

Greeley allows three days-per-week watering. Residents must follow the mandatory schedule below and refrain from watering during the heat of the day. The Water Department is allowing three days for flexibility, although we encourage you to water one or two days in the spring and fall depending on precipitation and temperature.



Single Family Even Addresses 0, 2, 4, 6, 8	Single Family Odd Addresses 1, 3, 5, 7, 9	Commercial Multi-Family Nonprofit
Tuesday	Monday	Tuesday
Thursday	Wednesday	Friday
Sunday	Saturday	Sunday

## Lawn & Irrigation System Information

Before installing a sprinkler system, laying down new sod and turning on the water, the City of Greeley requires a backflow prevention assembly, a sprinkler system permit and a watering variance.

A backflow prevention assembly is necessary for all irrigation systems. An assembly is a mechanical plumbing device that prevents water from flowing back into the water system. Only properly installed, tested and maintained backflow assemblies can reliably protect the water system. A copy of a certified tester's report is required to obtain final approval for a sprinkler system permit.

To plant grass seed or install sod in Greeley, property owners or contractors must obtain a variance to water the landscaping outside the City's watering restrictions. Without a variance, property owners must follow the 3-day-a-week schedule or risk a fine. Before seeding or sodding, residents are required to add compost at 4 cubic yards to every 1000 square feet of soil and rototill it to a depth of 6 to 8 inches. Compost, a mix of decayed plant matter, fertilizes and conditions the soil. The results of adding compost: plants use less water, runoff diminishes from landscape to pavement and microbiological activity necessary for healthy plant growth increases.

The property owner or landscape installer must bring the following items to the Water Conservation office: a receipt for seed or sod, a receipt for compost, receipt of tiller rental or a photo of rototilling and an irrigation system permit number (if applicable).

The Building Inspection Division requires a permit to install a home or business irrigation sprinkler system. Contact the Division at 350-9830. For variances call the Water Conservation office, 336-4134, or visit [www.greeleygov.com/wc](http://www.greeleygov.com/wc).

