CITY OF CHICAGO

2011 Water Quality Report

City of Chicago ■ Rahm Emanuel, Mayor

Department of Water Management ■ Thomas H. Powers, P.E. , Commissioner

Water in the Street or Basement	Call 311
Water Quality Questions	(312) 744-8190
Department of Finance Water Bill Questions	(312) 744-4H2O TTY (312) 744-2968
E-mail and Internet	E-mail: water@cityofchicago.org www.cityofchicago.org/watermanagement
When e-mailing always include your name, account number & call back number.	
IEPA's Regional Offices (Illinois)	(847) 608-3131
EPA's Safe Drinking Water Hotline	(800) 426-4791
EPA's Water Resource Center	(800) 832-7828
EPA's General Information Line	(312) 353-2000 TTY (312) 886-4658
If you have any questions about this report please contact Alan Stark at:	(312) 742-7499

City of Chicago Emerging Contaminant Study Analysis of Endocrine Disrupting Chemicals, Pharmaceuticals, and Personal Care Products

The City of Chicago Department of Water Management (CDWM) has completed a water quality study to monitor some compounds that have not historically been considered to be contaminants of concern, but have been recently documented at trace concentrations in our nation's waterbodies. This study, completed in the years 2009-2011, includes compounds known as Endocrine Disrupting Chemicals (EDCs) and Pharmaceuticals & Personal Care Products (PPCPs), which are considered to be emerging contaminants. EDCs are compounds with potential to interfere with natural hormone systems. PPCPs are a group of compounds consisting of prescription or over-the-counter therapeutic drugs, veterinary drugs, and consumer products such as sun-screen, lotions, insect repellent, and fragrances. The reader is encouraged to visit the United States Environmental Protection Agency (USEPA) website to learn more about EDCs (http://www.epa.gov/ncer/science/endocrine/) and PPCPs (http://www.epa.gov/ppcp/).

In 2011, CDWM has also monitored for hexavalent chromium, also known as chromium-6, and continues to do so quarterly. USEPA has not yet established a standard for chromium-6, a contaminant of concern which has both natural and industrial sources. Please address any questions or concerns to DWM's Water Quality Division at 312-742-7499. A list of detected contaminants from the Emerging Contaminant Study and additional information, including chromium-6 monitoring data, are posted on the City's website which can be accessed at following address below:

http://www.cityofchicago.org/city/en/depts/water/supp_info/water_quality_resultsandreports/city_of_chicago_emergincontaminantstudy.html

CITY OF CHICAGO DEPARTMENT OF WATER MANAGEMENT

This year, as in years past, your tap water met all USEPA and state drinking water health standards. Our system vigilantly safeguards its source water supply, and we are able to report that the Department of Water Management, City of Chicago had no violation of a contaminant level or of any other water quality standard in the previous year. This report summarizes the quality of water that we provided last year, including details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. We are committed to providing you with this information because informed customers are our best allies.

Source Water Assessment Summary

The Illinois EPA implemented a Source Water Assessment Program (SWAP) to assist with watershed protection of public drinking water supplies. The SWAP inventories potential sources of contamination and determined the susceptibility of the source water to contamination. The Illinois EPA has completed the Source Water Assessment Program for our supply.

Source Water Location

The City of Chicago utilizes Lake Michigan as its source water via two water treatment plants. The Jardine Water Purification Plant serves the northern areas of the City and suburbs, while the South Water Purification Plant serves the southern areas of the City and suburbs. Lake Michigan is the only Great Lake that is entirely contained within the United States. It borders Illinois, Indiana, Michigan, and Wisconsin, and is the second largest Great lake by volume with 1,180 cubic miles of water and third largest by area.

Susceptibility to Contamination

The Illinois EPA considers all surface water sources of community water supply to be susceptible to potential pollution problems. The very nature of surface water allows contaminants to migrate into the intake with no protection only dilution. This is the reason for mandatory treatment for all surface water supplies in Illinois. Chicago's offshore intakes are located at a distance that shoreline impacts are not usually considered a factor on water quality. At certain times of the year, however, the potential for contamination exists due to wet-weather flows and river reversals. In addition, the placement of the crib structures may serve to attract waterfowl, gulls and terns that frequent the Great Lakes area, thereby concentrating fecal deposits at the intake and thus compromising the source water quality. Conversely, the shore intakes are highly susceptible to storm water runoff, marinas and shoreline point sources due to the influx of groundwater to the lake.

Further information on our community water supply's Source Water Assessment Program is available by calling the State of Illinois at 217-785-4787.

Water Quality Data Table Footnotes

TURBIDITY: Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration system and disinfectants.

UNREGULATED CONTAMINANTS: A maximum contaminant level (MCL) for this contaminant has not been established by either state or federal regulations, nor has mandatory health effects language. The purpose for monitoring this contaminant is to assist USEPA in determining the occurrence of unregulated contaminants in drinking water, and whether future regulation is warranted.

2011 Water Quality Data: Detected Contaminants

Contaminant (unit of measure) Typical Source of Contaminant	MCLG	MCL	Highest Level Detected	Range of Detections	Violation	Date of Sample
Microbial Contaminants						
TOTAL COLIFORM BACTERIA (% pos/mo) Human and animal fecal waste.	0	5%	0.2%	n/a	–	–
FECAL COLIFORM AND E. COLI (# pos/mo) Human and animal fecal waste.	0	0	1	n/a	–	–
TURBIDITY (%<0.3 NTU) Soil runoff. Lowest monthly percent meeting limit.	n/a	TT	99.50%	99.50% - 100.00%	–	–
TURBIDITY (NTU) Soil runoff. Highest single measurement.	n/a	TT=1NTUmax	0.86	n/a	–	–
Inorganic Contaminants						
BARIUM (ppm) Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.	2	2	0.0208	0.0201 - 0.0208	–	–
COPPER (ppm) Corrosion of household plumbing systems: Erosion of natural deposits.	1.3	AL=1.3	0.032** (90th percentile)	0 sites exceeding AL	–	6/1/09 to 9/30/09
LEAD (ppb) Corrosion of household plumbing systems; Erosion of natural deposits.	0	AL=15	6.07** (90th percentile)	1 site exceeding AL	–	6/1/09 to 9/30/09
NITRATE (AS NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	10	10	0.44	0.39 - 0.44	–	–
TOTAL NITRATE & NITRITE (AS NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	10	10	0.44	0.39 - 0.44	–	–
Disinfectant\Disinfection By-Products						
TTHMs [TOTAL TRIHALOMETHANES] (ppb) By-product of drinking water disinfection.	n/a	80	19.6*	9.40 - 32.9	–	–
HAA5 [HALOACETIC ACIDS] (ppb) By-product of drinking water disinfection.	n/a	60	10.5*	5.30 - 14.5	–	–
CHLORINE (as Cl2) (ppm) Drinking water disinfectant.	4.0	4.0	0.80	0.702 - 0.8177	–	–
TOC [TOTAL ORGANIC CARBON] The precentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements set by the IEPA.						
Unregulated Contaminants						
SULFATE (ppm) Erosion of naturally occurring deposits.	n/a	n/a	16.1	14.4 - 16.1	–	–
SODIUM (ppm) Erosion of naturally occurring deposits; Used as water softener.	n/a	n/a	6.64	6.63 - 6.64	–	–
State Regulated Contaminants						
FLUORIDE (ppm) Water additive which promotes strong teeth.	4	4	0.92	0.81 - 0.92	–	–
Radioactive Contaminants						
COMBINED RADIUM (226/228) (pCi/L) Decay of natural and man-made deposits.	0	5	1.38**	1.300 - 1.380	–	03-17-2008
GROSS ALPHA excluding radon and uranium (pCi/L) Decay of natural and man-made deposits.	0	15	0.88**	0.090 - 0.880	–	03-17-2008

*TTHMs, HAA5, and Chlorine are for the Chicago distribution system. * Highest Running Annual Average Computed.*

***The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, is more than one year old. Some contaminants are sampled less frequently than once a year; as a result, not all contaminants were sampled for during the CCR calendar year. If any of these contaminants were detected the last time they were sampled for, they are included in the table along with the date that the detection occurred. Compliance monitoring for lead and copper is conducted every 3 years. Radiochemical contaminant monitoring is conducted every 6 years.*

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.

SODIUM: There is not a 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.

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. We 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.

EDUCATIONAL STATEMENTS REGARDING COMMONLY FOUND DRINKING WATER CONTAMINANTS

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).

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).

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 materials, and 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 be naturally occurring or be the result of oil and gas production and mining activities.

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. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Definition of Terms

Maximum Contaminant Level Goal (MCLG): 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.

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

Maximum Residual Disinfectant Level Goal (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 disinfectants to control microbial contaminants.

Maximum Residual Disinfectant Level (MRDL): The highest level of a drinking water disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary that addition of a disinfectant is necessary for control of microbial contaminants.

Highest Level Detected: This column represents the highest single sample reading of a contaminant of all the samples collected in 2009.

Range of Detections: This column represents a range of individual sample results, from lowest to highest that were collected during the CCR calendar year.

Date of Sample: If a date appears in this column, the Illinois EPA requires monitoring for this contaminant less than once per year because the concentrations do not frequently change. If no date appears in the column, monitoring for this contaminant was conducted during the Consumer Confidence Report calendar year.

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

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.
nd: Not detectable at testing limits. **n/a:** Not applicable

Unit of Measurement

ppm: Parts per million, or milligrams per liter

ppb: Parts per billion, or micrograms per liter

NTU: Nephelometric Turbidity Unit, used to measure cloudiness in drinking water

%<0.3 NTU: Percent samples less than 0.3 NTU

pCi/L: Picocuries per liter, used to measure radioactivity

ND: Analyte not detected at or above the reporting limit

Unregulated Contaiminant Monitoring Rule II (UCMRII)

Our water system was required to monitor for all contaminants required under the Unregulated Contaminant Monitoring Rule II (UCMRII). Started in 2009, monitoring under UCMR II was completed in 2011, with none of the contaminants detected. A final Round #4 sampling completed in 2011 also had no detected contaminants. Inquiries and results may be obtained by calling the Water Quality Division office at (312) 742-7499.

2011 VOLUNTARY MONITORING

The City of Chicago has continued monitoring for Cryptosporidium, Giardia and E. coli in its source water as part of its water quality program. To date, Cryptosporidium has not been detected in these samples, but Giardia was detected in 2010 in one raw lake water sample collected in September 2010. Treatment processes have been optimized to provide effective barriers for removal of Cryptosporidium oocysts and Giardia cysts in the source water, effectively removing these organisms in the treatment process. By maintaining low turbidity through the removal of particles from the water, the possibility of Cryptosporidium and Giardia organisms getting into the drinking water system is greatly reduced.

Do you have a Water Meter?

By now you have probably heard the good news–from a neighbor, family member, or a friend-who has had a **FREE** water meter installed in their home through the MeterSave Program. The current average water and sewer bill savings for MeterSave customers is over 50%!

In 2011, we installed more than twice the meters installed in 2010. This year MeterSave volunteers are increasing and we are on track to install even more water meters!

MeterSave is available to all eligible single family or two-flat non-metered homeowners in Chicago that volunteer to have a **FREE** water meter installed. With your **FREE** installation you receive our 7-year guarantee that your water and sewer bill will not exceed what you would have paid as a non-metered customer, so long as you stay current on your bill. If you move, the guarantee does not transfer to the new owner.

By installing a water meter you become more aware of your water use. By making small changes in your everyday water habits you can easily save water and money. In addition to the installation of **FREE** water meter and the 7-year guarantee, MeterSave participants may choose from one of the following **FREE** water conservation tools (and two if a whole block volunteers!): rain barrel, outdoor water conservation kit, or indoor water conservation kit.

The water meter and installation are FREE!

Signing up is easy

You can visit our web site at www.metersave.org and complete the online registration or simply call 3-1-1 or 312-744-4H20 at any time. Visit our on-line calendar to schedule your installation at www.metersave.org.

To volunteer for a FREE water meter

1) Be the owner or have approval from the owner of

- *Single family residence*
- *Two-flat residence*

2) Be current on water bill

- *Active payment plan is current*
- *Current water bill is not delinquent*

What to expect

The water shut-off valve must be accessible and clear of clutter. Be prepared to answer the following questions:

- *Do you have a basement?*
- *Is the water shut-off valve in your basement and is the area un-finished or is the shut-off valve in a mechanical room? If the answer is yes, this is the optimal scenario to install a meter. Unfortunately, some fully-finished or remodeled basements have hidden water shut-off valves. With a minimal amount of work our crew can create an access door.*

Installations take approximately two hours, usually less. Crews are scheduled by areas and currently appointments are being made about 4-6 weeks from registration.

Meter or Non-Metered

Non-Metered water bills are billed every 6 months and are based on a flat rate assessment including such factors as lot size and the number of water fixtures installed. Typically, a detail of the assessment is provided on the front of the water bill.

Residential metered water bills are billed every 2 months and are based on the actual water usage. The number of gallons that pass through the meter is multiplied by the water rate. The 2012 water rate is $2.51 per 1,000 gallons and is one of the lowest in the nation. The water rate charged is the same for all metered accounts.

The sewer charge is 89% of the water charge (metered or non-metered) and is also listed on the water bills. For metered customers, if the water usage decreases so does the sewer charge allowing the customer to save more money.

Visit **www.metersave.org** to volunteer today for your **FREE** water meter and **FREE** installation!

Please note: Some meter installations may require more than one visit for completion.

DOWNSPOUT DISCONNECTS

There is a big challenge we all face together: stormwater management and the basement floods that sometimes accompany heavy storms.

Climate change is a reality, and the rain storms of the warmer months have been known to dump as many as 2-3 inches of water per hour on various neighborhoods. Sewers fill up, and water still pours in. The result can be flooded basements, and the loss of property ranging from appliances to sentimental family heirlooms.

While we are renewing the infrastructure, that is a long process, and won't solve the problem.

We need to divert as much water as possible from entering the sewers during the heaviest storms. We need to do it on a neighborhood basis. Steps include downspout disconnection, green design, rain gardens, and other collective action.

The Department of Water Management has been leading a pilot project called the Basement Flooding Partnership. Community leaders, aldermen, and City of Chicago experts work in unison to understand the problem and take practical steps to address it.

Please visit **www.cityofchicago.org/watermanagment** for more details.

Message from

Mayor Rahm Emanuel

Dear Chicago Water Customer,

This Water Quality Report meets a formal obligation to report to every customer on the drinking water we purify and deliver. I am pleased to report our water is safe and meets or exceeds every standard established by the US Environmental Protection Agency and the Illinois Environmental Protection Agency.

This report, of course, does not tell the full story of our water system. We face challenges of infrastructure renewal. More than a quarter of our 4,300 miles of water main are beyond their one hundred year life expectancies. It is imperative that we renew our system and we have launched an ambitious program to triple the rate of main replacement. This is essential to have a system that efficiently and safely serves our city and suburban customers. In the next ten years, we will replace 880 miles of water mains, and lining or replacing over 700 miles of sewers, all of which are 100 years old or more.

We can take pride in the water we have and both the system that produces it. There is much to be done, and I look forward to working together to improve and protect this valuable resource.

Sincerely,

Rahm Emanuel

Rahm Emanuel
Mayor

Este informe contiene información muy importante. Tradúscalo ó hable con alguien que lo entienda bien.

City of Chicago
Rahm Emanuel, Mayor

The Department of Water Management
Jardine Water Purification Plant
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Chicago, Illinois 60611