

# CITY OF ST. LOUIS WATER QUALITY REPORT 2006

In compliance with the Safe Drinking Water Act, the City of St. Louis Water Division is delivering this Water Quality Report to all its customers who receive water bills. **We ask that landlords, employers, and anyone else who receives the water bill for other water users share this report with them.** To obtain additional copies call (314) 771-2255 or view it online at <http://www.stlwater.com/confidence.html>. The report summarizes information that your water system already collects to comply with regulations, including information on water from the Missouri and Mississippi Rivers, the levels of detected contaminants, and compliance with drinking water rules.

## ST. LOUIS CITY WATER-A HISTORY OF EXCELLENCE

The Water Division is a branch of the St. Louis City government's Department of Public Utilities. Since 1835, we have been dedicated to supplying the highest quality water to our customers. We are proud to say that in **2006**, our water met or exceeded the standards set by the U.S. Environmental Protection Agency and the Missouri Department of Natural Resources. **In fact, we have never violated a water quality regulation in 100 years of testing.**

Our scientists constantly monitor and test the water for over 150 possible contaminants. We analyze the water where it enters the plant as raw river water, throughout the treatment process, and at multiple points throughout the city. The frequency and thoroughness of these tests exceed federal regulations for water quality monitoring. **Water quality monitoring of St. Louis City water in 2006 indicated that no compounds were detected above the allowable levels set by federal and state regulations.**

The City of St. Louis Water Division is proud to be a charter member of the Partnership for Safe Water. In 1994, this organization was formed by 187 surface water utilities, several drinking water organizations including the American Water Works Association, and the Environmental Protection Agency. The Partnership's goal is to provide a new measure of safety to millions of Americans by improving water quality nationwide.

## WHERE DOES THE WATER COME FROM?

The City of St. Louis Water Division has two water treatment plants. The Howard Bend Plant draws water from the Missouri River. The Chain of Rocks Plant is located on the Mississippi River south of the confluence of the Missouri and Mississippi Rivers. The water reaching our intakes at the Chain of Rocks Plant is primarily Missouri River water because the two rivers have not fully mixed when the water reaches the plant. Together, the two plants produce an average of 150 million gallons of water each day.

## **SOURCE WATER ASSESSMENT INFORMATION**

In 2004, the Missouri Department of Natural Resources (DNR) conducted a source water assessment to determine susceptibility of our source water to contamination. You can acquire the complete results by calling DNR at 1-800-361-4827 or from the internet at <http://maproom.missouri.edu/swipmaps/pwssid.htm>. Even though the assessment has determined that our river water source is susceptible due to the presence of potential contaminant sources, the City of St. Louis employs all available measures at its disposal to remove contamination at intakes and during the treatment process, producing drinking water, at our Facilities, that consistently meets or exceeds all Safe Drinking Water Standards.

## **READING THE TABLE**

This report lists only those substances found in measurable quantities in St. Louis City's finished drinking water. While we test for 150 possible contaminants, traces of only 14 were detected in **2006**. The results of the detected contaminants are listed in the table attached. **All contaminants were detected in concentrations well below safe and acceptable limits.**

## **WHAT ABOUT CONTAMINANTS?**

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 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).

## **GIARDIA AND CRYPTOSPORIDIUM**

Giardia and Cryptosporidium are microscopic parasites that when ingested, can result in diarrhea, fever, and other gastrointestinal complications. These organisms are found in all rivers and streams and come from animal wastes in the watershed. They are removed by effective treatment including deactivation with chlorine and precipitative softening, sedimentation, flocculation and filtration. Monitoring performed monthly in **2006** did not detect any Cryptosporidium or Giardia in samples collected after the first stage of our multi-stage, multiple barrier treatment process at either of the City's Water Purification Plants. Prior monitoring showed that neither cysts nor oocysts were detected in our finished water.

## **HEALTH RISKS**

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).

#### **MONITORING VIOLATION:**

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indication of whether or not your drinking water meets health standards. The City's treatment plants have a total of 60 filters. At approximately 3:00 PM on July 23, 2006 a sensor in the turbidimeter monitoring the effluent of one filter at our Howard Bend treatment plant failed. This failure was not discovered until 7:30 AM July 24<sup>th</sup>. Upon discovery of the failed sensor, a sample of the filter's effluent was taken. Turbidity was found to be 0.04 NTU. Continuous monitoring of the filter's effluent turbidity was restored by 9:30 AM July 24<sup>th</sup>. The plant's combined effluent turbidity for all filters during this time was 0.02-0.03 NTU, far below the standards required by law.

The City of St. Louis Howard Bend Treatment Plant received a notice of minor violation from the State of Missouri Department of Natural Resources for failing to properly monitor one of our filters. The State recognized that the water dispensed to the public was not compromised but the Howard Bend Plant was in violation of Missouri Law: 10 CSR 604.050(3)(E) 1. & 2. The State reported this incident to the EPA as a **minor monitoring violation** during the month of July, 2006.

**DATA FOR 2006 WATER QUALITY REPORT (CCR)**  
**City of St. Louis Water Division**  
MO6010715

Detected Contaminants (units)	MCL	MCLG	Average Level Detected	Range	Major Sources of Contaminants
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**Inorganic Compounds**

Barium (mg/L)	2	2	0.096	0.005 - 0.201	Erosion of natural deposits
Fluoride (mg/L)	4	4	1.00	0.63 - 1.44	Water additive for dental health
Nitrate+Nitrite (as N mg/L)	10	10	2.67	2.44 – 2.90	Natural Deposits; Fertilizer runoff
Lead (µg/L)*	AL = 15	0	90 <sup>th</sup> Percentile=2.05	Number of samples above AL=0	Corrosion of household plumbing
Copper (mg/L)*	AL = 1.3	1.3	90 <sup>th</sup> Percentile=0.0424	Number of samples above AL=0	Corrosion of household plumbing

**Organic (Synthetic) Compounds**

Atrazine (µg/L)	3	3	0.202	N.D. – 2.42	Herbicide runoff from row crops
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**Disinfectant/Disinfection Byproducts**

Chloramine (mg/L)	MRDL = 4	MRDLG = 4	2.47	1.20 – 3.00	Disinfectant used to treat water
Total Trihalomethanes (µg/L)	80	N/A	15.5	8.2 – 22.3	By-product of disinfection
Haloacetic Acids (5) (µg/L)	60	N/A	20.0	11.4 – 28.1	By-product of disinfection

**Microbiological Data**

Total Coliform Bacteria (% positive samples)	5% of monthly samples positive	0	Highest Month: 0.52% (January) Annual Average: 0.13%		Naturally present in the environment
Total Organic Carbon (mg/L)	TT (Required min. 15% TOC removal from source water)	N/A	2.26	Annual Avg. Percent removal of TOC in finished water=36.3%	Naturally present in the environment
Turbidity (NTU)**	TT (1NTU)**	N/A	Highest level = 0.10		Soil runoff
	TT=95% of monthly samples<0.3NTU		Percentage of samples below 0.3NTU = 100%		

**Radioactive Contaminants**

Gross Alpha Particle Activity, Total (pCi/L) Year 2004	15	0	1.4	1.1-1.7	Erosion of Natural Deposits
Total Uranium ( $\mu\text{g/L}$ ) Year 2003	30	0	1.5	N/A	Erosion of natural deposits

## DEFINITIONS: CCR 2006

**Action Level (AL):** The concentration of a compound that triggers a treatment technique or other requirement that a water system must follow.

**Detection Limit (DL):** The smallest amount of a compound that can accurately be measured by the test method used.

**Maximum Contaminant Level (MCL):** The highest level of a compound allowed in drinking water.

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

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health.

**Microgram per Liter ( $\mu\text{g/L}$ ):** One part per billion or 1 cent in \$10,000,000.

**Milligram per Liter ( $\text{mg/L}$ ):** One part per million or 1 cent in \$10,000.

**PCi/L:** Picocuries per liter is a measure of radioactivity in water.

**None Detected (ND):** The concentration of a compound is less than the smallest amount that can be measured by the test method used.

**Not Applicable (NA):** This heading is not needed for this contaminant.

**Nephelometric Turbidity Units (NTU):** The measurement of the amount of light scattered when a beam of light is directed through a water sample.

**Range:** The highest and lowest results detected for the contaminant.

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

**\*The State of Missouri** has reduced monitoring requirements for certain contaminants to less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. These results are the 90<sup>th</sup> percentile of the Lead and Copper Survey samples tested in 2005 for the Lead and Copper Rule. The 90<sup>th</sup> percentile means 90 percent of the samples had levels less than the values shown.

**\*\*Turbidity:** Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants. The maximum turbidity allowable is 1 NTU for a single sample and 0.3 NTU at the 95<sup>th</sup> percentile.