University of Illinois at Urbana-Champaign

Water Quality Report 2009

Introduction

This 2009 Water Quality Report from the University of Illinois at Urbana-Champaign (U of I) provides information about the source of campus drinking water, contaminant testing, general health precautions, and how calendar year 2009 sample results compare to regulatory requirements. The University is pleased to report that all United States Environmental Protection Agency (USEPA) and Illinois EPA (IEPA) drinking water quality standards have been met, with no violations of maximum contaminant levels (MCLs). If you have any questions about this report or campus drinking water quality, please contact Facilities & Services, Safety and Compliance at **(217) 265-9828** or via email at **malvestu@illinois.edu**. A copy of this report is available from our website at **http://safetyandcompliance.fs.illinois.edu/2009waterqualityreport.pdf** or by contacting Safety and Compliance.

Water Information Sources

Illinois American Water www.illinoisamwater.com

United States Environmental Protection Agency
www.epa.gov/safewater

Safe Drinking Water Hotline: 800-426-4791

Illinois Environmental Protection Agency
www.epa.state.il.us

Surf Your Watershed www.epa.gov/surf
Locate your watershed and a host of information.

Envirofacts www.epa.gov/enviro
U.S. environmental data.

Local Groups Involved in Water and Environmental Issues

Mahomet Aquifer Consortium
www.mahometaquiferconsortium.org

Prairie Rivers Network: 217-344-2371
www.prairierivers.org

What is the Source of U of I Drinking Water?

The University of Illinois purchases drinking water from Illinois-American Water Company (IAWC), Champaign District. IAWC water is delivered through five separate metered feeds into the campus water distribution system, which consists of approximately 80 miles of water main. The University distributes this water to the majority of campus buildings. However some buildings are connected directly to the IAWC water distribution system. As such, the distribution system is considered a public water system. The following information about IAWC, Champaign District water supply is from their 2009 Annual Water Quality Report, available by calling 1-800-538-1125 or visiting their website at http://www.illinoisamerican.com.

The source of supply for IAWC, Champaign County District is groundwater. Twenty-one wells deliver water for treatment to two lime-softening plants: the East Plant, located in Urbana, and the West Plant, located in Champaign. The wells are primarily located in two areas. The north well field taps the Glasford Aquifer and consists of 7 wells that supply the East Plant. The west well field consists of 14 wells that draw from the Mahomet Sands Aquifer and supply water to both the East and West Plants. The wells range from 150 to 366 feet in depth and are protected from surface contamination by geologic barriers. An aquifer is a porous underground formation (such as sand and gravel) that is saturated with water.

A third treatment plant completed at the end of 2009 draws its source of supply from the same Mahomet Sands Aquifer currently supplying much of the water. The third plant draws the water through a new well field at a different location within the aquifer.

Source Water Assessment

The IEPA has completed a source water assessment for the Champaign County system. In this report, IEPA indicates that the wells supplying Champaign County are not geologically sensitive. To determine Illinois American Water Company – Champaign's susceptibility to groundwater contamination, a Well Site Survey Report from February 1991 and a source inventory conducted in 1999 by the Illinois Rural Water Association in cooperation with the Illinois EPA, were reviewed. Based on the information contained in these documents, potential sources of groundwater contamination are present that could pose a hazard to groundwater pumped by the Illinois American Water Company – Champaign' community water supply wells.

The Illinois EPA has determined that IAWC – Champaign Wells #35, #40, #41, #42, #43, #45, #46, and #47 are susceptible to inorganic chemical (IOC), volatile organic chemical (VOC) and synthetic organic chemical (SOC) contamination. This determination is based on a number of criteria including: monitoring conducted at the wells; monitoring conducted at the entry point to the distribution system; and the available hydrogeologic data for the wells. The Illinois EPA has made recommendations to further minimize the risk to the facility's groundwater supply. If you would like additional information on the source water assessment, please contact Safety and Compliance at (217) 265-9828 or the Groundwater Section of the Illinois EPA at (217) 785-4787.

Protecting the Water You Drink

In order to ensure that tap water is safe to drink, USEPA prescribes regulations that limit 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 as public water systems.

The University of Illinois at Urbana-Champaign is required to test water in its distribution system for coliform, lead, copper, trihalomethanes, and haloacetic acids. IEPA requires 15 samples per month to be analyzed for coliform. The University voluntarily analyzes approximately 27 samples per month, almost double the IEPA requirements. The most recent testing results for coliform, lead, copper, haloacetic acids and total trihalomethanes (TTHM) are provided in the Data Summary table at the end of this Report.

IAWC, Champaign District, tested for radon at points prior to entering the campus distribution system in 2004. The maximum level in the treated water was 100 pCi/L, which is less than the limit currently proposed by the USEPA. There is presently no Federal limit on radon in drinking water. Radon is a radioactive gas that comes mainly from the soil; however, some groundwater may also contain radon. Inhalation of radon gas has been linked to lung cancer. The contribution from drinking water is usually small compared to normal indoor levels. If you are concerned about radon in your home and would like information on how to have your home tested, contact the Champaign-Urbana Public Health Department at 217-352-7961 or the National Radon Hotline at 1-800-SOS RADON.

General Information About All Drinking Water

The sources of drinking water (both tap 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 can dissolve naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or 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 may 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 may also come from gas stations, urban storm water runoff and septic systems; and
- Radioactive Contaminants, which may occur naturally or result from oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the USEPA Safe Drinking Water Hotline (1-800-426-4791).

Some Health Considerations

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 U.S. EPA's Safe Drinking Water Hotline (800) 426-4791.

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 and Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the USEPA Safe Drinking Water Hotline (1-800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant woman and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The University of Illinois 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 second 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.

2009 Data Summary

The following table lists the contaminants that were detected in your water. The presence of contaminants does not necessarily indicate that the water poses a health risk. The data in this table represents a combination of the testing results on finished water from the campus distribution system and its parent supply, Illinois-American Water Company, Champaign District. The University of Illinois at Urbana-Champaign monitors water daily at five separate metered feeds. Additionally, the University monitors water at eight points within the campus distribution system. IAWC monitors the parent water supply at points prior to entering the campus distribution system.

2009 Water Quality Data - Detected Contaminants

U of I Samples Collected by the University within the Campus Distribution System

IAWC Samples Collected within the Parent Water Supply by Illinois-American Water Company

Lead and Copper							
Contaminant (Units)	**Sampled by; Date**	**MCLG**	**AL**	**90th Percentile**	**# Sites Exceeding AL**	**Violation?**	**Typical Source of Contaminant**
Copper (ppm)	U of I 8/07/08	1.3	1.3	ND	0	NO	Corrosion of household plumbing; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	U of I 8/07/08	0	15	ND	0	NO	Corrosion of household plumbing; Erosion of natural deposits

Regulated Contaminants							
Contaminant (Units)	**Sampled by; Date**	**MCLG**	**MCL**	**Level Found**	**Range of Detections**	**Violation?**	**Typical Source of Contaminant**
Alpha emitters (pCi/L)	IAWC	0	15	0.7	0.4-0.9	NO	Erosion of natural deposits
Arsenic (ppb)	IAWC	0	10	3.0	3.0	NO	Erosion of natural deposits; Runoff from orchards; Runoff from glass & electronics production wastes
Barium (ppm)	IAWC	2	2	0.08	0.08	NO	Discharge of drilling wastes & from metal refineries; Erosion of natural deposits
Beta/Photon Emitters [1] (pCi/l)	IAWC	0	4	2.3	1.9-2.7	NO	Decay of natural and man-made products
Chlorine	U of I	MRDLG 4	MRDL 4	5	0.1 - 5	NO	Water additive used to control microbes.
Fluoride (ppm) [2]	IAWC	4	4	1.0	0.9-1.1	NO	Water additive that promotes strong teeth
Total Haloacetic Acids (HAA5) (ppb)	U of I	NA	60	ND	0-1.7	NO	By-product of drinking water chlorination
Combined Radium (pCi/L)	IAWC	0	5	1.1	0.9-1.3	NO	Erosion of natural deposits
TTHM (Total Trihalomethanes) (ppb)	U of I	NA	80	1.5	0-1.5	NO	By-product of drinking water chlorination

State Regulated Contaminants							
Contaminant (Units)	**Sampled by; Date**	**MCLG**	**MCL**	**Level Found**	**Range of Detections**	**Violation?**	**Typical Source of Contaminant**
Sodium (ppm) [3]	IAWC	NA	NA	37	37	NO	Erosion of natural deposits; A water softener

Bacterial Results							
Contaminant (Units)	**Sampled by; Date**	**MCLG**	**MCL**	**% positive**	**Range of Detections**	**Violation?**	**Typical Source of Contaminant**
Total Coliforms [4] (% pos/month)	U of I	0%	<5%	2.5%	NA	NO	Naturally present in the environment

Unregulated Substances							
Contaminant (Units)	**Sampled by; Date**	**MCLG**	**MCL**	**Level Found**	**Range of Detections**	**Violation?**	**Typical Source of Contaminant**
N-Nitroso-Pyrrolidine (NPYR) (ppm) [5]	IAWC 2008	NA	NA	0.004	0.004	NO	Nitrosamines can form as byproducts in chemical manufacture; by the reaction of amines with nitrosating agents, or by the action of nitrate-reducing bacteria. Foods such as bacon and malt beverages can contain nitrosamines; there is also evidence that they form in the upper GI tract.

[1] **Beta/Photon Emitters**
The MCL for beta particles is 4 mrem/yr. EPA considers 50 pCi/l to be a level of common concern.

[2] **Fluoride**
Fluoride is added to the water supply to help promote strong teeth. The Illinois Department of Public Health recommends an optimal fluoride range of 0.9 mg/l to 1.2 mg/l.

[3] **Sodium**
Sodium has no federal or state MCL. 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.

[4] **Coliform**
Coliforms are bacteria that are naturally present in the environment and are used as an indicator of the general bacteriological quality of the water. We are reporting the highest number of positive samples collected in any one month.

[5] **N-Nitroso-Pyrrolidine**
A MCL for this substance has not been established by either state or federal regulations, nor has mandatory health effects language. The purpose of monitoring this substance is to assist USEPA in determining the occurrence of unregulated contaminants in drinking water, and whether future regulation is warranted.

Definition of Terms

MCLG	Maximum Contaminant Level Goal: The level of contaminant in drinking water, below which there is no known or expected risk to health. MCLGs allow for a margin of safety
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 technology.
MRDLG	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.
MRDL	The highest level of a disinfectant allowed in drinking water. There is convincing evidence of a disinfectant is necessary for control of microbial contaminants.
pCi/l	Picocuries per liter, a measurement of the natural rate of disintegration of radioactive contaminants in water.
AL	Action Level: The concentration of contaminant that, when exceeded, triggers treatment or other required actions by the water supply.

ppm	parts per million or milligrams per liter
ppb	parts per billion or micrograms per liter
ND	not detectable at testing limits
NA	not applicable
Date Sampled	If sample date appears, the Illinois EPA requires monitoring for the contaminant less than once per year because the concentrations do not frequently change. If sample date does not appear, monitoring was conducted in 2009.
Level Found	This column represents an average of sample result data collected during the sample period. In some cases, it may represent a single sample if only one sample was collected. For lead & copper, the level found equals the 90th percentile of all samples taken.
Range of Detections	This column represents a range of individual sample results, from lowest to highest, that were collected during the sample period.