

# WHAT'S IN COLUMBIA'S DRINKING WATER?

The City's DHEC-certified laboratory performs more than 200,000 analyses each year to insure that the water the City supplies to its customers meets all EPA and DHEC standards at all stages of the treatment process and at hundreds of points throughout more than 2,400 miles of pipeline that make up the City's distribution system. The City also conducts voluntary testing for microbial contaminants. In 2004, the City joined the Partnership for Safe Water, a group that encourages water suppliers to enhance their water system's ability to prevent entry of microbial contaminants and to implement any actions that are appropriate in accomplishing this goal. The City's drinking water met all state and federal requirements during 2009 and is considered safe to drink. The substances listed below were detected in the City's water supply during 2009 or during the most recent sampling period if sampling was not required during 2009.

Substance	Highest Level Allowed (MCL)	Detected Level	Range of Detection	Goal (MCLG)	Violation	Year Sampled	Possible Sources
<b>Inorganic Compounds</b>							
Lead	15 ppb (action level)	0 ppb	One of 49 sites sampled exceeded the action level.	0	None	2008	Corrosion of household plumbing systems and naturally occurring in the environment. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service line and home plumbing. The City of Columbia is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <a href="http://www.epa.gov/safewater/lead">http://www.epa.gov/safewater/lead</a> .
Copper	1.3 ppm (action level)	0.1 ppm	No sites exceeded the action level.	0	None	2008	Corrosion of household plumbing systems and naturally occurring in the environment.
Fluoride	4 ppm	0.85	0.79 - 0.90 ppm	4 ppm	None	2009	Naturally occurring in the environment by erosion of natural deposits and added at the treatment plant as an aid in preventing tooth decay.
Nitrate/Nitrite (as Nitrogen)	10 ppm	0.25 ppm	0.060 - 0.43 ppm	10 ppm	None	2009	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits.
Chlorite (Lake Plant)	1 ppm	0.537 ppm	0.200 - 0.537 ppm	0.8 ppm	None	2009	By-product of drinking water chlorination.
(Canal Plant)	1 ppm	0.810 ppm	0.307 - 0.810 ppm	0.8 ppm	None	2009	
<b>Organic Compounds</b>							
Total Trihalomethanes (THMs) (Chloroform, Bromodichloromethane, Dibromochloromethane, Bromoform)	80 ppb	32 ppb (Average)	12.3 - 45.0 ppb	0	None	2009	By-product of drinking water chlorination formed when chlorine reacts with organic matter.
Haloacetic Acids (HAAs) (Monochloroacetic Acid, Monobromoacetic Acid, Dichloroacetic Acid, Trichloroacetic Acid, Dibromoacetic Acid)	60 ppb	32 ppb (Average)	14.3 - 85.2 ppb	0	None	2009	By-product of drinking water chlorination formed when chlorine reacts with organic matter.
Total organic carbon (Lake Plant)	TT	43.46% Removal (36.67% Removal Required)	39.60% - 46.30% Removal	None	None	2009	Naturally occurring in the environment.
(Canal Plant)	TT	45.85% Removal (36.67% Removal Required)	40.10% - 58.50% Removal	None	None	2009	Naturally occurring in the environment.
<b>Microorganisms</b>							
Turbidity (Lake Plant)	<0.3 NTU Treatment Technique	0.10 NTU - Highest single measurement	100% - Lowest monthly percentage meeting standard	Not Applicable	None	2009	Naturally occurring in the environment.
(Canal Plant)	<0.3 NTU Treatment Technique	1.69 NTU - Highest single measurement	98.92% - Lowest monthly percentage meeting standard	Not Applicable	Yes*	2009	Naturally occurring in the environment.
Total Coliform Bacteria	Presence of coliform bacteria in < 5% of monthly samples.	1.02% (highest monthly percentage positive)	Not Applicable	0	None	2009	Naturally occurring in the environment.
<b>Disinfectants</b>							
Chloramine	4 ppm	2.7 ppm (highest quarterly average)	2.1 - 2.8 ppm	4 ppm	None	2009	Water additive to control microbial growth.
Chlorine Dioxide (Lake Plant)	800 ppb	244 ppb	3 - 244 ppb	800 ppb	None	2009	Water additive to control microbial growth.
(Canal Plant)	800 ppb	210 ppb	0 - 210 ppb	800 ppb	None	2009	Water additive to control microbial growth.

\* On April 1, 2009, the Canal Water Treatment Facility experienced a brief filtered water turbidity exceedance due to deviations in chemical feed. We took corrective actions to include necessary treatment plant flow adjustments, increased monitoring frequency, and prompt notification. The filtered water turbidity quickly fell below the standard of 1.0 NTU and has remained compliant since April 1, 2009.  
 \*\* We have been monitored for UCMR2 in 2009. No detections were noted. If you would like to receive the list of contaminants monitored, please contact Stephanie Hodnette at 803-733-8203.

## What do these terms and symbols mean?

**Action Level**-A limit (not MCL) that applies to contaminants, such as lead and copper, that enter the water after treatment. Action levels may trigger special monitoring, public education or treatment techniques.

**Detected Level**-Concentration of a substance detected in a water sample. The detected levels specified in the above tables are the highest levels detected if multiple samples were collected, except for Total Organic Carbon (TOC) or unless specified otherwise. For TOC, the specified removal rate is the rate required by the SCDHEC, based on data reported by the City.

**MCL** (Maximum Contaminant Level)-The EPA's regulation limit for the highest allowable amount of a substance in drinking water.

**MCLG** (Maximum Contaminant Level Goal)-The EPA's target level for a contaminant below which there are no known or suspected health effects. The MCLG is not necessarily a level achievable with currently available treatment techniques.

**MRDL** (Maximum Residual Disinfectant Level)-The maximum permissible level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects.

**MRDLG** (Maximum Residual Disinfectant Level Goal)-The maximum level of a disinfectant in drinking water at which no known or anticipated adverse effect on the health of persons would occur and that allows for an adequate margin of safety. MRDLG's are non-enforceable public health goals.

**N/A**-Not applicable, does not apply.

**NTU** (Nephelometric Turbidity Unit)-Units used to indicate water clarity.

**ppb** (parts per billion)-One part in a billion parts (equivalent to one penny in \$10,000,000).

**ppm** (parts per million)-One part in a million parts (equivalent to one penny in \$10,000).

**RAA** (Running Annual Average)-An average of the four quarters in a calendar year.

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

**UCMR2**-Unregulated Contaminant Monitoring Regulation 2.

**90th Percentile**-The "action level" for lead and copper for a water system that serves more than 100,000 people.

< Less than

> Greater than

## THE EPA REQUIRES THAT ALL ANNUAL WATER QUALITY REPORTS CONTAIN THE FOLLOWING:

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 the EPA's Safe Drinking Water Hotline (800-426-4791).

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 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:

\*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 result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

\*Pesticides and herbicides, which may come from a variety of sources such as agriculture, stormwater runoff and residential uses.

\*Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff and septic systems.

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

In order to insure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Federal Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

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 from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline (800-426-4791). Testing since 1994 has revealed no signs of Cryptosporidium in Columbia's treated water.