



# Annual Drinking Water Quality Report

**WATERLOO  
IL1330300**

**Annual Water Quality Report for the period of January 1 to December 31, 2009**

**This report is intended to provide you with important information about your drinking water and the efforts made by the WATERLOO water system to provide safe drinking water. The source of drinking water used by WATERLOO is Purchase Water.**

**For more information regarding this report contact:**

**Name City of Waterloo, Water Department**

**Phone (618) 939-8661 ext. 216**

**Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo ó hable con alguien que lo entienda bien.**

## Source of Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and groundwater wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, 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 storm water 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, urban storm water runoff, and residential uses.

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 storm water runoff, and septic systems.

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

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 at (800) 426-4791.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. 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 and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

**A Source Water Assessment summary is included below for your convenience.**

Illinois EPA considers all surface water sources of community water supply to be susceptible to potential pollution problems, hence, the reason for mandatory treatment for all surface water supplies in Illinois. Mandatory treatment includes coagulation, sedimentation, filtration, and disinfection. Within the Illinois portion of the Mississippi River Watershed, which is illustrated in Figure 3, many commodities, including manufactured goods, petrochemicals, and pesticides are transported along the river system. The production, storage, and transportation of these commodities are a major concern, especially when occurring near surface water intakes. In addition, agricultural runoff within the Illinois portion of the Mississippi River Basin contributes to the susceptibility of the IAWC-East St. Louis intakes. With high flow rates and long distances of travel on the Mississippi River, critical areas can be extensive. The critical area for the IAWC-East St. Louis intake was determined using data from a joint U. S. Environmental Protection Agency/U. S. Geological Survey project. This project used a computer modeling program (SPARROW) to determine travel times on major rivers in the United States. Accidental spills of hazardous materials into navigable waterways are a major concern because of their frequency in the United States in recent years. Illinois has access to 1,116 miles of inland waterway that can handle commercial barge traffic. These include the Upper Mississippi River, Illinois River Waterway, and the Ohio River. Along these waterways are numerous facilities that load and unload hazardous materials. Analysis of reported spills indicate that between 1974 and 1989, 794 accidental spills of hazardous materials occurred along Illinois waterways. Approximately 92% of these spills occurred along the Mississippi and/or the Illinois River. Figure 2 shows the critical area of concern (Zone 1) for the IAWC-East St. Louis surface water intake. Spills occurring in this critical area will travel to the intake in five hours or less, making contingency planning and spill reporting a major concern in this watershed. Information concerning spill response planning on the Mississippi River may be found at the U. S. EPA website [www.epa.gov/region5/oil](http://www.epa.gov/region5/oil), and additional data can also be downloaded at the U. S. Geological Survey's FTP site [ftp://ftp.umesc.er.usgs.gov/pub/gis\\_data/oil\\_spill](ftp://ftp.umesc.er.usgs.gov/pub/gis_data/oil_spill). Under Section 319 of the Federal Clean Water Act, U.S. EPA provides grants for the Illinois EPA to finance projects that demonstrate cost-effective solutions to NPS pollution problems and promote public knowledge and awareness of NPS pollution. Projects in the Illinois portion of the Mississippi Watershed have included:

- On going programs in the North Mississippi, Des Plaines, Illinois, Sangamon, and Fox River Watersheds to reduce siltation and improve water quality. Within the Illinois portion of the Mississippi River Watershed, the Illinois River Watershed has been identified as one of the most significant natural resources in the state. Protection and enhancement of this natural resource is a priority concern of the State of Illinois. In order to focus public attention and identify resource needs, several initiatives are underway including:
- Integrated Management Plan for the Illinois River Watershed: Under the Chairmanship of Lieutenant Governor Corrine Wood, an Illinois River Strategy Team has been formed. This group of public and private sector representatives forms the Illinois River Planning Commission and develops recommendations regarding environmental and economic issues on the Illinois River. These recommendations are the heart of an Integrated Management Plan, which in turn became the foundation for the Illinois River Restoration and Conservation Grant Act.
- Illinois River Restoration and Conservation Grant Act: This Act establishes an interagency body to develop and administer a grant program to fund local watershed management projects. The Act also established the Illinois River Coordinating Council to advise on grant awards and make recommendations towards the betterment of the Illinois River.
- Conservation Reserve Enhancement Program: The Conservation Reserve Enhancement Program (CREP) is a cooperative effort between the USDA and the State of Illinois to protect water quality in the Illinois River and some of its tributaries. USDA and Illinois will work with other Federal, State and local authorities to reduce sedimentation and runoff, and encourage the growth of local wildlife. The Illinois program will establish CRP contracts with owners and operators of farm properties to plant specific kinds of vegetation near streams and rivers in return for rental payments and other incentives. More information on CREP may be found on Illinois DNR's website at <http://dnr.state.il.us>. In an effort to minimize the impact of livestock facilities on water resources on a statewide basis, livestock facilities are now regulated under the Livestock Management Facilities Act. This legislation is designed to keep Illinois' livestock industry productive and environmentally responsible by establishing requirements for design, construction, operation and management of livestock facilities and waste-handling structures. Detailed information on the Livestock Management Facilities Act may be found at the website <http://www.agr.state.il.us>. In addition, the watershed protection efforts and priorities of the Illinois EPA, Illinois Department of Agriculture, Illinois Department of Natural Resources, U.S. Department of Agriculture's Natural Resources Conservation Service, U.S. Army Corps of Engineers, and The Nature Conservancy are described and illustrated at the website: <http://www.epa.state.il.us/water/unified-watershed-assessment/index.html>. In order to help farmers in adopting sound agricultural practices, The Illinois Council on Best Management Practices (C-BMP) was formed. The Council is a coalition of agribusiness and agricultural producer organizations with the support of the University of Illinois Extension and serves as a clearinghouse on current research to protect water quality in Illinois. The Council also provides information and support to local watershed groups to help implement sound water quality initiatives and can offer educational assistance and help facilitate the technical and financial resources needed to carry out water quality objectives. For more information on C-BMP contact Dr. George Czapar, Springfield Extension Center, P.O. Box 8199, Springfield, IL 62791, email: [g-czapar@uiuc.edu](mailto:g-czapar@uiuc.edu).

# Waterloo

## 2009 Regulated Contaminants Detected

### Lead and Copper

**Date Sampled: 7/31/2007**

Definitions:

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.

Not all sample results may have been used for calculating the Highest Level Detected because some results may have been part of an evaluation to determine where compliance sampling should occur in the future.

Lead MCLG	Lead Action Level (AL)	Lead 90th Percentile	# Sites Over Lead AL	Copper MCLG	Copper Action Level (AL)	Copper 90th Percentile	# Sites Over Copper AL	Likely Source of Contamination
0	15 ppb	10	2	1.3 ppm	1.3 ppm	0.19 ppm	0	Corrosion of household plumbing systems; Erosion of natural deposits

**Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.**

### Water Quality Test Results

Definitions: The following tables contain scientific terms and measures, some of which may require explanation.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the Maximum Contaminant Level Goal as feasible using the best available treatment technology. Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety. mg/l: milligrams per litre or parts per million - or one ounce in 7,350 gallons of water. ug/l: micrograms per litre or parts per billion - or one ounce in 7,350,000 gallons of water. na: not applicable. Avg: Regulatory compliance with some MCLs are based on running annual average of monthly samples.

Maximum Residual Disinfectant Level (MRDL): The highest level of disinfectant allowed in drinking water. Maximum Residual Disinfectant Level Goal (MRDLG): The level of disinfectant in drinking water below which there is no known or expected risk to health. MRDLG's allow for a margin of safety.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of disinfectant in drinking water below which there is no known or expected risk to health. MRDLG's allow for a margin of safety.

### Regulated Contaminants

Disinfectants & Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source Of Contaminant
<b>Chloramines</b>	Quarterly	3.8	0.7 - 3.8	MRDLG =4	MRDL =4	ppm	No	Water additive used to control microbes
<b>Total Haloacetic Acids (HAA5)</b>	Quarterly	29	5.3 - 82	N/A	60	ppb	No	By-product of drinking water chlorination
<b>TTHMs [Total Trihalomethanes]</b>	Quarterly	37	11.8 - 100.4	N/A	80	ppb	No	By-product of drinking water chlorination

**Note: The state requires monitoring of certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Therefore, some of this data may be more than one year old.**

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

## Illinois American – East St. Louis

### 2009 Regulated Contaminants Detected

#### Lead and Copper

**Date Sampled: 7/31/2007**

Definitions:

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Action Level Goal (ALG): The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.

Note: Not all sample results may have been used for calculating the Highest Level Detected because some results may have been part of an evaluation to determine where compliance sampling should occur in the future.

Lead MCLG	Lead Action Level (AL)	Lead 90th Percentile	# Sites Over Lead AL	Copper MCLG	Copper Action Level (AL)	Copper 90th Percentile	# Sites Over Copper AL	Likely Source of Contamination
0	15 ppb	3 ppb	0	1.3 ppm	1.3 ppm	0.076 ppm	0	Corrosion of household plumbing systems; Erosion of natural deposits

**Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.**

#### Water Quality Test Results

Definitions: The following tables contain scientific terms and measures, some of which may require explanation. Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the Maximum Contaminant Level Goal as feasible using the best available treatment technology. Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety. mg/l: milligrams per litre or parts per million - or one ounce in 7,350 gallons of water. ug/l: micrograms per litre or parts per billion - or one ounce in 7,350,000 gallons of water. na: not applicable. Avg: Regulatory compliance with some MCLs are based on running annual average of monthly samples. Maximum Residual Disinfectant Level (MRDL): The highest level of disinfectant allowed in drinking water. Maximum Residual Disinfectant Level Goal (MRDLG): The level of disinfectant in drinking water below which there is no known or expected risk to health. MRDLG's allow for a margin of safety.

#### Regulated Contaminants

Disinfectants & Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source Of Contaminant
<b>Chloramines</b>	Quarterly	3.8	0.02 – 3.8	MRDLG=4	MRDL=4	ppm	No	Water additive used to control microbes
<b>Total Haloacetic Acids (HAA5)</b>	Quarterly	22	7.7 – 34.5	N/A	60	ppb	No	By-product of drinking water chlorination
<b>TTHMs [Total Trihalomethanes]</b>	Quarterly	20	14-19	N/A	80	ppb	No	By-product of drinking water chlorination

<b>Inorganic Contaminants</b>	<b>Collection Date</b>	<b>Highest Level Detected</b>	<b>Range of Levels Detected</b>	<b>MCLG</b>	<b>MCL</b>	<b>Units</b>	<b>Violation</b>	<b>Likely Source Of Contaminant</b>
<b>Arsenic</b>	2009	2	S	0	10	ppb	No	Erosion of natural deposits; Runoff from orchards; Runoff from electronics production wastes
<b>Barium</b>	7/08	0.070	S	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
<b>Fluoride <sup>1</sup></b>	2009	1.2	0.90 - 1.2	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Fertilizer discharge
<b>Nitrate <sup>2</sup></b>	2009	5.0	1.5 - 5.1	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
<b>Selenium</b>	2009	3	S	50	50	ppb	No	Discharge from petroleum and metal refineries; Erosion of natural deposits
<b>Synthetic Organic Contaminants (including pesticides and herbicides)</b>	<b>Collection Date</b>	<b>Highest Level Detected</b>	<b>Range of Levels Detected</b>	<b>MCLG</b>	<b>MCL</b>	<b>Units</b>	<b>Violation</b>	<b>Likely Source Of Contaminant</b>
<b>Atrazine</b>	2009	0.3	ND - 1.2	3	3	ppb	No	Runoff from herbicide used on row crops
<b>State Regulated Contaminants</b>	<b>Collection Date</b>	<b>Highest Level Detected</b>	<b>Range of Levels Detected</b>	<b>MCLG</b>	<b>MCL</b>	<b>Units</b>	<b>Violation</b>	<b>Likely Source Of Contaminant</b>
<b>Sodium <sup>5</sup></b>	2009	22	S	N/A	N/A	ppm	No	Erosion of naturally occurring deposits; used in water softener regeneration
<b>Zinc <sup>6</sup></b>	2009	262	S	N/A	5000	ppb	No	Naturally occurring; discharge from metal factories

**Note: The state requires monitoring of certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Therefore, some of this data may be more than one year old.**

Radioactive Contaminates	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source Of Contaminant
<b>Combined Radium 226/228</b>	2009	.35	S	0	5	(pCi/L)	No	Erosion of natural deposits
<b>Gross alpha emitters</b>	2009	.58	S	0	15	(pCi/L)	No	Erosion of natural deposits

#### Turbidity <sup>4</sup>

Limit (Treatment Technique)	Lowest Monthly % meeting limit	Violation	Source
0.3 NTU	100	No	Soil Runoff
Limit (Treatment Technique)	Highest Single Measurement	Violation	Source
1 NTU	0.13	No	Soil Runoff

Total Organic Carbon	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source Of Contaminant
<b>TOC</b> [Total organic carbon] (removal factor) <sup>3</sup>	2009	1.1	0.9 – 2.3	N/A	TT Removal Greater than or equal to 1.0	ppm	No	Naturally present in the environment

Unregulated Substances	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Violation	Likely Source Of Contaminant
<b>N-Nitrosodimethylamine (NDMA)<sup>7</sup></b>	2009	0.023	0.010 – 0.036	ppb	No	Nitrosamines can form as intermediates and byproducts in chemical synthesis and manufacture of rubber, leather, and plastics; can form spontaneously by reaction with precursor amines with nitrosating agents (nitrate and related compounds), or action of nitrate-reducing bacteria. Foods such as bacon and malt beverages contain nitrosamines; there is also evidence that they form in the upper GI tract.
<b>Sulfate <sup>7</sup></b>	2009	41.6	S	ppm	No	Erosion of naturally occurring deposits

S = Single Sample taken

## FOOTNOTES

<sup>1</sup> Fluoride is added to the water supply to help promote strong teeth. The Illinois Department of Public Health recommends an optimal fluoride level of 0.9 mg/L to 1.2 mg/L.

<sup>2</sup> The value in the "amount detected" column is the maximum detected for the year. Nitrate in the drinking water at levels above 10 ppm is a health risk for infants less than 6 months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask the advice of your health care provider.

<sup>3</sup> Total organic carbon (TOC) has no health effects, However, TOC provides means for the formation of disinfection by-products. One way to minimize disinfection by-product formation is to remove a specific percentage of the TOC present in the source water. The numbers in the Amount Detected and Range columns are the TOC removal factors, where the removal factor is defined as the actual percent TOC removal divided by the required percent removal. A value of 1.0 or greater in the Amount Detected column indicates that compliance with the removal requirement was achieved.

<sup>4</sup> Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The treatment technique requires that at least 95% of routine samples are less than or equal to 0.3 NTU, and no sample exceeds 1 NTU. We are reporting the percentage of all readings meeting the standard of 0.3 NTU, plus the highest reading of the year.

<sup>5</sup> There is no state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials that are concerned about sodium intake due to dietary precautions. If you are on a sodium-restricted diet, you should consult a physician about this level of sodium in the water.

<sup>6</sup> Zinc is not currently regulated by the USEPA. However, there is a state has set a MCL for Zinc and therefore monitoring is required.

<sup>7</sup> A maximum containment level (MCL) for this substance has not been established by either state or federal regulations, nor has a mandatory health effects language. The purpose for the monitoring this substance is to assist the USEPA in determining the occurrence of unregulated contaminants in the dinking water, and whether future regulation is warranted. For the N-Nitroso-dimethylamine and the N-Nitroso-pyrrolidine in the Amount Detected column we are reporting the average, and in the Range of detection column we are reporting the lowest and highest individual readings.