

ARVADA

2011 WATER QUALITY REPORT

The **CITY OF ARVADA** is pleased to provide you with our annual Water Quality Report. The purpose of this Report is to inform our customers about the high quality of their drinking water and their water system.

We want you to know where your water comes from, what it contains, and how it compares to stringent Federal water quality standards. The City of Arvada's drinking water meets all regulatory mandates and has never violated any of the strict standards regulated by the State of Colorado or the United States Environmental Protection Agency (EPA).

June 1, 2011

Dear Water Customer,

This is the annual Water Quality Report for the City of Arvada's drinking water system. This Report covers the calendar year 2010 and provides 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.

During the year 2010, the Arvada drinking water system operated without any type of violation, variance, or exemption concerning drinking water quality requirements. Your water supply meets all regulatory mandates and has never violated any Federal or State standard 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.

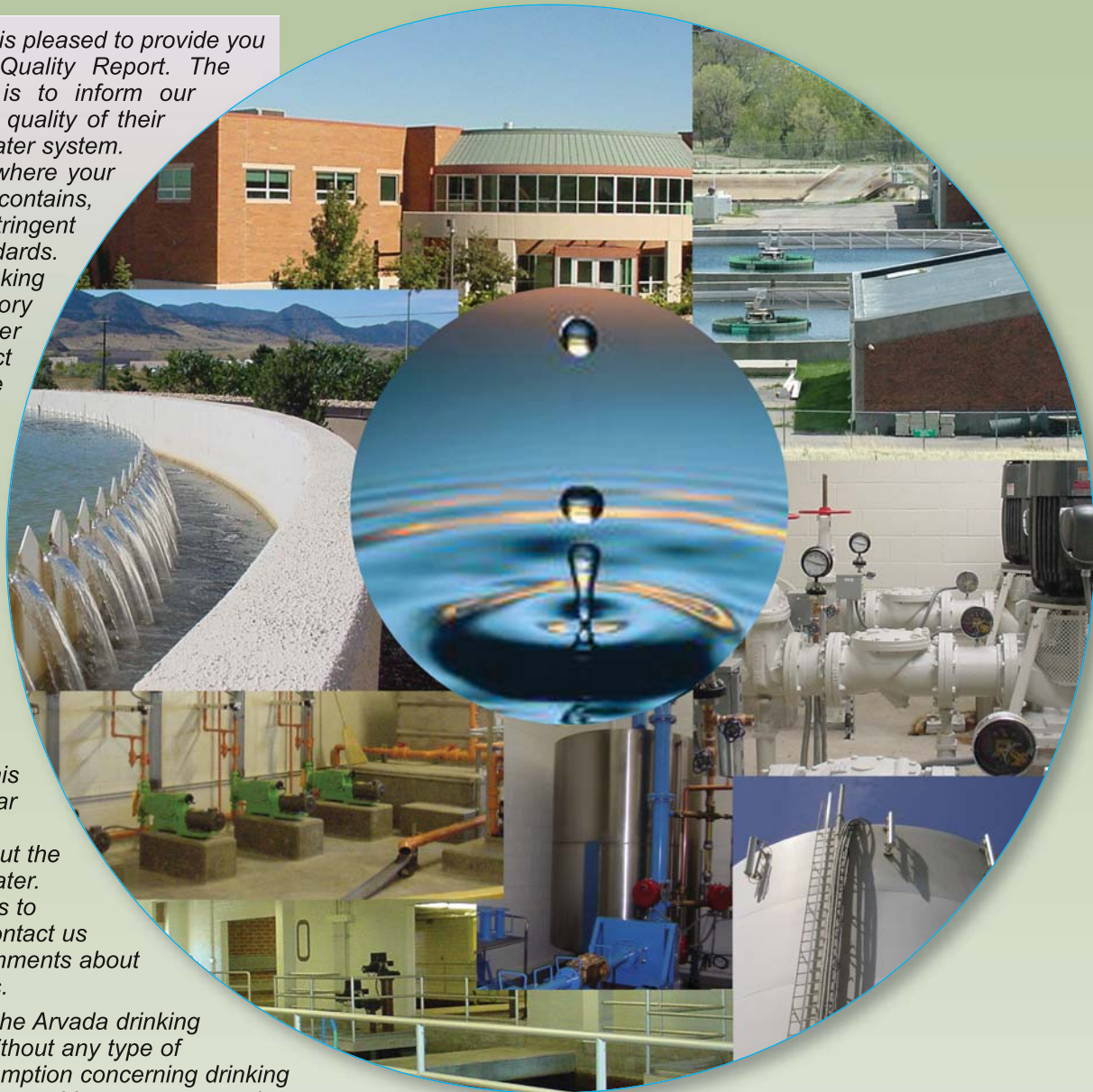
Some people who drink Arvada water are not billed directly, and may not receive a copy of this Report. If you own or operate a facility that provides water to customers, employees, or tenants whom we do not bill individually, please post copies of this Report on a message board or other common areas so everyone who relies on Arvada's water can view the Report. Additional copies of this Report may be obtained by calling 720.898.7800.

Thank you for giving us the opportunity to share with you this information about water quality in the City of Arvada.

Sincerely,



James M. Sullivan, Deputy Director of Utilities



GENERAL INFORMATION ABOUT DRINKING WATER



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. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

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 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.

PUBLIC NOTIFICATION

Should the City of Arvada violate any of the **Maximum Contaminant Levels** or treatment techniques, the *Safe Drinking Water Act* requires that we notify our water customers of the violation immediately:

By publication in a daily newspaper within 14 days following the violation; and

By mail delivery (direct mail or in the water bill) or hand delivery no later than 45 days following the violation; and

By radio and television for those violations the State Health Department deems an acute risk to human health, such as total coliform, fecal coliform, or nitrate.

The notification must also include mandatory language and health information contained in the EPA's Federal Register.

CROSS-CONNECTION CONTROL AND BACKFLOW PREVENTION

Backflow is the reversed flow of contaminated water into the City's distribution system through a cross connection. State regulations prohibit contaminated water from entering the public potable water supply through cross connections.

To prevent backflow in plumbing systems, City Code requires backflow prevention assemblies to be installed at specific locations in the system. The assemblies must be inspected and tested annually by a certified technician.

For more information about backflow prevention and cross-connection control, call the City at **720.898.7800**.

What about Water Conservation?

Using our water efficiently helps to protect our water supplies, especially during periods of drought. It is always important to conserve water and it should never be wasted. Only 1% of the earth's water can be used because 97% of the water is in the oceans and 2% is stored in the polar ice caps.

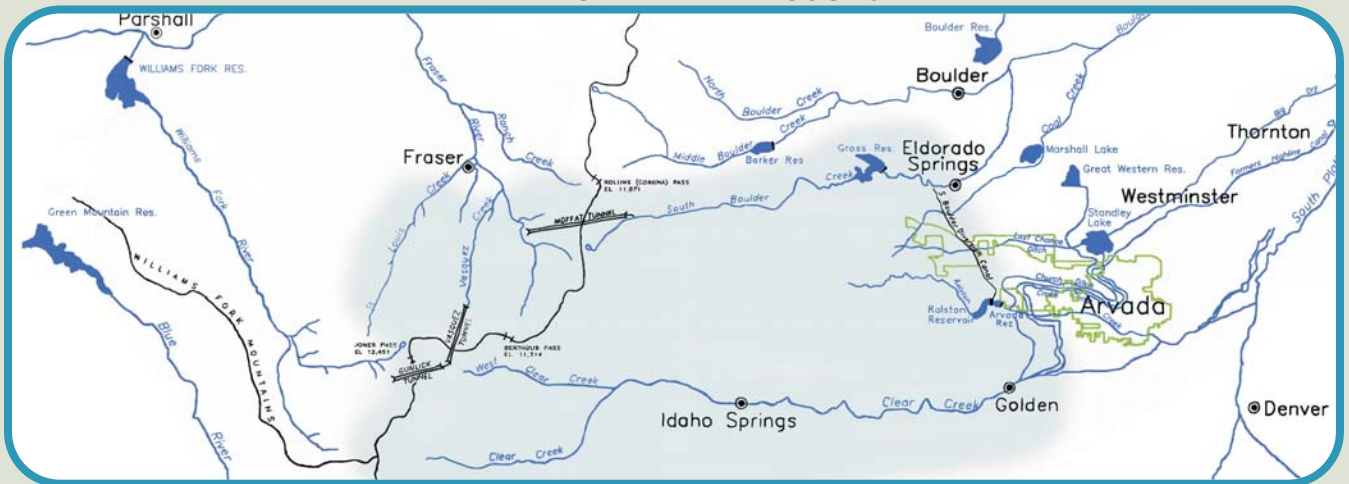
Therefore, it is very important to protect and conserve our water resources to help keep down the cost of collecting and preparing potable water. You can **protect** water resources by disposing of hazardous household waste appropriately. In Jefferson County, call the Rooney Road Recycling Center at **303.316.6262**. Remember to always follow the manufacturer's directions when applying or disposing of fertilizers or pesticides. This is also important in disposing of pharmaceuticals. Please read the directions on the disposal of all medical products.

You can **conserve** our water resources by designing your landscaping to reduce irrigation demands, and by trying to not waste water at home, work, or school. Conserving water also cuts water and sewer bills and reduces water heating costs. Using water wisely helps the City reduce costs and energy used to treat and pump drinking water and wastewater. Water conservation tips, drought information, and a copy of the City's updated Water Conservation Plan can be found online at <http://arvada.org/sustainability> under Water.

What about Stormwater?

When it rains or snows, stormwater runs off of residences, parking lots, and construction sites washing sediment, oil, grease, toxins, bacteria, and other pollutants into nearby storm drains. Once this pollution has entered the storm drains, it is discharged – untreated – into local waterways. The City of Arvada must address water quality degradation resulting from stormwater to satisfy State requirements to reduce the pollution that originates from urban run off through public education and business outreach. For information, visit the City's website at www.arvada.org or call **720.898.7800**.

ARVADA'S RAW WATER SOURCE



SOURCES OF ARVADA'S WATER

Arvada's drinking water comes from two surface water sources: the Denver Water Department's Moffat System and Clear Creek. The Moffat water system is our year-round source and is diverted from Denver's Ralston Reservoir. This snow melt, mountain water is collected from the Fraser River and South Boulder Creek Basins and transported first to Gross Reservoir and then to Ralston Reservoir. Approximately 25% of the City's water supply is diverted from Clear Creek where it is stored in the Arvada/Blunn Reservoir until needed during the spring and summer months when water demand is high.

WHAT ARE WATERSHEDS?

WHY ARE THEY IMPORTANT TO PROTECT?

A watershed is somewhat like a bowl. It is rimmed by ridgetops and high ground that direct the flow of water downhill toward the river in the valley below. This downward gravity flow of water also carries with it the effects of human activities throughout the watershed.

Protection of our watershed begins with our *Source Water Assessment Plan* (SWAP). The Colorado Department of Public Health and Environment has provided us with a report for our water supply. You may obtain a copy of the report by visiting www.cdphe.state.co.us/wq/sw/swapreports/swapreports.html, clicking on "Jefferson County" and selecting "130001;Arvada City of" or by contacting the City of Arvada at 720.898.7800.

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 include EPA sites, permitted wastewater discharge sites, storage tank and mine sites, as well as various types of land use sites.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As the 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 human activity.

Contaminants which 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, and wildlife.
- * Inorganic contaminants, such as salts and metals, which can be naturally-occurring or the result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- * Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and also may come from gas stations, urban stormwater runoff, and septic systems.
- * Pesticides and herbicides that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential users.
- * Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

For general information about Source Water Assessment visit <http://www.cdphe.state.co.us/wq/sw/swaphom.html>.

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

City of Arvada Main Number720.898.7000
 City WEB sitewww.arvada.org
 Utilities, Water Quality, Judy Schmidt720.898.7802

EPA's Safe Drinking Water Hotline1.800.426.4791
 EPA's WEB sitewww.epa.gov/safewater

If you are interested in learning more about your water department and water quality issues, information is available from the following sources: the City's WEB site, KATV - Channel 8, local newspapers, or by contacting any of the organizations listed.

The City tests the water supply for many types of contaminants. The following tables list contaminants that EPA requires to be listed if they were detected. The data is from the 2010 monitoring period January 1 to December 31, 2010.

Inorganic Chemical Contaminants: These chemicals are metals, salts, and other non-carbon based compounds. Health concerns are not focused on cancer, but rather on their suspected link to physical and mental human disorders. Inorganics are regulated at the City's two Water Treatment Plants.

Chemical Compound	MCLG	MCL	Ralston WTP	Arvada WTP	Lowest to Highest	Violation	Sample Date 2010	Likely Source of Contamination
Barium(ppm)	2.0	2.0	0.022	0.029	0.019 to 0.031	No	Quarterly	Erosion of natural deposits. Discharge of drilling waste. Erosion of natural deposits. Water additive which promotes strong teeth.
Fluoride(ppm)	4.0	4.0	0.88	0.51	0.39 to 0.99	No	Quarterly	
Unregulated Secondary Compounds	MCLG	MCL	Ralston WTP	Arvada WTP	Lowest to Highest	Violation	Sample Date 2010	Likely Source of Contamination
Sodium(ppm)	NA	10,000*	5.9	17	5.2 to 18	No	Quarterly	Naturally present in the environment.
Sulfate(ppm)	500	250*	20	40	17 to 41	No	Quarterly	
Total Dissolved Solids(ppm)	NA	500	69	115	53 to 142	No	Monthly	

* Recommended level, this is a Secondary Maximum Contaminant Level.

Secondary Standards are non-enforceable guidelines for contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor or color) in drinking water. EPA recommends these standards but does not require water systems to comply.

Maximum Contaminant Level Goal (MCLG) - The "GOAL" is 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 (MCL) - The "Maximum Allowed" is 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.

Parts per million (ppm) or Milligrams per liter (mg/l): One part per million corresponds to one minute in two years or a single penny in \$10,000.

Lead and Copper: Regulated at the customer's tap.

Chemical Compound	MCLG	MCL Action Level	90th Percentile	# of Samples	Sample Sites Above Action Level	AL or TT Violation	Monitoring Period	Likely Source of Contamination
Lead(ppb)	0	AL=15	7.0	65	0	No	01/01/2008 to 12/31/2010	Corrosion in household plumbing systems. Erosion of natural deposits. Corrosion in household plumbing systems. Leaching from wood preservatives. Erosion of natural deposits.
Copper(ppm)	0	AL=1.3	0.32	65	0	No		

Note: *The 90th percentile is the 59th largest result out of the 65 samples taken.

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

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 at 1.800.426.4791** or at <http://www.epa.gov/safewater/lead>.

Radionuclides Contaminants: Radon is a radioactive gas and a known human carcinogen. Radionuclides are sampled at the City's two Water Treatment Plants.

Chemical Compound	MCLG	MCL	Ralston WTP	Arvada WTP	Lowest to Highest	MCL Violation	Sample Date 2010	Likely Source of Contamination
Radon(pCi/L)*	NA	NA	3.7	1.8	0-26	No	Monthly	Naturally present in the environment.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Organic Chemical Contaminants - Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5s). These compounds may be formed during chlorination by reactions with natural organic material in the water. Some THMs and HAAs are thought to be cancer-causing agents at certain levels. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys or central nervous systems, and may have an increased risk of getting cancer.

Organic Compound	MCLG	MCL	# of Samples	Average of Individual Samples	Lowest to Highest	MCL Violation	Sample Date 2010	Likely Source of Contamination
THM(ppb)	NA	80	40	35.2	18.8-74.4	No	Quarterly	By-products of drinking water chlorination.
HAA5(ppb)	NA	60	40	31.6	12-49.6	No	Quarterly	

Parts per billion (ppb) or Micrograms per liter (ug/l): One part per billion corresponds to one minute in 2,000 years or single penny in \$10,000,000.

Disinfectant - Disinfectant is used in drinking water to kill microbes. The levels are monitored and regulated throughout the City's distribution system.

Organic Compound	MRDLG	MRDL	Annual Average	Lowest to Highest	MCL Violation	Likely Source of Contamination
Chlorine(ppm)	4	4	1.58	0.54-2.05	No	Water additive used to control microbes.

Units ppm - parts per million

Maximum Residual Disinfectant Level Goal (MRDLG) - 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.

Maximum Residual Disinfectant Level (MRDL) - 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.

Total Organic Carbon - TOC (Disinfection By-Products Precursor) percentage removal ratio of raw and finished water. TOC has no health effects. However, Total Organic Carbon provides a medium for the formation of disinfection byproducts. These byproducts include Trihalomethanes (THMs) and Haloacetic Acids (HAA5s). TOC is regulated at the City's Water Treatment Plants.

Total Organic Carbon	Average of Individual Ratio Samples	Range of Individuals Ratio Samples (Lowest to Highest)	Number of Ratio Samples	Unit of Measure	TT Minimum Ratio	TT Violation	Sample Date 2010	Likely Source of Contamination
Ralston WTP	1.14	1.03-1.34	23	Ratio	The TT Minimum Ratio is 1.0	No	Twice a Month	Naturally present in the environment.
Arvada WTP	1.00	0.88-1.00	8	Ratio		No	Twice a Month	

Turbidity - Turbidity measurements indicate the clarity of the finished water. High levels may pose a health hazard by interfering with disinfection. Samples of the system's filtered water must be less than or equal to 0.3 NTU in at least 95% of the samples. Turbidity is regulated at the City's two Water Treatment Plants.

Turbidity	Sample Date	Highest Single Measurement Found	TT Requirement	TT Violation	Likely Source of Contamination
Ralston WTP	8/15/2010	0.29 NTU	Maximum 1 NTU for any single measurement	No	Soil runoff.
Arvada WTP	7/30/2010	0.27 NTU		No	
Ralston WTP	Month: December 2010	Lowest monthly percentage of samples meeting TT requirements for our technology 100%	In any month, at least 95% of samples must be less than 0.3 NTU	No	Soil runoff.
Arvada WTP	June 2010			No	

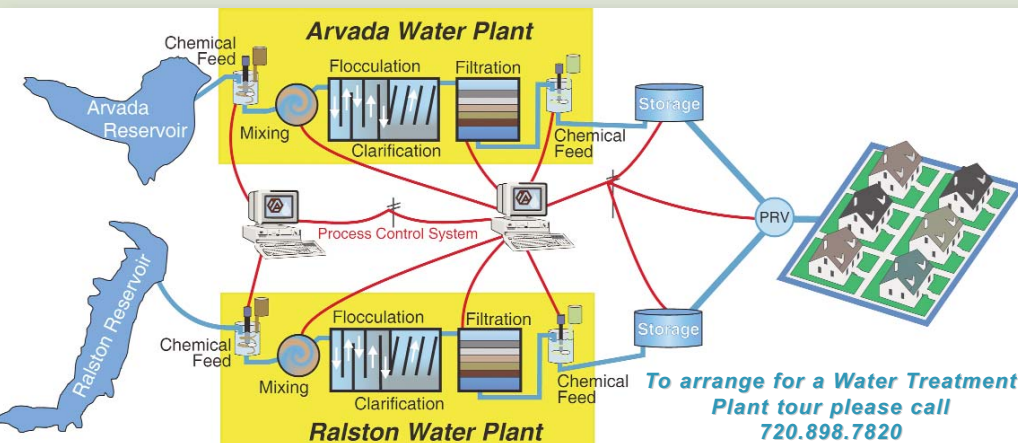
Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Nephelometric Turbidity Unit (NTU) - A measure of the clarity of the water. Turbidity in excess of 5 NTU is just noticeable to the average person.

CRYPTOSPORIDIUM is a microscopic organism that, when ingested, can result in diarrhea, fever, and other gastrointestinal symptoms. The City of Arvada has tested for Cryptosporidium in both raw water and treated water since 1994 and has never detected it in the water. The organism exists in all of Colorado's rivers and streams and comes from animal wastes in the watershed. Cryptosporidium is eliminated by an effective treatment combination including filtration, sedimentation, and disinfection.

WATER SYSTEM INFORMATION

All of the City's water is processed through one of two Water Treatment Plants (WTP) for purification and disinfection before it is conveyed to the customer. Extensive monitoring of the process takes place to ensure high quality drinking water. This diagram shows how the treatment process for each of the City's WTPs work.



Ralston and Arvada/Blunn Water Treatment Facilities

Superior water quality is the main goal for the Water Treatment Plant Division. State Certified Water Plant Operators analyze, treat, monitor, and ensure the safety, taste, and aesthetics of your drinking water 24 hours a day, seven days a week, 365 days a year.

Skilled Electro-Mechanical Technicians maintain, repair, and/or replace components necessary for the proper operation of the Water Treatment Plants. Water Plant personnel routinely perform over 95,292 bench tests annually and monitor continuous analytical readings to ensure safe drinking water before it enters the distribution system that delivers the water to your home or business. Both the Ralston and the Arvada/Blunn Water Treatment Plants are the "first line of defense" when it comes to water quality, ensuring that all your water is as clean and safe as possible.

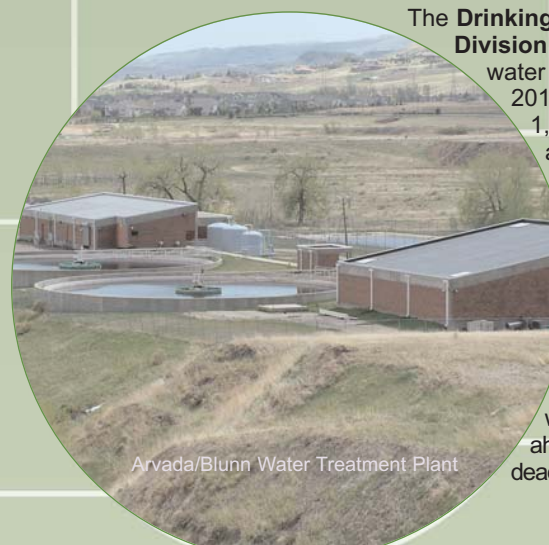
Peak City of Arvada water consumption usually occurs during June/July/August. The highest daily usage in 2010 was 34.9 million gallons on June 30. The City's two water treatment plants can produce and pump 52 million gallons a day.



Radon is a radioactive gas that you cannot see, taste, or smell. It is found in the soil throughout the United States. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can reach high levels in all types of homes. Radon can also be released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through the soil, radon entering the home through tap water will be, in most cases, a small source of radon in indoor air.

Radon is a known human carcinogen. Breathing air that contains radon can lead to lung cancer. Drinking water that contains radon may also cause increased risk of stomach cancer.

If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is four (4) picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that are relatively inexpensive. For additional information, call the State radon program at 303.692.3030 or call the EPA Radon Hotline 1.800.SOS.RADON.



The Drinking Water Compliance Division

conducted 2,186 water sampling events in 2010. The Staff evaluated 1,224 microbiological and 10,121 water quality parameters.

All monitoring reports were then submitted to the CO Department of Public Health and Environment and the EPA for evaluation and interpretation of water quality parameters ahead of any compliance deadline dates.

Water System Operations Division- With more than 570 miles of drinking water distribution pipes, 10 large water tanks, six pump stations, 4,800 fire hydrants, 34,500 water meters, and nearly 9,000 valves to operate and maintain, the City of Arvada's Water System Operations Staff works hard to ensure that drinking water flows to your tap every day. It takes an accomplished professional staff to perform the various preventative maintenance programs designed to extend the life cycle of Arvada's water system components.

The Division is on call 24 hours a day to make water system repairs that keep customer outages at a minimum and to respond to all customer calls with the goal of achieving customer satisfaction in a timely and effective manner.