



**City of Columbia Water works  
Columbia, South Carolina  
2012 Water Quality Report  
Public Water System 4010001**

***For More Information***

City of Columbia  
Water Quality Complaints/Billing –  
Customer Care Center – 803-545-3300

S.C. Dept. of Health and Environmental Control  
Bureau of Water 803-898-4300

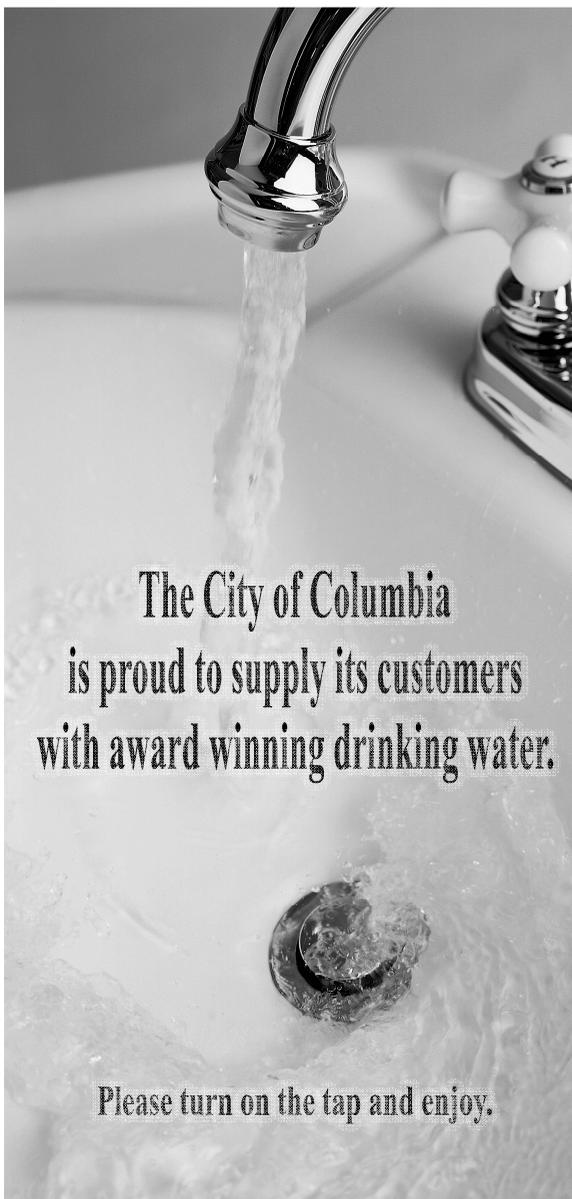
EPA - Drinking Water Hotline 800-426-4791

National Lead Information Clearinghouse 800-424-LEAD

Consumer Product Safety Commission 800-638-2772

Please visit us at: [columbia.sc.gov/drinkingwater](http://columbia.sc.gov/drinkingwater)

*Esté informe contiene información muy importante sobre el agua que usted toma. Tradúscalo o hable con un amigo quien lo entienda bien.*



**The City of Columbia  
is proud to supply its customers  
with award winning drinking water.**

**Please turn on the tap and enjoy.**

A Publication of the City of Columbia's  
Department of Utilities and Engineering

***Columbia Water:  
Quality on Tap Since 1835***

The United States Environmental Protection Agency (EPA) and the South Carolina Department of Health and Environmental Control (DHEC) have established strict quality standards for drinking water. These standards are designed to protect consumers against disease-causing bacteria and other harmful substances. EPA requires public water systems to send their customers an annual report containing information about their drinking water quality and compliance with the standards.

We are pleased to present the information contained in this report to you and hope that it will be both informative and helpful in making personal health-based decisions regarding your drinking water consumption. We welcome your comments and questions. We may be reached during normal business hours by calling 803-545-3300. You are also welcome to attend regularly scheduled meetings of City Council that are generally held the first and third Wednesdays of each month at City Hall, 1737 Main Street at 10:00 a.m. Contact the Public Relations Department at 803-545-3020 for time and location or visit [www.columbiasc.net](http://www.columbiasc.net).

***Reporting Violation  
March 2013***

During March, 2013, the City of Columbia failed to notify SCDHEC within 24 hours of a sample testing positive for E. Coli during routine, preliminary testing. Additional testing did not show the presence of E. Coli.

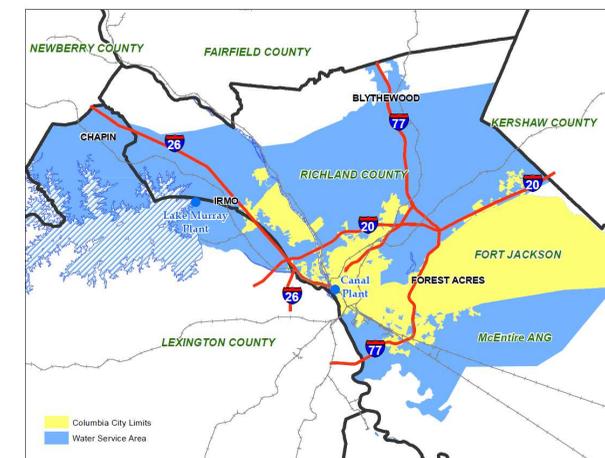
Due to an oversight, SCDHEC was notified eleven (11) days after the sample results came back positive.

***Where Does Columbia's  
Water Come From?***

The City of Columbia operates two drinking water treatment plants. One draws water from the Broad River Diversion Canal (Canal) and the other draws from Lake Murray (Lake). The two plants together produce an average of 60 million gallons of water per day that is furnished to approximately 375,000 people in Richland and Lexington Counties through more than 2,400 miles of underground pipeline. Generally, the Lake Murray Plant serves the area west of the Broad River and the area north of Interstate 20 and the Columbia Canal Plant serves the remaining area. The system is designed, however, so that water can be supplied to the entire service area by either plant.

The SCDHEC has completed a comprehensive water assessment report on the Broad River Diversion Canal (also referred to as the Columbia Canal) and Lake Murray. This Source Water Assessment report is available and can be reviewed at 1136 Washington Street or by contacting 803-545-3400.

**City of Columbia Water Service Area**



# What is 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. Additional analyses are performed by DHEC, the state agency that regulates and oversees public water systems. Samples are tested at every stage of the treatment process and at hundreds of points throughout more than 2,100 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 and has since been participating in 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 2012, and is considered safe to drink. The substances listed below were detected in the City's water supply during 2012 or during the most recent sampling period if sampling was not required during 2012.

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)	15 ppb (action level)	Two of 50 sites sampled exceeded the action level	0	None	2011	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 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	2011	Corrosion of household plumbing systems and naturally occurring in the environment.
Fluoride	4 ppm	0.65 ppm	0.62 - 0.67 ppm	4 ppm	None	2012	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	0.24 ppm	0.06 - 0.43 ppm	10 ppm	None	2012	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits.
Chlorite (Lake Plant)	1 ppm	0.530 ppm	0.248 - 0.530 ppm	0.8 ppm	None	2012	By-product of drinking water chlorination.
(Canal Plant)	1 ppm	0.566 ppm	0.290 - 0.566 ppm	0.8 ppm	None	2012	
<b>Organic Compounds</b>							
<b>Stage 1 (Jan -Mar 2012)</b>							
Total Trihalomethanes (THMs) (Chloroform, Bromodichloromethane, Dibromochloromethane, Bromoform)	80 ppb	32 ppb (Average)	17 - 46 ppb	0	None	2012	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	26 ppb (Average)	20 - 27 ppb	0	None	2012	By-product of drinking water chlorination formed when chlorine reacts with organic matter.
<b>Stage 2 (Apr-Dec 2012)</b>							
Total Trihalomethanes (THMs)	80 ppb	N/A	22 - 65 ppb	0	None	2012	By-product of drinking water chlorination formed when chlorine reacts with organic matter.
Haloacetic Acids (HAAs)	60 ppb	N/A	22 - 34 ppb	0	None	2012	By-product of drinking water chlorination formed when chlorine reacts with organic matter.
Total Organic Carbon (Lake Plant)	TT	38.05% Removal (35.0% Removal Required)	35.10% - 42.50% Removal	None	None	2012	Naturally occurring in the environment
(Canal Plant)	TT	43.37% Removal (35.42% Removal Required)	35.00% - 63.70% Removal	None	None	2012	Naturally occurring in the environment.
<b>Microorganisms</b>							
Turbidity (Lake Plant)	<0.3 NTU TT	0.09 NTU - Highest single measurement 100% - Lowest Monthly Percentage meeting standard.		N/A	None	2012	Naturally occurring in the environment
(Canal Plant)	<0.3 NTU TT	0.29 NTU - Highest single measurement 100% - Lowest Monthly Percentage meeting standard.		N/A	None	2012	Naturally occurring in the environment.
Total Coliform Bacteria	Presence of coliform bacteria in < 5% of monthly samples.	2.60% (highest monthly percentage positive)	N/A	0	None	2012	Naturally occurring in the environment.
<b>Disinfectants</b>							
Chloramine	4 ppm	2.5 ppm (highest quarterly average)	2.3 - 2.5 ppm	4 ppm	None	2012	Water additive to control microbial growth.
Chlorine Dioxide (Lake Plant)	800 ppb	234 ppb	0 - 234 ppb	800 ppb	None	2012	Water additive to control microbial growth.
(Canal Plant)	800 ppb	161 ppb	0 - 161 ppb	800 ppb	None	2012	Water additive to control microbial growth.

## What do these terms and symbols mean?

**Action Level** - A limit, that is not a 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** - The 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.

**NA (Not Applicable)** - Does not apply.

**NTU (Nephelometric Turbidity Unit)** - Units of measure 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.

**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.