

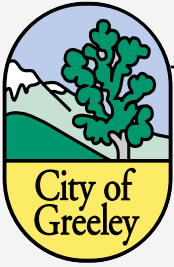
Annual Drinking Water Quality Report

City of Greeley, Colorado
for Reporting Year 2001



● Esta información es importante. Si usted necesita ayuda por favor llámenos y le ayudaremos con gusto. Si tiene alguna pregunta llame al teléfono (970) 350-9720.

PWS ID# 162321



June 2002

Dear Water Customer:

This is the fourth annual water quality report for the City of Greeley drinking water system. This report covers calendar year 2001 and contains important information about the quality of your drinking water. Please take a few minutes to review the report, and contact us with any questions or comments about the information it contains.

Greeley Water operated without violation, variance, or exemption regarding all drinking water quality requirements during all of 2001. Your water meets or exceeds all applicable federal, state, and local standards for drinking water quality. We intend to continue to provide you with a high quality product at the lowest possible cost, protecting public health to the utmost of our ability.

As I write this, drought is on everybody's mind as we are entering a third consecutive drought year. Drought brings a unique set of water quality concerns as reservoirs get low and forest fires threaten our watersheds. After years of planning and building, Greeley has adequate water in storage for a multi-year drought. Although the water treatment challenge increases in dry years, our product will always be safe and it will be as tasty as we can make it with modern technology.

Some people who drink Greeley water are not billed directly, and may not receive a copy of this report. If you own or operate a facility that provides water to customers, employees, or tenants (such as campgrounds, apartments, dormitories, mobile home parks, or manufacturing facilities) please post copies of this report on a message board or other common area so everyone who relies on Greeley's water can see the quality.

Sincerely,

Jon G. Monson, Director
Water and Sewer Department



Photo Cover: Cache la Poudre River at the mouth of Poudre Canyon
John McCutchar

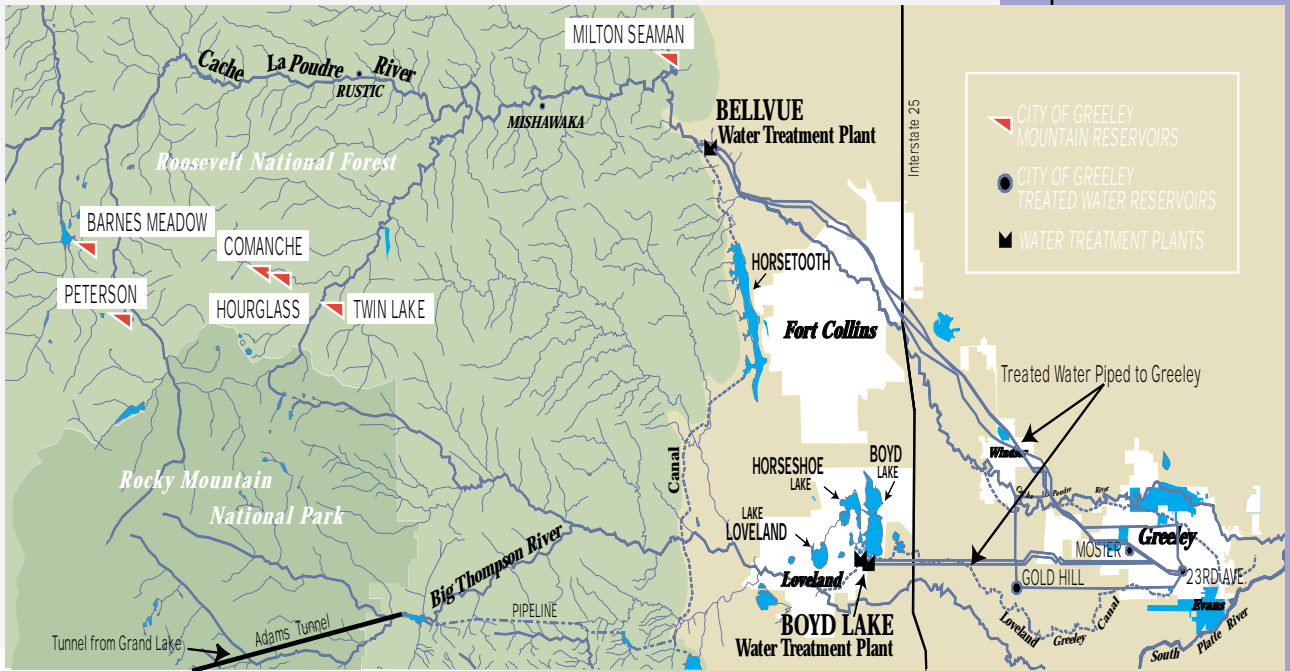
JOHN MCCUTCHAR

Photo: Mainstem at the Cache la Poudre at the confluence with the North Fork

S E R V I N G O U R C O M M U N I T Y • I T ' S A T R A D I T I O N

We promise to preserve and improve the quality of life for Greeley through timely, courteous and cost effective service.

City of Greeley Water System Map



Why Am I Receiving This Report?

Congress amended the Safe Drinking Water Act in 1996 to require most drinking water suppliers to provide customers with annual reports on the quality of their drinking water. The first such reports were required for data generated during calendar year 1998. Greeley distributed that report to its customers in the fall of 1999. This, the fourth annual water quality report, covers data from calendar year 2001 for the City of Greeley public water system.^A The report provides an excellent opportunity for our customers to increase their knowledge of the quality of the water they consume, and of the Greeley water system in general.

Where Does Greeley Get Its Water?

Greeley has a large and complex water system for a town its size. As you know, Greeley is located in a semi-arid climate, which receives only about 14 inches of precipitation annually. To provide reliable drought protection, the City's drinking water comes from surface waters located in three major river basins: the Cache la Poudre River, the Big Thompson River, and the Colorado River.

The Big Thompson basin is west of Greeley and extends to Rocky Mountain National Park. The Cache la Poudre basin stretches from Greeley into the mountains and national forest north and west of Fort Collins to the Continental Divide near the Alpine Visitors' Center in Rocky Mountain National Park. The Colorado-Big Thompson Project, administered by the Northern Colorado Water Conservancy District, diverts water from the Colorado River basin on the Western Slope, through the Adams Tunnel underneath Rocky Mountain National Park, to water users on the eastern plains. Greeley owns rights to about seven percent of this Colorado-Big Thompson Project water.

continued next page

^A The State of Colorado and Environmental Protection Agency identify the Greeley public water system with identification # 162321



JOHN MCCUTCHAN

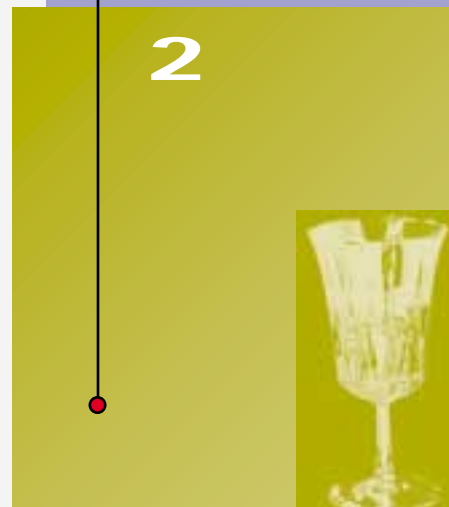


Photo: Little south tributary of the Cache la Poudre at Pingree Park Road



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“Greeley is located in a semi-arid climate, which receives only about 14 inches of precipitation annually.”

continued from page 2

Greeley 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. Greeley also uses a plains reservoir system (Boyd Lake, Lake Loveland, and Horseshoe Lake) to provide storage for peak summer demands.

Greeley treats the water from its various sources at either the Boyd Lake Filter Plant near Loveland, or the Bellvue Filter Plant north of Fort Collins. The Boyd Lake facility normally operates April through October to accommodate increased demand from lawn watering and the Bellvue plant operates year-round. The treated water is then piped to Greeley where it is directly distributed to customers, or stored in one of three finished water reservoirs prior to distribution. The multiple treatment plants and finished water reservoirs provide important redundancy and operational flexibility necessary to help ensure a safe and adequate water supply under reasonably anticipated operating conditions. **The map on page 2 shows the geographic extent and layout of the City's water supply system.**

Greeley also has agreements with neighboring water purveyors whereby Greeley may provide water to, or receive water from, these entities under special circumstances, such as water main repair, unusual demand, or plant shutdown. Pursuant to these agreements, Greeley received water from the West Fort Collins Water District, the East Larimer County Water District, and the North Weld Water District totaling about 98.7million gallons. This is a tiny fraction (about 0.01%) of the 9 billion gallons Greeley provided to its customers. Such a small percentage should have no real impact on the data presented in this report. However, if you wish to obtain a water quality report from these entities, please call 350-9209.

What Contaminants are Common in Drinking Water?

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 accumulate 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, 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.



In order to ensure that tap water is safe to drink, the United States Environmental Protection Agency ("EPA") limits the amount of certain contaminants allowed in drinking water provided by public water systems. Similarly, the United States Food and Drug Administration ("FDA") limits the amount of contaminants allowed in bottled water.

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. More information about contaminants and potential health effects can be obtained by calling EPA's Safe Drinking Water Hotline (800-426-4791).

Special Considerations for Immuno-Compromised Individuals

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those 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. 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).

What is the Quality of the Water Delivered to My Tap?

The Safe Drinking Water Act establishes the standards for most drinking water systems in the country, including Greeley's. Greeley complied with all applicable standards in 2001 without operating under any variance or exemption (i.e., state or federal permission not to meet a standard under certain conditions). The City routinely monitors for contaminants in your drinking water according to federal and state laws. **Table 1** identifies drinking water contaminants that Greeley detected in its water, the contaminant levels detected, and the maximum allowable levels for these contaminants. All such contaminants were detected at levels well below applicable health limits. **Table 2** identifies the contaminants for which the City was required to test, but which were not detected, along with maximum allowable levels for such contaminants. Sampling was performed between January 1 and December 31, 2001, unless otherwise indicated. The following definitions will help you understand the information presented in the tables:

- **Maximum Contaminant Level Goal or 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 Contaminant Level or 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.
- **Action Level:** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.
- **Treatment Technique:** A required process intended to reduce the level of a contaminant in drinking water.
- **Waiver:** State permission not to test for a specific contaminant.



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





Key to the Tables:

MCL=Maximum Contaminant Level

MCLG=Maximum Contaminant Level Goal

n/a=Not Applicable

Non-Detect=(laboratory analysis indicates that the constituent is not present)

NTU=Nephelometric Turbidity Units (a measure of turbidity or cloudiness)

pCi/l=picocuries per liter (a measure of radioactivity)

ppm=parts per million, or milligrams per liter (mg/l) (one ppm corresponds to one minute in two years or a single penny in \$10,000)

ppb=parts per billion, or micrograms per liter (ug/l) (one ppb corresponds to one minute in 2,000 years, or a single penny in \$10,000,000)

ppt=parts per trillion or nanograms per liter (one ppt corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000)

ppq=parts per quadrillion, or picograms per liter (one ppq corresponds to one minute in 2,000,000,000 years, or a single penny in \$10,000,000,000,000)

Table 1: Detected Contaminants

Contaminant (Units)	MCLG	MCL	Level Detected in Greeley Finished Water	Violation Yes/No	Major Source of This Contaminant In Drinking Water
Microbiological Contaminants					
Turbidity (NTU)^(A)	n/a	Treatment Technique	Highest Single Value: 0.27 Lowest Single Monthly Percentage of Samples Meeting the Turbidity Limits: 100%	No	Soil runoff
Inorganic Contaminants					
Barium (ppm)	2	2	Range: 0.012 to 0.061	No	Discharge of drilling wastes; Erosion of natural deposits
Copper (ppm)^(B)	1.3	Action Level=1.3	90 th Percentile Value: 0.29 ^(C) Number of Sites Exceeding Action Level: 0 out of 40	No	Corrosion of household plumbing systems
Fluoride (ppm)	4	4	Range: 0.45 to 0.84	No	Erosion of natural deposits; Water additive that promotes strong teeth
Lead (ppb)^(B)	0	Action Level=15	90 th Percentile Value: 4 ^(C) Number of Sites Exceeding Action Level: 1 out of 40	No	Corrosion of household plumbing systems
Radiological Contaminants					
Alpha emitters (pCi/l)	0	15	Range: Non Detect—5	No	Erosion of natural deposits
Volatile Organic Contaminants					
TTHMs (Total trihalomethanes) (ppb)	n/a	100	Average: 53.06 ^(D) Range: 38.06 to 67.91	No	By-product of drinking water chlorination

(A) Turbidity is a measure of the cloudiness of the water. The City monitors turbidity because it is a good indicator of the effectiveness of our filtration system.

(B) The data presented are from the most recent testing performed in accordance with the regulations (September 1999).

(C) This statistical expression is used to measure compliance. It indicates that 90% of all sample results were equal to or lower than this value.

(D) This figure represents the highest yearly running average during 2001.

(E) These figures represent the range of the levels detected during 2001.

In addition to sampling for the foregoing regulated contaminants, Greeley sampled for unregulated contaminants. Unregulated contaminant monitoring helps EPA identify where certain contaminants occur, and determine whether it should regulate those contaminants in the future. Greeley detected one unregulated contaminant in 2001:

Sodium: Range of levels detected - 7.6 to 29 ppm
Average of the levels detected - 18.3 ppm^A

In 2001, Greeley received a waiver (permission from the State) not to test for glyphosate, nitrite, cyanide and asbestos because it is unlikely that these contaminants would be found in our drinking water. Greeley also did not test for dioxin because of the statewide waiver from testing for this contaminant.

^A EPA has not set an enforceable limit on sodium in drinking water. It has identified a non-enforceable guidance level of 20 ppm, which even the Agency admits is probably too conservative.

Table 2: Regulated Contaminants Tested for but Not Detected

Contaminant (Units)	MCLG	MCL	Level Detected in Greeley Finished Water	Violation Yes/No	Major Source of This Contaminant In Drinking Water
Microbiological Contaminants					
Total Coliform Bacteria	0	For systems that collect 40 or more samples per month (such as Greeley's), 5% of the monthly samples are positive	Non-Detect	No	Naturally present in the environment
Fecal Coliform and <i>E. coli</i>	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or <i>E. coli</i> positive	Non-Detect	No	Human and animal fecal waste
Radioactive Contaminants					
Beta/photonemitters (pCi/l)	0	50 ^(A)	Non-Detect	No	Decay of natural and man-made deposits
Inorganic Contaminants					
Antimony (ppb)	6	6	Non-Detect	No	Discharge from petroleum refineries; Fire retardants; Ceramics; Electronics and Solder
Arsenic (ppb)	n/a	10	Non-Detect	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Beryllium (ppb)	4	4	Non-Detect	No	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries
Cadmium (ppm)	5	5	Non-Detect	No	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints
Chromium (ppb)	100	100	Non-Detect	No	Discharge from steel and pulp mills; Erosion of natural deposits
Mercury [inorganic] (ppb)	2	2	Non-Detect	No	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Nitrate/Nitrite (ppm)	10	10	Non-Detect	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion from natural deposits
Selenium (ppb)	50	50	Non-Detect	No	Erosion of natural deposits
Thallium (ppb)	0.5	2	Non-Detect	No	Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories

^(A) EPA considers 50 pCi/l to be the level of concern for beta particles. However, the MCL identified in EPA's regulation is 4 millirems ("mrem") per year. Millirems are a measure of radiation absorbed by the body. If a water system detects beta particles above 50 pCi/l, it must calculate whether the 4 mrem limit has been exceeded.



“After years of planning and building, Greeley has adequate water in storage for a multi-year drought.”





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JOHN MCCUTCCHAN

Greeley Receives \$12 Million Upgrade For Modernization of Old Filter Plant

Construction at the Bellvue Water Treatment Plant (photo at left) began in October of 2000, and is scheduled to be completed some time this year. The upgrade objectives include:

- Consolidate and modernize all chemical feed systems used to treat the water.
- Improve efficiency and flexibility.
- Provide on-site water storage.
- Enhance process control and monitoring via computerized system.

Completion of the upgrade will allow plant staff to produce an even higher quality water which is necessary to meet new and more stringent water quality regulations imposed by the EPA. The new regulations went into effect on January 1, 2002.

How Can I Help Protect Greeley's Water Supply?

Managers of public water systems continually are asked to meet more stringent regulations on the product that they supply to their communities. Historically, this tightening of standards has been approached through the application of more sophisticated treatment techniques. There is a developing movement that not only supports the idea of using the best quality water source possible, but also recognizes that watershed management may be the most cost-effective approach to maintaining a safe and reliable water supply.

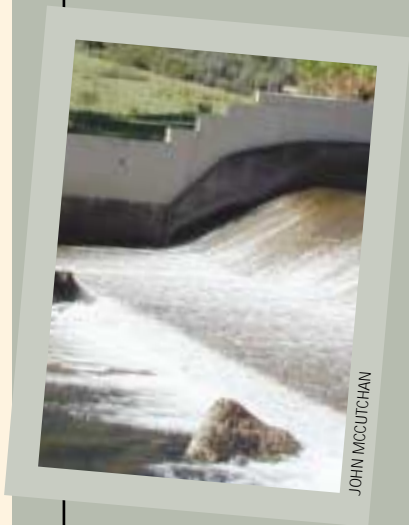
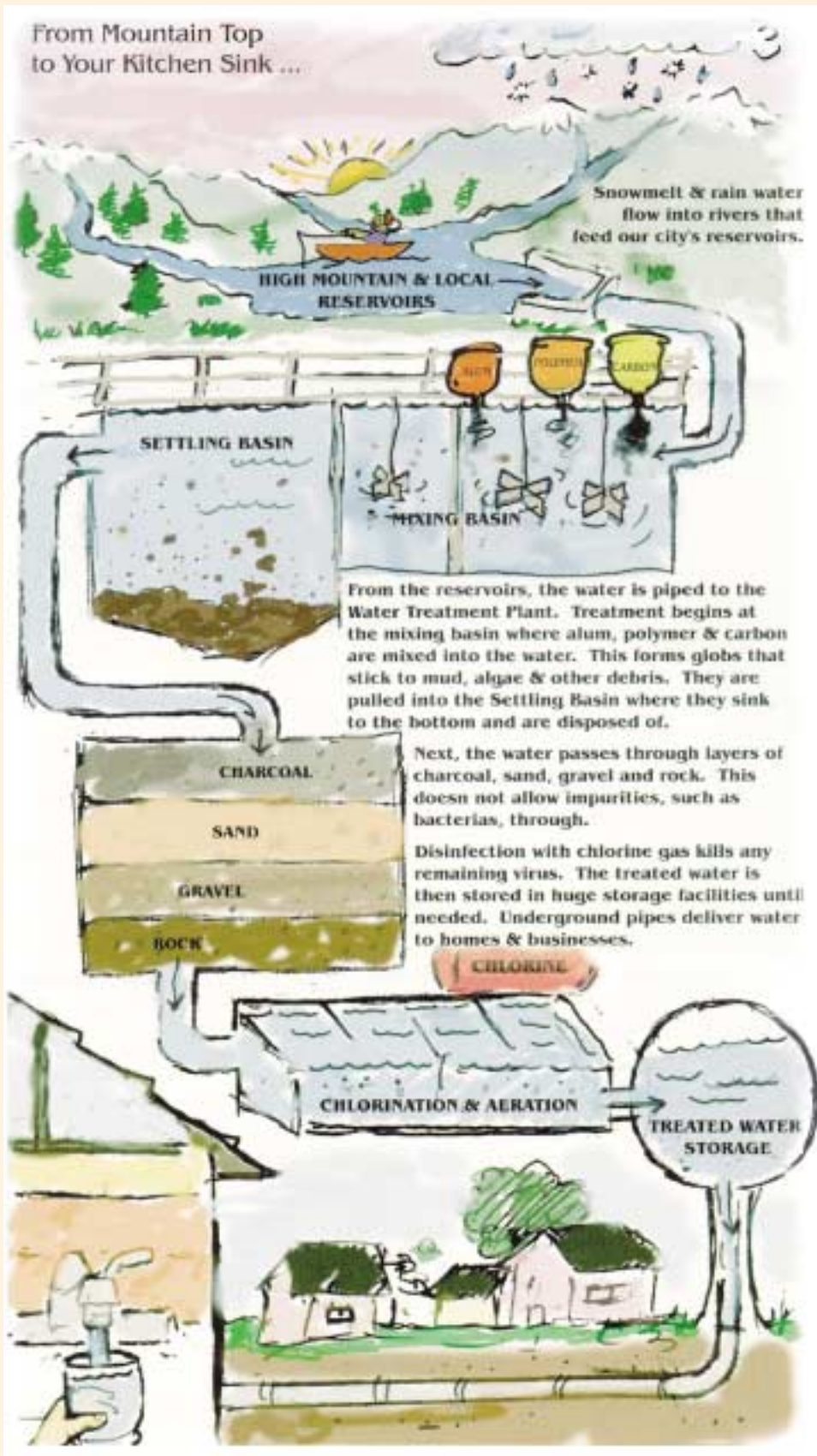
The 1996 Safe Drinking Water Act Amendments directed that each state develop a Source Water Assessment and Protection (SWAP) Program. This Program is designed to provide the consuming public information about their drinking water, as well as provide the community with a way to get involved in protecting the quality of that drinking water. The concept behind SWAP is that by providing citizens with fundamental knowledge about their drinking water sources, they will be the most effective advocates for protecting it. The State of Colorado will perform the source water assessments for public water supplies across the State. When the assessments are complete in August 2003, the information will be available to the public. For more information on Colorado's SWAP Program, visit <http://www.cdphe.state.co.us/wq/sw/swaphom.html>.

The City of Greeley, in anticipation of the SWAP program, has initiated and completed several years of water quality monitoring programs on the two watersheds that are used for our source water—Cache la Poudre River and the Big Thompson River. The City has been actively involved in the creation and development of the Big Thompson Watershed Forum (www.btwatershed.org), which provides the opportunity to participate in a collaborative effort specifically dedicated to assessing and protecting water quality in the Big Thompson watershed. The City is also actively involved in the early stages of creating a similar forum on the Cache la Poudre watershed. For information on EPA's national pilot source water assessment for the Cache la Poudre River, visit <http://ccdd.uccs.edu/EPAM/SourceWater/Cachelapoudre/>.

Both the Big Thompson and Cache la Poudre Watershed Forums provide an opportunity for the public to take a broader look at the issues that contribute to water quality. By making this a collaborative, geographical effort, we provide a place to effectively address regional water quality concerns for the benefit of all. The City encourages your involvement. For further information on how you can get involved, contact John McCutchan at (970) 482-2446.

“Managers of public water systems continually are asked to meet more stringent regulations.”





Construction at the Bellvue Water Treatment Plant began in October of 2000, and is scheduled to be completed some time this year.

Photo: Water diversion structure on the Cache la Poudre River



“Outdoor use, mostly lawn watering, clearly accounts for the vast majority of Greeley's water consumption.”

New Regulation for Safer Water: *City of Greeley Staff Participate in Drinking Water Rulemaking Process*

The Safe Drinking Water Act amendments of 1996 required the EPA to develop new drinking water regulations. A group of these regulations, known as the Microbial and Disinfection Byproduct Rules, address microscopic organisms, disinfectants such as chlorine, and potential problems caused by disinfectants in drinking water. The Colorado Department of Public Health and Environment is required to adopt the new regulations into the State's drinking water laws. In July of 2001, the State of Colorado began a series of special rulemaking meetings to provide the public opportunity to take-part in writing the regulations to fit Colorado community drinking water systems. Staff from the City of Greeley Water and Sewer Department and staff from other local communities participated in these meetings and provided direct input as the Microbial and Disinfection Byproduct Rules were adopted into the State of Colorado drinking water laws.

Participation in the rulemaking process affords the public maximum opportunity for input on regulations that are created in Washington, DC and required to be implemented in your community. Greeley participates in the rulemaking process because it is important to have a voice wherever possible in writing regulations that affect the quality of your drinking water. New and more stringent regulations are just around the corner. Stage 2 of the Microbial and Disinfection Byproduct Rules are scheduled to be introduced later this year and the State of Colorado will be required to adopt the new regulations into its drinking water laws. Again, Water and Sewer Department staff will participate in the rulemaking process in order to assist in providing maximum public health protection at the lowest reasonable cost.

Water Conservation

The average Greeley water customer uses 198 gallons of water each day. This may surprise you especially if you consider that other Front Range communities use an average of 160 gallons per person each day. You may even question this—thinking only of the amount of water you drink. However, the amount that we actually drink is very insignificant—about 2 tenths of 1 percent of our total water use.

Outdoor use, mostly lawn watering, clearly accounts for the vast majority of Greeley's water consumption. As you might expect, demand peaks during the hot summer months. Water demand during the winter of 2001 was between 12 and 14 million gallons per day. However, the greatest demand for a single day in the year 2001 was about 47million gallons, more than three times the winter indoor demand.

Unfortunately, the City cannot design its drinking water facilities to accommodate average demand, but must ensure that its system can satisfy peak demand levels, which continue to increase as Greeley grows. This means building expensive additional treatment capacity, which, in turn, means higher water rates. Conservation is a way to lower peak demand and thus control water rates by postponing the need for building additional treatment capacity. As part of its overall master plan, Greeley will continue to expand the current water conservation program to meet future water needs.

Where Can I Get Further Information?

If you would like further information on the material covered in this report, call Angela Miles, City of Greeley Regulatory Compliance Coordinator at (970) 350-9209. You can also access information about drinking water in general on EPA's drinking water web site at <http://www.epa.gov/safewater/>. Additionally, interested persons may attend public meetings of the City's Water and Sewer Board, which are usually held on the third Wednesday of every month at the Greeley City Hall. For more information on the times, dates, and location of Water and Sewer Board meetings, call Norma Wegher at (970) 350-9812.



More About Greeley's Water from the Director

Four years ago Greeley Water began a master planning process that is coming to conclusion this summer. As everyone expected, obtaining pure plentiful reliable water is becoming more and more expensive. Growth, ever more strict federal regulations, and the need to replace the aging parts of our existing water infrastructure are expected to cost over \$200 million dollars over the next twenty years. Both the Water Board and City Council have adopted a policy that growth will pay its own way, so much of that cost will be paid for by those who want to join us in our All American City. As is fair, existing Greeley ratepayers will have to pay for upgrades to their existing filter plants to meet new regulations and for renewal as their 30 and 50-year-old filter plants come to the end of their useful life. New and replacement technology will be expensive but will produce superior water quality, for which Greeley is known.

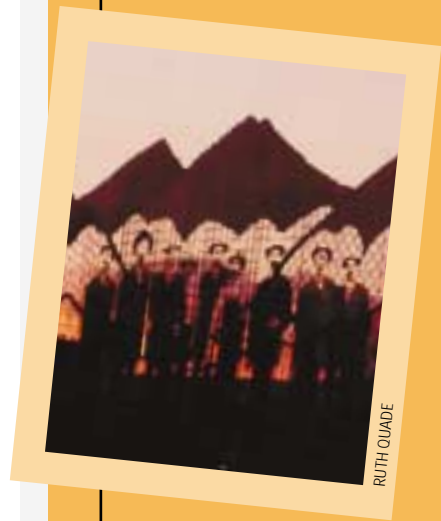
While your water quality is of supreme importance, today quantity, (spell that "drought") is on everyone's mind. Greeley's forefathers, who lived through the droughts of the 30's and 50's, created a robust water system spread over three river drainage basins. Greeley's citizens have been building and paying for this extensive water system for almost 100 years, and we are prepared for an extended drought. This is the first year in almost a half century that Greeley's annual water demand may be greater than annual supply, and thus water from our multi-year storage reservoirs could be required to meet demand. Today Greeley has enough water in long-term storage to meet over 11 months demand. Considering our broad water rights portfolio, which will produce some water even in a drought, we feel this amount of storage is more than enough for our projected needs this year. Greeley therefore intends to share about 20% of the stored water with our local agricultural community in 2002. Greeley Water is trying to strike a balance between helping our neighbors in time of need and maintaining a high level of service to city water customers in a multi-year drought.

Predicting water supplies is highly uncertain because it depends on forecasting the weather two and three years from now. Because Colorado's last severe drought occurred in 1954, managing a drought is new to all of us and some of our decisions may look ill advised a couple of years from now, especially if the dry spell gets a whole lot worse. But to the best of our ability and based on the best analysis available of our robust water supply system, Greeley should not have any drought-induced watering restrictions for this year. And of course, your water quality will continue to be as good as we can possibly make it.

After the events of September 11, Greeley took additional security precautions to protect your water system. The EPA has made funds available for increased security measures and Greeley has applied for those funds as well. After a vulnerability assessment to be completed later this year, still further steps may be advisable. We request your cooperation and apologize for any inconvenience we may cause in our efforts to keep your water system safe.

Long-term, there are three solutions to Greeley's water needs: 1) Changing water now used for agriculture to use by the city, with the corresponding reduction of our agricultural economy; 2) Construction of both major and minor storage reservoirs; 3) Life-style changes that are more in sync with our arid environment (e.g. fewer lawns, parks, and trees; or at least much more efficient use of water in xeric landscaping and efficient sprinkler systems; or through use of nonpotable water). While the Greeley water master plan combines all three solutions, the primary goal of Greeley Water and of the Greeley Water Board is to provide plentiful pure water of the highest possible quality for a green Greeley and your Colorado lifestyle.

—Jon G. Monson, Director, Water and Sewer



“New and replacement technology will be expensive but will produce superior water quality, for which Greeley is known.”

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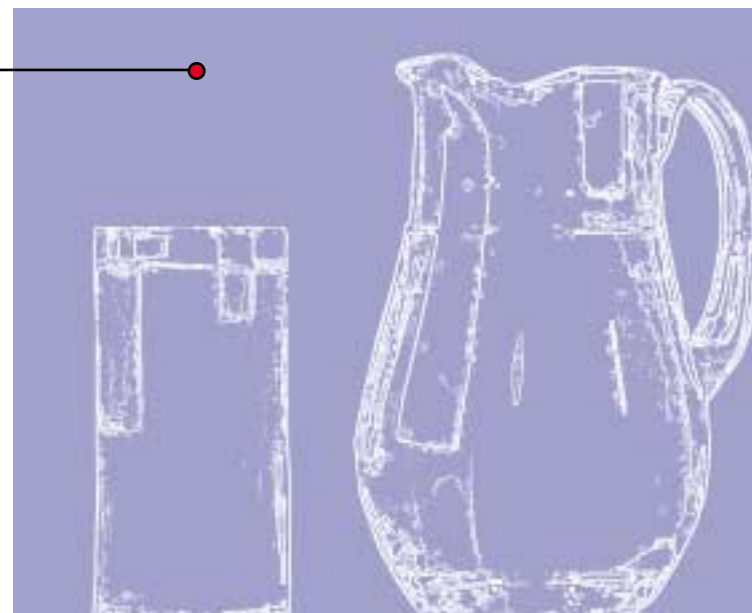
*City of Greeley
Water & Sewer Dept.
1100 10th Street
Greeley, CO 80631*

PRSRT STD
ECRWSS
U.S. POSTAGE
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GREELEY, CO
PERMIT NO. 593

Greeley Water Customer

Important Phone Numbers

Billing Questions	350 · 9720
Emergencies (Day 8-5)	350 · 9811
Emergencies (after hours)	350 · 9600
Español.....	350 · 9720
Line Locates	1 · 800 · 922 · 1987
Sewer Line Questions	350 · 9322
Taste and Odor Concerns.....	350 · 9324
Water Conservation	350 · 9874
Water Line Questions	350 · 9320
Water Quality Report	350 · 9209



970 · 350 · 9209

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