

# CITY OF ST. LOUIS

## Water Quality Report

### 2011

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.php>. The report summarizes information that your water system 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 **2011**, 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 107 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 2011 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 135 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>. 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. The drinking water produced at our facilities consistently meets or exceeds all Safe Drinking Water Standards.

## **READING THE TABLES**

The first table reports only regulated substances that have been found in measurable quantities in St. Louis City's finished drinking water. While we test for 150 possible contaminants, traces of only 12 were detected in **2011**. The results of the detected contaminants are listed in the table. **All contaminants were detected in concentrations well below safe and acceptable limits.**

The second table lists non-regulated substances whose concentrations have been of interest by consumers.

## **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 fever, diarrhea, 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 **2011** 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 can be particularly at risk from infections; such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly individuals, and infants.

These people should seek advice about drinking water from their health care providers. EPA/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline (800-426-4791).

## **LEAD IN DRINKING WATER**

The City of St. Louis Water Division has optimized its treatment process so that the corrosion of internal plumbing is highly unlikely. However, 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. The City of St. Louis Water Division 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 <http://www.epa.gov/safewater/lead>.

## **FLUORIDATION**

Since 1953, in accordance with St. Louis City Revised Code Chapter 11.26, the City of St. Louis Water Division has been fluoridating our customer's drinking water. Our goal was to provide fluoridated drinking water to a target level of 1 mg/L. In December 2010, the United States Department of Health and Human Services released a report recommending that fluoridation levels in drinking water should be set at 0.7 mg/L. In January 2011, the City of St. Louis Water Division under the direction of the City of St. Louis Health Department reduced the fluoridation goal to 0.6 mg/L.

# DATA FOR 2011 WATER QUALITY REPORT

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

Arsenic (mg/L)	0.01	0	0.0025	0.0024 - 0.0026	Natural deposits, agricultural, industrial practices.
Barium (mg/L)	2	2	0.0362	0.0336 - 0.0387	Erosion of natural deposits
Chromium (Total, mg/L)	0.10	0.10	0.0017	0.0016 - 0.0017	Erosion of natural deposits, Industrial discharge
Fluoride (mg/L)	4	4	0.60	0.27 - 1.04	Water additive for dental health
Nitrate+Nitrite (as N mg/L)	10	10	1.62	1.46 - 1.78	Natural Deposits; Fertilizer runoff
Lead (µg/L)*	AL = 15	0	90 <sup>th</sup> Percentile = Not Detected	Number of samples above AL=0	Corrosion of household plumbing
Copper (mg/L)*	AL = 1.3	1.3	90 <sup>th</sup> Percentile = 0.0420	Number of samples above AL=0	Corrosion of household plumbing

## Organic (Synthetic) Compounds

Atrazine (µg/L)	3	3	0.51	<0.5 - 0.73	Herbicide runoff from row crops
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## Disinfectant/Disinfection Byproducts

Chloramine (mg/L)	MRDL = 4	MRDLG = 4	2.52	2.00 - 3.19	Disinfectant used to treat water
Total Trihalomethanes (µg/L)	80	N/A	19.5	6.3 - 30.6	By-product of disinfection
Haloacetic Acids (5) (µg/L)	60	N/A	17.2	10.6 - 22.2	By-product of disinfection

## Microbiological Data

Total Coliform Bacteria (% positive samples)	5% of monthly samples positive	0	Highest Month: 0.00% Annual Average: 0.00%		Naturally present in the environment
Total Organic Carbon (mg/L)	TT (Required min. 15% TOC removal from source water)	N/A	3.10	Annual Avg. Percent removal of TOC in finished water = 29.2%	Naturally present in the environment
Turbidity (NTU)**	TT (1NTU)**	N/A	Highest Level = 0.14		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 2008	15	0	Not Detected	N/A	Erosion of natural deposits
Total Uranium (µg/L) Year 2008	30	0	Not Detected	N/A	Erosion of natural deposits

## Optional Monitoring (not required by EPA)

Secondary Contaminants	MCL	Average Level Detected	Range
Alkalinity, Total (mg/L)	N/A	61	25 - 108
Calcium (mg/L)	N/A	30.0	18.8 - 88.0
Chloride (mg/L)	250	23.2	14.9 - 36.7
Conductivity ( $\mu$ S/cm)	N/A	532	356 - 608
Hardness, Total (mg/L as CaCO <sub>3</sub> )	N/A	148	113 - 187
Iron (mg/L)	0.3	0.0284	N.D. - 0.0590
Magnesium (mg/L)	N/A	18.5	11.7 - 24.3
Non Carbonate Hardness (mg/L as CaCO <sub>3</sub> )	N/A	86.5	68.0 - 112
pH	N/A	9.28	8.90 - 9.56
Potassium (mg/L)	N/A	5.54	3.63 - 6.98
Sodium (mg/L)	N/A	47.4	18.1 - 62.4
Solids, Total Dissolved (TDS) (mg/L)	500	339	223 - 416
Sulfate	250	158	81.8 - 189

## **DEFINITIONS:**

**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 (N/A):** 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 2011 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.