Columbia Water & Light is a publicly run utility. Any citizen interested in learning more about water quality or wishing to express an opinion regarding our water system can do so by the following means: meetings of the City Council and the Water & Light Advisory Board; by contacting Mike Anderson, Manager of Water Production, at 573-445-3517 or wlmail@gocolumbiamo.com, or on our Web site at www.GoColumbiaMo.com.

COLUMBIA WATER & LIGHT

(573) 874-7325
www.GoColumbiaMo.com

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2013 Water Quality Report
Columbia, Missouri

Columbia's Water Exceeds Standards

Columbia's water is tested more frequently and more thoroughly than is required by law. The well water is monitored for any possibility of contamination. More than 4,000 tests are run each year on samples from 41 locations throughout Columbia.

This water quality report is a requirement of the EPA's Safe Drinking Water Act. This report lists only those substances found in measurable quantities in Columbia's drinking water. Of the 83 regulated substances tested for, the detected substances are in this report. Not listed in this report are the many contaminants for which the water was tested but none was detected. Columbia Water & Light reports any events that might compromise the water quality to the Missouri Department of Natural Resources. A complete list of water quality testing results and reportable events with the water system is available at GoColumbiaMo.com. The water we supply to our customers meets all water quality standards set by the EPA and the Missouri Department of Natural Resources.

None of the substances reported in the 2013 Water Quality Report exceed the Maximum Contaminant Levels. The presence of contaminants does not necessarily indicate that the water poses a health risk. Contaminants listed in this document fall under the heading of either Regulated or Unregulated. The EPA makes this distinction based on health risk to humans.

Ground water is processed at the Water Treatment Plant before being pumped to Columbia.

Source of Columbia's Water

Columbia's water is pumped from wells that tap a water-filled bed of sand and gravel beneath the farm land bordering the Missouri River just southwest of the city in McBaine. Long ago, melting glaciers washed sand, gravel and boulders downstream, leaving thick deposits along the course of the river. This geological formation is an alluvium, which, when saturated with water, becomes an alluvial aquifer. Water moving slowly through the aquifer is replenished by a combination of groundwater that flows down from higher elevations and water from the Missouri River that migrates through the formation.

In the area surrounding Columbia's 15 wells, 44 billion gallons of water fill the aquifer to within 20 feet of the ground surface. The wells average 110 feet in depth, penetrating the aquifer to near its bottom. Collectively, the wells can pump about 21,000 gallons of water per minute, or 30 million gallons per day.

Groundwater pumped from the wells is piped to the Columbia Water Treatment Plant. The water is naturally of very high quality and free of harmful chemicals and bacteria. However, it does contain dissolved calcium and magnesium that require it to be softened before use. Iron and hydrogen sulfide are also found in the water which can result in the staining of laundry and an unpleasant odor. At the treatment plant, a process called aeration oxidizes the iron and strips out the hydrogen sulfide to reduce these levels.

The water treatment plant disinfects the water with chlorine, then adds ammonia to combine with chlorine forming chloramine. Chloramine is a common disinfectant that has been used for the last 90 years which reduces the formation of trihalomethanes in the water distribution system. There are 0.6 milligrams of ammonia added per liter of water. For comparison, this would be similar to adding six grains of table salt to a one gallon container of water. The water is safe for human consumption but customers who are undergoing dialysis or have pet fish need to remove the chloramine prior to use in dialysis equipment or in aquariums.

Softened, filtered, and disinfected water is pumped from the treatment plant to reservoirs at Columbia's three pump stations. The water is then pumped throughout the city to consumers.

2013 Water Quality Report

The information in this report is published each spring using the previous year's testing results. The content is created under guidelines set forth by the U.S. Environmental Protection Agency (EPA) for the Consumer Confidence Report.

A Message from the Environmental Protection Agency

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 Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Contaminants that may be present in source water include:

A. Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

B. 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.

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

D. 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 stormwater runoff, and septic systems.

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

In order to ensure that tap water is safe to drink, the Department of Natural Resources prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Department of Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health. Columbia's source water protection plan and the complete water testing results are available online at www.GoColumbiaMo.com or by calling 874-7325.

Immuno-compromised People

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people with cancer undergoing chemotherapy, people 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 and Centers 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.

Lead and Copper Notice

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 lines and home plumbing. 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 (800-426-4791) or at http://water.epa.gov/drink/info/lead/index.cfm.

Results

Unregulated Substance (units)	Reported Concentration	Range
Chloroform (µg/L)	17.8	9.92–43.4
Bromodichloromethane (µg/L)	15.7	11.3–29.8
Dibromochloromethane (µg/L)	12.7	9.4–20.9
Bromoform (µg/L)	2.9	2.3–3.8
Sulfate (mg/L)	66.4	

Regulated Substance (units) Major source(s) of regulated substance	MCLG	MCL	Reported Concentration
Barium (mg/L) Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	2	2	0.089
Combined radium (pCi/L) Erosion of natural deposits	0	5	1.4*
Copper (mg/L) Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives	1.3	AL=1.3	0.086*[1]
Fluoride (mg/L) Water additive that promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories	4	4	0.59[2]
Lead (µg/L) Corrosion of household plumbing systems	0	AL=15	1.92*[3]
Radon (pCi/L) Erosion of natural deposits	0	300[4]	50.4*[4]
TTHM (µg/L) By-product of drinking water chlorination	0	80	49.2[5]
HAAs (µg/L) By-product of drinking water chlorination	0	60	17.8[6]
Total Chlorine (mg/L) Water additive for disinfection	4	4	2.12[7]

* *Indicates data from a previous year's monitoring.*

1 *Fifty distribution samples were checked for copper. None of the samples exceeded the copper action level. The measurements ranged from 0.006 to 0.142 mg/L.*

2 *Reported concentration of fluoride is the average of fourteen samples. The range of measurements is 0.51 to 0.69 mg/L.*

3 *Fifty distribution samples were checked for lead. No samples exceeded the lead action level. The measurements ranged from undetected to 3.85 µg/L.*

4 *Radon in drinking water at the MCL of 300 pCi/L poses an estimated increased risk of an additional 2 cases of cancer for every 10,000 people exposed. Increased cancer risk for the levels found in our water, 50.4 pCi/L, are undetermined. Additional information is available at the EPA website: epa.gov/OGWDW.*

5 *Reported concentration of TTHM is the average of 19 samples from the distribution system. The range of measurements is 34.0 to 97.9 µg/L.*

6 *19 samples were checked for HAAs. The range of measurements is undetected to 25.5 µg/L.*

7 *Reported concentration of total chlorine is the average of 1476 samples collected throughout the year at 41 different places in the distribution system. Measured concentrations ranged from 0.46 mg/L to 3.5 mg/L.*

MDRL—*Maximum Disinfectant Residual 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.*

MDRLG—*Maximum Disinfectant Residual Level Goal: The level of a drinking water disinfectant below which there is no known or expected risk to heath. MDRLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.*

MCLG—*Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health.*

MCL—*Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water.*

pCi/L—*Picocuries Per Liter: A measure of radioactivity.*

mg/L—*milligrams per liter or parts per million.*

AL—*Action Level: The concentration of a contaminant which triggers a treatment or other requirement which a water system must follow.*

µg/L—*micrograms per liter.*