

2009
ANNUAL
WATER
QUALITY
REPORT

Water testing performed in 2008



Presented By:
CITY OF DECATUR

PWS ID#: 1150150

Meeting the Challenge

Once again we proudly present our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2008. We are pleased to tell you that our compliance with all state and federal drinking water laws remains exemplary. We continue our commitment to provide the highest quality drinking water possible. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

Where Does My Water Come From?

The City of Decatur uses Lake Decatur as its source of drinking water. Lake Decatur is 2,850 surface acres in size and is located entirely within the city limits of Decatur. The Sangamon River is the primary source of water for Lake Decatur, which has a drainage area of 925 square miles, 87 percent of which is used for growing corn and soybeans. When Lake Decatur water levels are low, the city uses wells located in Macon and DeWitt counties to supplement the water supply.



How Is My Water Treated and Purified?

The treatment process consists of a series of steps. First, raw water is pumped from Lake Decatur to the South Water Treatment Plant. Chlorine dioxide is added to destroy bacteria and protozoan that may be in the raw water. The water then goes to mixing tanks where aluminum sulfate and calcium hydroxide are added for softening. The addition of these substances causes small particles to adhere to one another, making them heavy enough to settle into basins from which they are removed. Powdered activated carbon is also added for taste and odor control. The fine particles that still remain are removed in the filtration process, in which the water passes through layers of sand and anthracite. Chlorine is then added to maintain the disinfection process through the distribution system. Lastly, a small amount of fluoride is added to prevent dental decay. Positive water pressure is continuously maintained in the distribution system to prevent the intrusion of any contaminants into our water mains.

Possible Contaminants

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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 dissolves naturally occurring minerals, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 may also come from gas stations, urban stormwater runoff, and septic systems;

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

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

Questions?

For more information about this report, or for any questions relating to your drinking water, please contact Rob Shirley, Water Production Manager, at (217) 424-2866 or rshirley@decaturil.gov.

Source Water Assessment

The Illinois EPA has completed a source water assessment for Decatur. The Illinois EPA considers all surface water sources of public water supply to be susceptible to potential pollution problems. This is the reason for the mandatory treatment of all public water supplies in Illinois. Mandatory treatment includes coagulation, sedimentation, filtration, and disinfection. Primary sources of pollution in Illinois lakes can include agricultural runoff, land disposal (septic systems), and shoreline erosion. Due to the low geologic sensitivity of the wells and monitoring results, the Illinois EPA does not consider Decatur's wells to be susceptible to volatile organic contaminants (VOCs), synthetic organic contaminants (SOCs), or inorganic contaminants (IOCs). In accordance with Illinois EPA regulations, the wells each have a minimum protection zone of 200 feet.

Under the Clean Water Act Section 319, the U.S. EPA provides grants for the Illinois EPA to finance projects that demonstrate cost-effective solutions to nonpoint source (NPS) problems and promote public knowledge and awareness of NPS pollution. Section 319 projects funded for the Lake Decatur Watershed include the Upper Sangamon River Basin Water Quality Improvement Project and the Nutrient Management Plan Implementation. The Macon County Soil and Water Conservation District and the Agricultural Watershed Institute also administer several water quality improvement projects in the watershed.

Lead Service Lines

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. We are 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 www.epa.gov/safewater/lead.



Information on the Internet

The U.S. EPA Office of Water (www.epa.gov/watrhome) and the Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation, and public health. Also, the Illinois Environmental Protection Agency has a Web site (www.epa.state.il.us) that provides complete and current information on water issues in Illinois, including valuable information about our watershed. Here are some other sites:

City of Decatur: www.ci.decaturn.il.us/watermanagement.htm

Illinois Public Health Department: www.idph.state.il.us

Illinois State Water Survey: www.sws.uiuc.edu

Macon County Soil and Water: www.maconswcd.com

U.S. EPA Office of Watersheds: www.epa.gov/owow/watershed

U.S. Geological Survey Illinois District: <http://il.water.usgs.gov/>

U.S. Geological Survey Water Resources: <http://water.usgs.gov/>

DrinkTap.org is the Web's best place for water information.

Testing For Cryptosporidium

Cryptosporidium is a microbial parasite found in surface water throughout the world. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. In 2008, the monitoring of our source water indicated the presence of one *Cryptosporidium* oocyst and no *Giardia lamblia* cysts. These organisms were not found in our finished drinking water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised people are at greater risk of developing life-threatening illness. We encourage immunocompromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

Steps taken to reduce this organism from entering Lake Decatur are part of ongoing watershed management programs.

Community Participation

City of Decatur Council meetings are open to the public. For further information, contact the City Clerk's office at (217) 424-2708.



Sampling Results

We are pleased to report that during the past year the water delivered to your home or business complied with, or was a higher quality than, all state and federal drinking water requirements. The table below lists the substances that were detected in our drinking water during 2008. Although all of the substances listed are under the Maximum Contaminant Level (MCL) set by the U.S. EPA, it is important that you know exactly what was detected and how much of the substance was present in your water.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2008	2	2	0.014	0.014–0.014	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chloramines (ppm)	2008	[4]	[4]	1.3	0.2–1.3	No	Water additive used to control microbes
Chlorine (ppm)	2008	[4]	[4]	0.7	0.2–1.6	No	Water additive used to control microbes
Chlorine Dioxide (ppb)	2008	800	800	50	20–120	No	Water additive used to control microbes
Chlorite (ppm)	2008	1	0.8	0.44	ND–0.44	No	By-product of drinking water disinfection
Fluoride (ppm)	2008	4	4	1.06	0.91–1.2	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2008	60	No goal for the total	24	12–36	No	By-product of drinking water disinfection
Nitrate¹ (ppm)	2008	10	10	6.0	2.7–5.9	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium (ppb)	2008	50	50	1.0	1.0–1.0	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
TTHMs [Total Trihalomethanes] (ppb)	2008	80	NA	65	13.7–93.8	No	By-product of drinking water chlorination
Total Organic Carbon (ppm)	2008	TT	NA	1.19	0.86–2.0	No	Naturally present in the environment
Turbidity² (NTU)	2008	TT	NA	0.70	0.07–0.70	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2008	TT	NA	97.13	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2008	1.3	1.3	0.032	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2008	15	0	3	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

UNREGULATED AND OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Boron (ppm)	2008	0.018	0.018 – 0.018	Weathering of rocks; Boric acid volatilization from seawater; Volcanic and geothermal activity
Haloacetic Acids [HAA]–IDSE Results ³ (ppb)	2008	NA	14–33	By-product of drinking water disinfection
n-Nitroso-pyrrolidine ⁴ (ppb)	2008	0.0042	0.0025–0.0067	Nitrosamines can exist in sources of drinking water or can form when disinfectants are added to kill microbes
Sodium ⁵ (ppm)	2008	5.1	5.1–5.1	Erosion of naturally occurring deposits; Used in water softener regeneration
Sulfate (ppm)	2008	51	51–51	Runoff/leaching from natural deposits; Industrial wastes
TTHMs [Total Trihalomethanes]–IDSE Results ³ (ppb)	2008	NA	14–85	By-product of drinking water disinfection

¹Nitrate measured as nitrogen in drinking water at levels above 10 ppm is a health risk for infants of less than six 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 advice from your physician.

²Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

³We were required by the U.S. EPA to conduct an

evaluation of our distribution system. This is known as an Initial Distribution System Evaluation (IDSE) and is intended to identify locations in our distribution system that have elevated disinfection by-product concentrations. Disinfection by-products (e.g., HAAs and TTHMs) result from continuous disinfection of drinking water and form when disinfectants combine with organic matter that naturally occurs in the source water. IDSE results for HAAs and TTHMs are to meet regulatory requirements and not compliance purposes.

⁴A maximum contaminant level (MCL) for this contaminant

has not been established by either state or federal regulations, nor has mandatory health effects language. Unregulated contaminant monitoring is a tool for the U.S. Environmental Protection Agency (EPA) to find unregulated contaminants and determine whether to set drinking water standards for individual contaminants.

⁵There is no state or federal MCL for sodium. However, the state has set an MCL for this contaminant for supplies serving a population of 1,000 or more. If you are on a sodium-restricted diet, you should consult a physician about this level of sodium in the water.

Definitions

AL (Action Level): The concentration of a contaminant that triggers treatment or other required actions by the water supply.

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

MCLG (Maximum Contaminant Level Goal): The 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.

MRDL (Maximum Residual Disinfectant 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.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

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