

## Director's Message

Greeley's water supply begins as pure Rocky Mountain snowmelt and the quality is improved along the way through filtration and activated carbon. However, we ask for your patience in these difficult times. Low water levels and high temperatures frequently create taste and odor problems as algae grows abundantly in our reservoirs. Fires in our watersheds, such as the Picnic Rock fire earlier this year, can compromise the source water supply. Should you experience objectionable taste and odor, please notify us at 350-9324.

Colorado is in its fifth year of drought, which began in 2000. Drought by its very nature decreases the available water supply. Greeley residents responded well to the call for water conservation in 2003. Consequently, we refilled our reservoirs and are beginning 2004 in as secure a position as possible. Because no one knows how long this drought will continue, we ask you to be careful and conservative with your water use. Water is available for your benefit, but please, don't waste it.

Jon Monson, Director  
Water & Sewer Department

If you would like more information about the material covered in this report, contact Angela Miles, Regulatory Compliance Coordinator at 970.350.9209 or, if you'd like to view the report online, visit [www.greeleygov.com/water](http://www.greeleygov.com/water). You can also access information about drinking water in general on EPA's drinking water website at [www.epa.gov/safewater](http://www.epa.gov/safewater). Additionally, the public is welcome to attend meetings of Greeley's Water and Sewer Board, which are usually held on the third Wednesday afternoon of every month at City Hall. For more information on times, dates and locations of the Board meetings, please contact Norma Wegher at 970.350.9812.

## Contaminants Commonly Found

### In Drinking Water

The sources of drinking water (both from the tap 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 accumulate substances resulting from the presence of animals or from human activity.

Contaminants that may be present in the sources of drinking water include:

**Microbiological contaminants**, such as virus' and bacteria, which may come from sewage treatment plants, septic systems, livestock operations, and wildlife;

**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; and

**Radioactive contaminants**, which can be naturally-occurring or be the result of oil and gas production or mining activities.



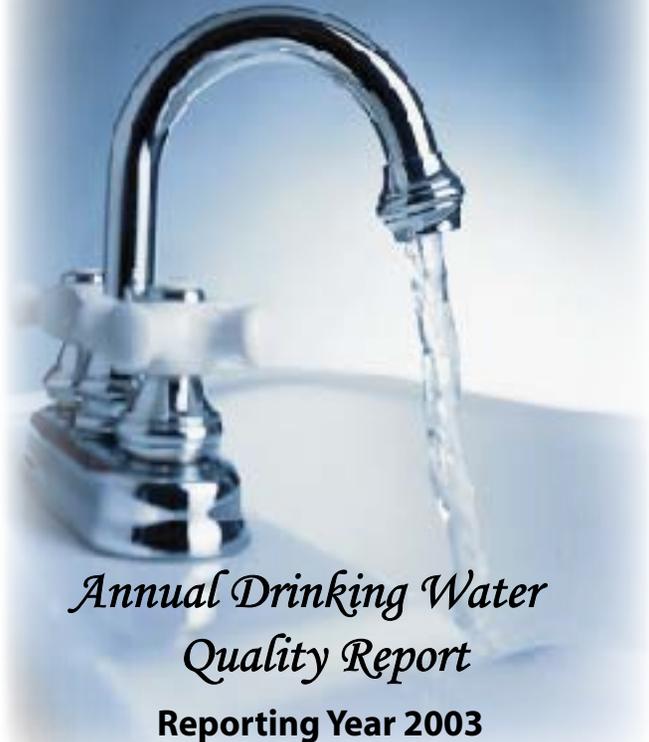
### CONTACT INFORMATION

Drought/Water Conservation Hotline  
970.336.4134 (to report watering violations)  
[www.greeleygov.com/drought](http://www.greeleygov.com/drought)

Water Emergencies Day: 350.9811 After hours: 350.9600	Taste & Odor Concerns 350.9324	Espanol 350.9720
---	-----------------------------------	---------------------

Drinking Water Quality Report: 350.9209

## CITY OF GREELEY



### Annual Drinking Water Quality Report Reporting Year 2003

Welcome to the City of Greeley sixth Annual Drinking Water Quality Report. The information in this report covers drinking water information for the City of Greeley public water system\* for calendar year 2003. The report provides an excellent opportunity for our customers to learn about where their drinking water comes from and the quality of the water they consume.

\* Colorado identifies the Greeley water system with number 162321

*Esta informacion es importante. Si usted necesita ayuda por favor llamenos y le ayudaremos con gusto. Si tiene alguna pregunta llame al telefono 350.9720.*

# GREELEY WATER RESOURCES

Greeley drinking water comes from surface waters located in three major river basins: the Cache la Poudre, the Big Thompson, and the Colorado. Greeley also uses six high-mountain reservoirs in the Cache la Poudre River basin (Barnes Meadow, Comanche, Hourglass, Peterson, Milton Seaman, and Twin Lake) within the Roosevelt National Forest to retain water from spring snowmelt for redistribution during the summer and fall when there is high water demand, but low-river flows. In addition, Greeley uses a plains reservoir system (Boyd Lake, Lake Loveland, and Horseshoe Lake) to provide storage for peak summer demands. Finally, Greeley owns a portion of the Colorado-Big Thompson (C-BT) Project. We store our portion of the water from the C-BT Project in Lake Granby, Horsetooth Reservoir, and Carter Lake, which can deliver water to either the Cache la Poudre or Big Thompson River Basins to meet Greeley water demands.

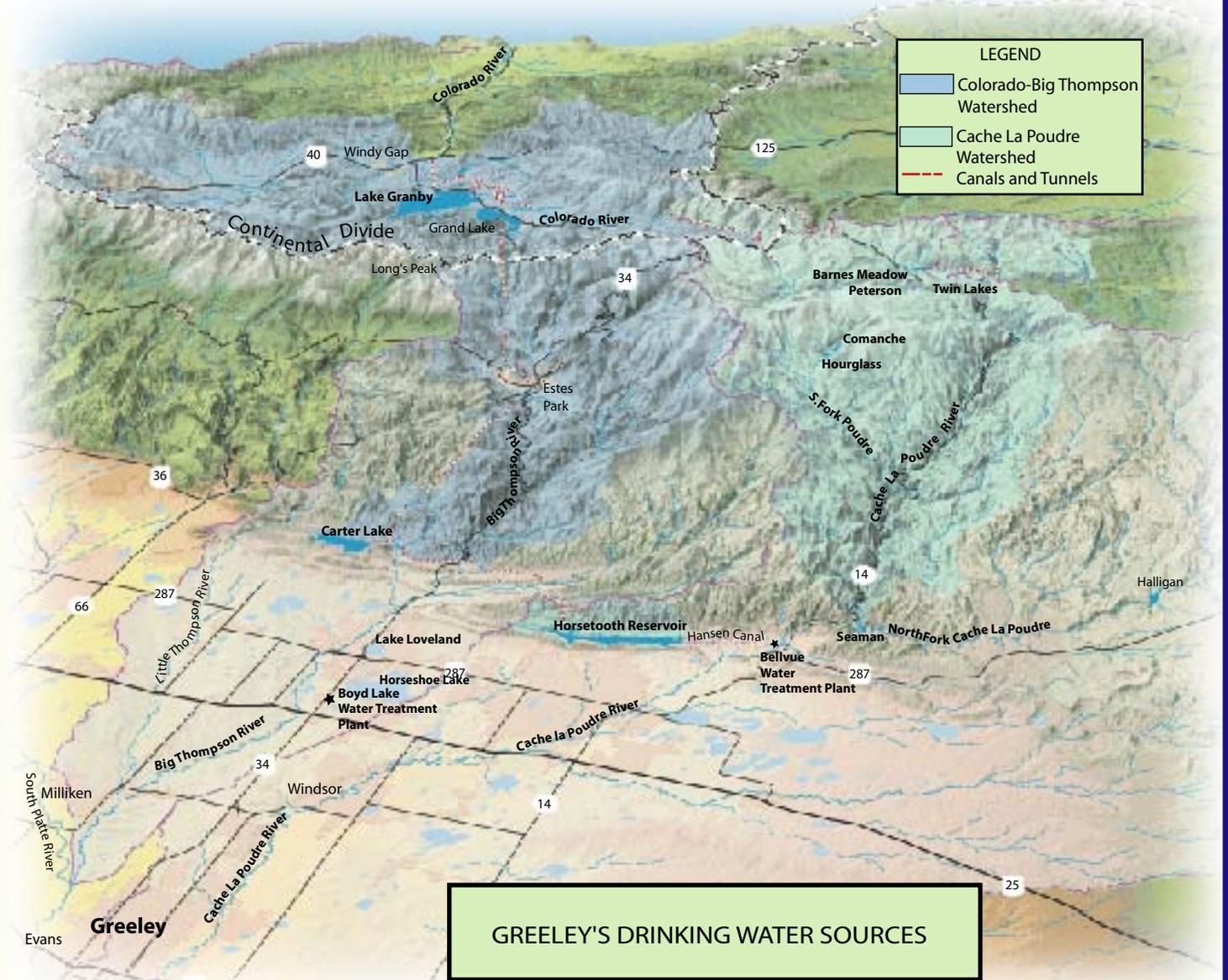
Greeley treats raw water from its various sources at either the Boyd Lake Water Treatment Facility near Loveland, or at the Bellvue Water Treatment Facility north of Fort Collins. The Boyd Lake Facility normally operates April through October to accommodate increased demand from lawn watering. The Bellvue Facility operates year-round. The treated water is then piped to Greeley where it is distributed to you, the customer, or stored in one of three finished water reservoirs prior to distribution.

## Protecting Our Watersheds

Source water is untreated water from streams, rivers, lakes or underground aquifers, which is used to supply public drinking water. The Colorado Source Water Assessment and Protection (SWAP) Program is designed to provide you, the public consumer, information about the sources of your drinking water, as well as provide the community a way to get involved in protecting the quality of drinking water. The program encourages community-based protection and preventive management strategies to ensure that all public drinking water resources are kept safe from future contamination. The SWAP program currently is working on completing an assessment of Colorado's source waters. For information about the program and source water assessment, visit [www.cdph.state.co.us/wq/sw/swaphom.html](http://www.cdph.state.co.us/wq/sw/swaphom.html).



As a member of the Big Thompson Watershed Forum, Greeley collaborates with other communities and organizations to monitor and analyze water quality as it flows through the Big Thompson Watershed. The information gathered through the monitoring program will be used to inform customers about source water quality and to bring about improved protection of this watershed. For more information about how you can become involved contact the Big Thompson Watershed Forum at 970.613.7951; or, visit [www.btwatershed.org](http://www.btwatershed.org).



# DRINKING WATER QUALITY

The Safe Drinking Water Act establishes the standards for most drinking water systems in the country, including Greeley's. In 2003, the Greeley drinking water system operated without exemption (i.e., state or federal permission not to meet a standard under certain conditions). However, our water system did receive a waiver (permission not to test for specific contaminants) from the State of Colorado for cyanide, asbestos, dioxin and glyphosate. A waiver was provided because it is unlikely that these contaminants would be found in our drinking water. The City routinely monitors for a long list of contaminants in our drinking water according to state and federal laws. The tables identify drinking water contaminants that Greeley detected in the water, the levels detected, and the EPA-mandated maximum allowable levels. As you peruse the tables, you will see that Greeley met all drinking water standards despite challenges from drought conditions.

## DRINKING WATER QUALITY TEST RESULTS

Sampling was performed from January 1 - December 31, 2003, unless otherwise indicated.

VOLATILE ORGANIC CONTAMINANTS				Violation Yes/No	Contaminant Source in Drinking Water
Contaminant, Units	MRDLG	MRDL	Range and Average Levels Detected		
Chlorine Dioxide, ppb	800	800	Range: 0 - 390 Highest Monthly Average: 27	No	Water additive used to control microbes
Chlorine residual, ppm	4	4.0	Range: 0 - 1.4 Highest Annual Average: 0.72	No	Water additive used to control microbes
Contaminant, Units	MCLG	MCL	Range and Average Levels Detected	Violation Yes/No	Contaminant Source in Drinking Water
Chlorite, ppm	0.8	1.0	Range: Not detected - 0.69 Highest Monthly Average: 0.56	No	By-product of disinfection
Haloacetic Acids, (HAA5), ppb	N/A	60	Range: 10 - 66 Highest Annual Average: 29	No	By-product of disinfection
Total trihalomethanes, (TTHM), ppb	N/A	80	Range: 22 - 107 Highest Annual Average: 54	No	By-product of disinfection
Compliance with the TTHM and HAA5 standards are based on an annual average of samples taken throughout the distribution system. N/A (not applicable) means that there is no MCLG for HAA5s or TTHMs.					
<b>Some people who drink water that contains trihalomethanes in excess of the MCL standard over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.</b>					

### Definitions and 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 contaminant in drinking water below which there are 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 are no known or expected risks to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- pCi/l:** Pico curies per liter, a measure of radioactivity.
- ppb:** Parts per billion or micrograms per liter (ug/l). One ppb is the same as one minute in 2,000 years or a single penny in \$10,000,000.
- ppm:** Parts per million, or milligrams per liter (mg/l). One ppm is the same as one minute in two years or a single penny in \$10,000.
- TT:** Treatment technique. A required process intended to reduce the level of a contaminant in drinking water.

MICROBIOLOGICAL CONTAMINANTS				Violation Yes/No	Contaminant Source in Drinking Water	
Contaminant, Units	MCLG	MCL	Annual Removal Ratio			
Total Organic Carbon (TOC)	N/A	TT >= 1.0	Bellvue: 1.27 Boyd Lake: 1.13	No	Naturally present in the environment	
Compliance with the TOC standard is based on how much organic carbon is removed from the raw water. If the annual removal ratio is greater than or equal to 1.0, the water system is in compliance with the treatment technique (TT) standard. N/A (not applicable) means that there is no MCLG for Total Organic Carbon.						
Contaminant, Units	MCLG	MCL	Percentage of Measurements Below The Limit	Highest Single Value	Violation Yes/No	Contaminant Source in Drinking Water
Turbidity, NTU (Nephelometric Turbidity Unit)	N/A	TT <= 0.3 TT <= 1.0	99.99% 100%	0.28	No	Soil runoff
There are two treatment technique (TT) 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. N/A (not applicable) means that there is no MCLG for turbidity.						

INORGANIC CONTAMINANTS				Violation Yes/No	Contaminant Source in Drinking Water	
Contaminant, Units	MCLG	MCL	Range and Highest Value Detected			
Barium, ppm	2	2	Range: 0.015 - 0.051 Highest: 0.051	No	Erosion of natural deposits	
Fluoride, ppm	4	4	Range: 0.7 - 0.83 Highest: 0.83	No	Water additive that promotes strong teeth	
Selenium, ppb	50	50	Range: Not detected - 1 Highest: 1	No	Erosion of natural deposits	
Contaminant, Units	MCLG	MCL	90 <sup>th</sup> Percentile Value	# of Homes Exceeding Action Level	Violation Yes/No	Contaminant Source in Drinking Water
Lead, ppb	0	AL=15	3	0	No	Corrosion of household plumbing systems
Copper, ppm	1.3	AL=1.3	0.14	0	No	Corrosion of household plumbing systems
The data presented for lead and copper are from the most recent testing performed in 2002. The 90 <sup>th</sup> percentile value represents the highest concentration that is exceeded by 10% of the taps sampled. AL (Action Level) is the concentration of a contaminant such as lead or copper, that if exceeded, triggers treatment or other requirements that a water system must follow.						

RADIOLOGICAL CONTAMINANTS				Violation Yes/No	Contaminant Source in Drinking Water
Contaminant, Units	MCLG	MCL	Range and Highest Value Detected		
Alpha emitters, PCI/L	0	15	Range: Non detected - 5 Highest: 5	No	Erosion of natural deposits
The data presented for radiological contaminants is from the most recent testing performed in 2001.					

In 2003, we also monitored a long list of other contaminants that were not detected in your drinking water. To obtain a list of these undetected contaminants, you may call 350.9209. In addition, we are also required to monitor for certain unregulated (that have no MCL) contaminants. Of the unregulated contaminants, sodium was detected at 26 ppm at the Boyd Lake Water Treatment Plant and at 9 ppm at the Bellvue Water Treatment Plant.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those with cancer undergoing chemo-therapy, 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/Center 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).



Vulnerable Populations

The EPA Safe Drinking Water Hotline Number is 800-426-4791

### Nitrate Monitoring

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. In 2003, the City of Greeley completed all required monitoring. However, the Colorado Department of Public Health & Environment laboratory that performs certain testing for Greeley, failed to report to us the results of a single nitrate test for the Boyd Lake Treatment Plant. Greeley did not catch the omission, and consequently, did not fully comply with its monitoring obligation for nitrate in 2003 and therefore must notify the public in this report. Fortunately, nitrate historically has been detected in Greeley's water at very low levels, if at all. In fact, the nitrate levels at both the Bellvue and Boyd Lake Treatment Plants were not detectable during the last three (2000, 2001, and 2002) reporting years. The highest level that nitrate has ever been detected was in 1999 when the Boyd Lake result was 0.13 ppm. The maximum contaminant level (MCL) for nitrate is 10 ppm.

The MCL for nitrate is 10 ppm. The highest that nitrate has ever been detected in Greeley water is 0.13 ppm.

### Bottled Water

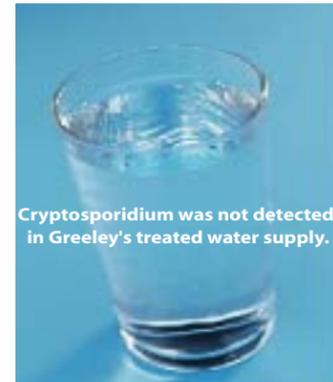


Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants

In order to ensure that tap water in Colorado is safe to drink, the Colorado Department of Public and Environment prescribes regulations which limit the amount of certain contaminants in drinking water provided by Colorado public water systems. Similarly, the United States Food and Drug Administration ("FDA") regulations establish limits for contaminants in bottled water that 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. However, 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 at 800.426.4791.

### A Word About Cryptosporidium

Cryptosporidium is a microorganism that is found in rivers and lakes across Colorado. It can cause a severe intestinal disorder in people, and consequently, is receiving increasing attention by drinking water professionals. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people face a greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to ask their doctor about appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water. In 2003, Cryptosporidium was detected in source water supplied by the Cache la Poudre River. Current test methods do not allow us to determine whether the organisms were dead or capable of causing disease. Cryptosporidium is eliminated from drinking water by an effective treatment combination, including coagulation, sedimentation, filtration, and disinfection (all of which Greeley does). The City did not detect the organism in its treated water supplies.



Cryptosporidium was not detected in Greeley's treated water supply.