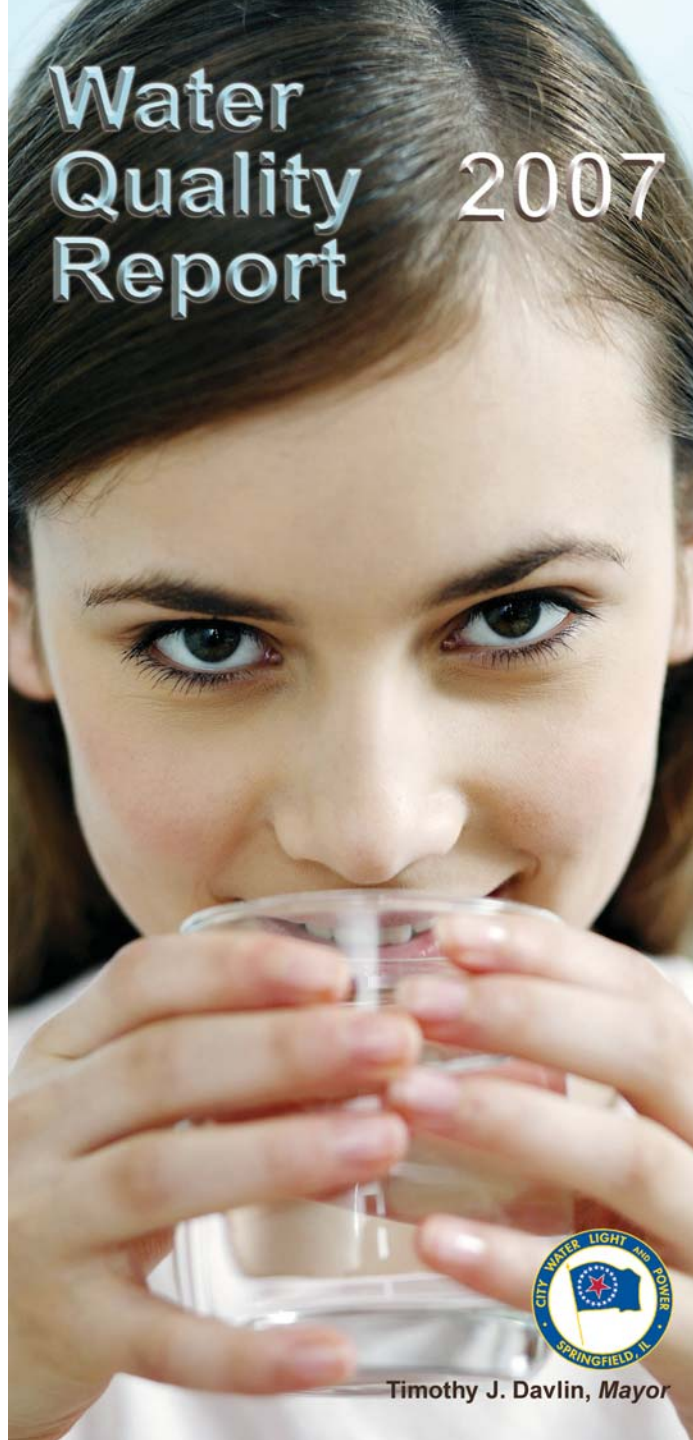


# Water Quality Report 2007



Timothy J. Davlin, Mayor

**T**he City of Springfield is pleased to bring you the ninth annual Water Quality Report for consumers of drinking water provided by your municipal utility, City Water, Light & Power. One result of the Safe Drinking Water Act amendments of 1996 is that water utilities across the nation are bringing unprecedented amounts of water quality information to their customers.

We hope the information provided here will enlighten you about some of the monitoring undertaken to evaluate the production of your drinking water. Details about where your water comes from, what it contains, and how it compares to standards set by the regulatory agencies are included.

As this report will demonstrate, the City of Springfield is committed to providing you with high quality water.

Sincerely,



Timothy J. Donlin  
Mayor



Todd Pennington  
General Manager

## About This Report

In 2007, as in years past, your tap **water produced by City Water, Light and Power (CWLP) met all United States Environmental Protection Agency (USEPA) and State of Illinois drinking water health standards.** The purification process is monitored 24 hours each day, and we are pleased to report that the utility had **no violations** of a contaminant level or of any other water quality standard in 2007. This report summarizes the quality of water that we provided last year. Included are details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report and other utility information are also available on the CWLP website at [www.cwlp.com](http://www.cwlp.com).

CWLP utility issues are discussed at utilities committee meetings, which are held at 5:15 p.m. on each Wednesday preceding a regularly scheduled full City Council meeting. City Council meetings take place at 6 p.m. on the first and third Tuesdays of each month. These meetings are open to the public and are held in the Springfield City Council chambers on the third floor of Municipal Center West, 300 S. 7th St.

If you have any questions about this report or your water system, please contact Ted Meckes or Kim Lucas at (217) 757-8630. We are committed to providing you with high quality water for your use.

## About Drinking Water Contaminants

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 can dissolve naturally occurring minerals and radioactive material and can pick up substances resulting from the presence of animals or from human activity. Possible contaminants consist of:

- *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, urban stormwater

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 stormwater run-off, and septic systems;
- *Radioactive contaminants*, which may be naturally occurring or the result of oil and gas production and mining activities.

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. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

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 USEPA's Safe Drinking Water Hotline (1-800-426-4791).

To ensure that tap water is safe to drink, the USEPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Illinois Environmental Protection Agency (IEPA) administers the drinking water program in Illinois under rules adopted by the Illinois Pollution Control Board. These rules are identical in substance to those of the USEPA. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Due to a favorable monitoring history, no variances or exemptions have been issued to the CWLP Water Division by the USEPA or IEPA.

This *Water Quality Report* includes tables that will give you a better picture of the drinking water contaminants CWLP tested for.

## Definition of Terms

**Maximum Contaminant Level Goal (MCLG)** Level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Maximum Contaminant Level (MCL)** Highest level of a contaminant allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology.

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

**Maximum Residual Disinfectant Level (MRDL)** Highest level of disinfectant allowed in drinking water.

**Highest Level Found** Represents the highest level found of sample result data collected during the calendar year. It may represent a single sample if only one sample was collected.

**Range of Detections** Represents a range of individual sample results, from lowest to highest, that were collected during the calendar year.

**Date of Sample** If a date is provided, the Illinois EPA requires monitoring for this contaminant less than once per year because concentrations change infrequently. If no date appears, monitoring for this contaminant was conducted during the calendar year.

**Action Level (AL)** Concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

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

**nd** Not detectable at testing limits.

## Measurement Definitions

**ppm** Parts per million, or milligrams per liter

**ppb** Parts per billion, or micrograms per liter

**pCi/l** Picocuries per liter; measures radioactivity

**NTU** Nephelometric Turbidity Unit; measures cloudiness in drinking water

**% < 0.5 NTU** Percent of samples less than 0.5 NTU

**% pos/mo** Percent of positive samples per month

**# pos/mo** Number of positive samples per month

## Data Table Footnotes

<sup>1</sup>**Turbidity** Measure of the cloudiness of the water. A good indicator of water quality and the effectiveness of our filtration system and disinfectants.

<sup>2</sup>**Beta/Photon Emitters** The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/l to be a level of concern for beta particles.

<sup>3</sup>**Fluoride** Added to the water supply to promote strong teeth. The Illinois Department of Public Health recommends an optimal fluoride range of 0.9 mg/l to 1.2 mg/l.

<sup>4</sup>**Lead** 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. CWLP 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 might 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 [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

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

<sup>6</sup>**pH** Measure of hydrogen ion concentration expressed as acidity or alkalinity. The pH scale is in units of 0-14, where 7 is neutral, less than 7 acidic, and greater than 7 alkaline.

<sup>7</sup>**CaCo<sub>3</sub>** Calcium carbonate.

Many chemical parameters other than those listed in this report were evaluated but were not detected. For a full list of tested parameters, call the CWLP Water Purification Plant at 757-8630.

## 2007 Detected Contaminants

CONTAMINANT (unit of measurement) Typical source of contaminant	MCLG	MCL	Highest Level Found	Range of Detections	Violation	Date of Sample
<b>Microbial Contaminants</b>						
TOTAL COLIFORM BACTERIA (% pos/mo) Naturally present in the environment	5%	5%	2%			
FECAL COLIFORM AND E. COLI (# pos/mo) Human and animal fecal waste	0	0	1			
TURBIDITY <sup>1</sup> (NTU) (<0.5 NTU) Soil runoff	n/a	TT	100.00	100.000 - 100.000		
TURBIDITY (NTU) Soil runoff	n/a	TT = 5NTU <sub>max</sub>	0.260	n/a		
<b>Radioactive Contaminants</b>						
BETA/PHOTON EMITTERS <sup>2</sup> (pCi/l) Decay of natural and man-made deposits	0	50	2.000	2.000 - 2.000		1/13/03
<b>Inorganic Contaminants</b>						
BARIUM (ppm) Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	2	2	0.022	0.022 - 0.022		
COPPER (ppm) Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	1.3	AL = 1.3	0.071	0 exceeding AL		
FLUORIDE <sup>3</sup> (ppm) Erosion of natural deposits; water additive for strong teeth; discharge from fertilizer/aluminum factories	4	4	1.2	0.79 - 1.2		
LEAD <sup>4</sup> (ppb) Corrosion of household plumbing systems; erosion of natural deposits	0	AL = 15	1.4	0 exceeding AL		
NITRATE (as NITROGEN) (ppm) Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	10	10	2.3	2.3 - 2.3		
NITRATE & NITRITE (ppm) Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	10	10	0.074	0.074 - 0.074		5/2/06
SELENIUM (ppb) Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines	50	50	2.000	2.000 - 2.0000		
<b>Synthetic Organic Contaminants</b>						
SIMAZINE (ppb) Herbicide runoff	4	4	0.54	nd - 0.54		
<b>Disinfectants/Disinfection By-Products</b>						
THMs (TOTAL TRIHALOMETHANES) (ppb) By-product of drinking water chlorination	n/a	80	79.100	29.700 - 79.100		
HAA5 (TOTAL HALOACETIC ACIDS) (ppb) By-product of drinking water chlorination	n/a	60	32.400	12.000 - 32.400		
CHLORAMINES (ppm) Water additive used to control microbes	MRDLG=4	MRDL=4	1.8	1.6 - 2.0		
<b>State Regulated Contaminants</b>						
SODIUM <sup>5</sup> (ppm) Erosion of naturally occurring deposits; used as water softener	n/a	n/a	8.200	8.200 - 8.200		



### Cryptosporidium Monitoring

Cryptosporidium is a microbial parasite found in surface water throughout the U.S. Filtration removes Cryptosporidium, but the most commonly used filtration methods cannot guarantee 100 percent removal. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease (cryptosporidiosis) within a few weeks. However, immuno-compromised people are at a greater risk of developing a life-threatening illness. Cryptosporidium must be ingested to cause the disease, and it may be spread through means other than drinking water, such as poor sanitation practices.

CWLP has tested for Cryptosporidium in both the lake water and treated water for thirteen years. Cryptosporidium was not detected in the source water in 2007. Cryptosporidium has never been detected in the drinking water. Treatment processes have been optimized to ensure that if there are Cryptosporidium cysts in the source water, they will be removed during the treatment process. By maintaining low turbidity, a result of efforts to remove particles from the water, the potential threat of Cryptosporidium organisms getting into the drinking water system is greatly reduced.

## Converting Lake Water to Drinking Water

Lake Springfield is the surface water source of our drinking water. It contains 17.5 billion gallons when full and covers about 4,200 acres. Its 265-square-mile watershed, including the Sugar and Lick Creek drainage areas, is composed primarily of agricultural land. During times of low precipitation, we pump water from the South Fork of the Sangamon River at its confluence with Horse Creek.

A source water assessment for our supply has been completed by the IEPA. Information provided by this assessment indicates the vulnerability of our water supply to potential sources of contamination. Causes of pollution to the lake include nutrients, siltation, suspended solids, and organic enrichment. Primary sources of pollution include agricultural runoff, land disposal (septic systems), and shoreline erosion. If you would like a copy of the assessment, call the Water Purification Plant at (217) 757-8630.

To convert this raw supply to drinking water, lake water is pumped through CWLP's Water Treatment Plant where chemical reactions are initiated to assist in the removal of algae, suspended solids, hardness, and many chemical constituents. The clarification basins remove the bulk of these materials and the final filter beds remove very small particles. Fluoride is added to prevent tooth decay; chlorine to disinfect the finished water; and ammonia to stabilize the chlorine in the distribution system.

### Common Quality Analyses of Springfield Drinking Water

<i>values in ppm unless otherwise noted</i>	<i>Min.</i>	<i>Avg.</i>	<i>Max.</i>
pH <sup>6</sup> (units)	9.0	9.4	9.7
TOTAL ALKALINITY (as CaCO <sub>3</sub> ) <sup>7</sup>	33	49	67
TOTAL HARDNESS (as CaCO <sub>3</sub> ) <sup>7</sup>	98	129	164
CALCIUM HARDNESS (as CaCO <sub>3</sub> ) <sup>7</sup>	50	69	102
MAGNESIUM HARDNESS (as CaCO <sub>3</sub> ) <sup>7</sup>	26	59	94
RESIDUAL CHLORINE, TOTAL	1.5	2.3	2.9