

CITY OF CHICAGO

2014 WATER QUALITY REPORT

City of Chicago
Rahm Emanuel
Mayor

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



CITY OF CHICAGO, DEPARTMENT OF WATER MANAGEMENT (DWM) SOURCE WATER ASSESSMENT SUMMARY FOR THE 2014 CONSUMER CONFIDENCE REPORT (CCR)

**PLEASE VISIT OUR WEBSITE
FOR MORE INFORMATION**

www.cityofchicago.org/watermanagement

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

2014 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.

In 2014, DWM has also continued monitoring for hexavalent chromium, also known as chromium-6. 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. Data reports on the monitoring program for chromium-6 are posted on the City's website which can be accessed at the following address below:

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

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 of 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. In addition, the crib structures may serve to attract waterfowl, gulls and terns that frequent the Great Lakes area, thereby concentrating fecal deposits at the intakes and thus compromising the source water quality. Conversely, the shore intakes may be susceptible to contaminants from 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 City of Chicago, Department of Water Management at 312-744-6635 or by going online at

<http://dataservices.epa.illinois.gov/swap/factsheet.aspx>

2014 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) Naturally present in the environment | 0 | 5% | 0.6% | N/A | - | - |
| FECAL COLIFORM AND E. COLI (# pos/mo) Human and animal fecal waste. | 0 | 0 | 0 | N/A | - | - |
| TURBIDITY (NTU/Lowest Monthly %<0.3 NTU) Soil runoff. | N/A | TT (95%≤0.3NTU) | 100% (Lowest Monthly %) | 100% – 100% | - | - |
| TURBIDITY (NTU/Highest Single Measurement) Soil runoff | N/A | TT(1NTUmax) | 0.11 | N/A | - | - |
| INORGANIC CONTAMINANTS | | | | | | |
| BARIUM (ppm) Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits | 2 | 2 | 0.0227 | 0.0223-0.0227 | - | - |
| COPPER (ppm) Corrosion of household plumbing systems; Erosion of natural deposits; leaching from wood preservatives. | 1.3 | AL = 1.3 | 0.046 (90 th percentile) | 0 sites exceeding AL | - | 6/1/2012-9/30/2012 |
| LEAD (ppb) Corrosion of household plumbing systems; Erosion of natural deposits. | 0 | AL = 15 | 6.6 (90 th percentile) | 1 site exceeding AL | - | 6/1/2012-9/30/2012 |
| NITRATE (AS NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. | 10 | 10 | 0.31 | 0.30-0.31 | - | - |
| TOTAL NITRATE & NITRITE (AS NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits. | 10 | 10 | 0.31 | 0.30-0.31 | - | - |
| DISINFECTANT/DISINFECTION BY-PRODUCTS | | | | | | |
| TTHMs [TOTAL TRIHALOMETHANES] (ppb) By-product of drinking water disinfection. | N/A | 80 | 22* | 9.4-31.1 | - | - |
| HAA5 [HALOACETIC ACIDS] (ppb) By-product of drinking water disinfection. | N/A | 60 | 11* | 2.6-14.6 | - | - |
| CHLORINE (as Cl ₂) (ppm) Water additive used to control microbes. | 4.0 | 4.0 | 1 | 1 - 1 | - | - |
| TOC [TOTAL ORGANIC CARBON] The percentage 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 | 35.5 | 20.9-35.5 | - | - |
| SODIUM (ppm) Erosion of naturally occurring deposits; Used in water softener regeneration. | N/A | N/A | 10.0 | 9.53-10.0 | - | - |
| STATE REGULATED CONTAMINANTS | | | | | | |
| FLUORIDE (ppm) Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories | 4 | 4 | 1.04 | 0.93-1.04 | - | - |
| RADIOACTIVE CONTAMINANTS | | | | | | |
| COMBINED RADIUM (226/228) (pCi/L) Decay of natural and man-made deposits. | 0 | 5 | 0.84 | 0.5-0.84 | - | - |
| GROSS ALPHA excluding radon and uranium (pCi/L) Erosion of natural deposits. | 0 | 15 | 6.6 | 6.1-6.6 | - | - |
| UCMR3 COMPLIANCE REPORTING | | | | | | |
| In compliance with the Unregulated Contaminant Monitoring Rule 3 (UCMR3) as required by the EPA, the City of Chicago has monitored for 28 contaminants suspected to be present in drinking water, but that do not have health-based standards set under the Safe drinking Water Act. The monitoring results were reported to the EPA. The list of UCMR3 contaminants that we have monitored included volatile organic chemicals, metals, perfluorinated compounds, hormones, 1,4-dioxane and chlorate. The contaminants that were detected in this monitoring program are listed below. | | | | | | |
| CHROMIUM (ppb) Naturally-occurring element; used in making steel and other alloys. | 100 | 100 | 0.3 | 0.2-0.3 | - | - |
| MOLYBDENUM (ppb) Naturally-occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide. | NA | NA | 1.1 | 1.0-1.1 | - | - |
| STRONTIUM (ppb) Naturally-occurring element; has been used in cathode-ray tube TVs to block x-ray emissions. | NA | NA | 120 | 110-120 | - | - |
| VANADIUM (ppb) Naturally-occurring metal; vanadium pentoxide is used as a catalyst and a chemical intermediate. | NA | NA | 0.3 | ND-0.3 | - | - |
| CHROMIUM-6 OR HEXAVALENT CHROMIUM (ppb) Naturally-occurring element; used in making steel and alloys. | NA | NA | 0.22 | 0.18-0.22 | - | - |
| 4-ANDROSTENE-3,17-DIONE (ppb) Steroidal hormone naturally produced in the human body; and used as an anabolic steroid and a dietary supplement. | NA | NA | 0.0008 | 0.0006-0.0008 | - | - |
| TESTOSTERONE (ppb) Androgenic steroid naturally produced in the human body; and used in pharmaceuticals. | NA | NA | 0.0001 | 0.0001-0.0001 | - | - |
| Note: TTHM, HAA5, and Chlorine are for the Chicago Distribution System. *Data expressed as LRAA – Locational Running Annual Average (See Definition of terms for Details) **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. | | | | | | |

Note: TTHM, HAA5, and Chlorine are for the Chicago Distribution System.

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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.

Water Quality Data Table Footnotes

TURBIDITY: Turbidity is a measure of the cloudiness of the water caused by suspended particles. 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 been set. The purpose of unregulated contaminant monitoring is to assist USEPA in determining the occurrence of unregulated contaminants in drinking water, and whether future regulation is warranted.

FLUORIDE: Fluoride is added to the water supply to help promote strong teeth. The Illinois Department of Public Health currently 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 who are concerned about sodium intake due to dietary precautions. If you are on a sodium-restricted diet, you should consult a physician about the 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. The Department of Water Management, City of Chicago, 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 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>.

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 of 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 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 this calendar year.

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 that triggers treatment or other required actions by the water supply.

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.

Locational Running Annual Average (LRAA): The average of 4 consecutive quarterly results at each monitored sample location. The LRAA should not exceed 80µg/L for TTHM and 60 µg/L for HAA5.

2014 Violation Summary Table

We are pleased to announce that no monitoring, reporting, treatment technique, maximum residual disinfectant level, or maximum contaminant level violations were recorded during 2014.

Unit of Measurement

ppm: Parts per million, or milligrams per liter (mg/L)

ppb: Parts per billion, or micrograms per liter (µg/L)

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

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. Maybe you've seen us on Facebook. MeterSave customers are saving on average over 50% on their water and sewer bill!

Since its inception in 2009, DWM under the MeterSave Program has installed 60,102 meters, and in 2014 exceeded its goal of 15,000 by 30%!

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 a **FREE** water meter and the 7-year guarantee, MeterSave participants may choose from one of the following **FREE** water conservation tools while supplies last (and two if a whole block volunteers!) rain barrel, outdoor conservation kit, or indoor conservation kit.

THE WATER METER AND INSTALLATION ARE **FREE!**

Signing up is easy

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

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

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, then 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 install 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.

Advantages of having a meter

- Non-Metered water bills are flat rate assessments billed every 6 months based on unlimited usage. Typically, a detail of the assessment is provided on the front of the water bill.
- In contrast, residential metered water bills are based only on actual water usage and billed every 2 months, making it easier for customers to budget. The number of gallons that flows through the meter is multiplied by the water rate. The 2015 water rate is \$3.81 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 100% 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 even more money.

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



EXAMPLE 2-FLAT WATER BILL

BEFORE METERSAVE



AVG. 2014 MONTHLY BILL: \$115.96

(Based on Bi-Annual Assessment)

BASED ON:

23' wide building with 2 floors:
\$157.46 / 6 months
30' hose frontage: \$46.41 / 6 months
Toilet: \$65.57 / 6 months
Sink: \$19.96 / 6 months
Bath Tub: \$65.57 / 6 months
Residential Sewer: \$340.77 / 6 months
Assumes unlimited water use

AFTER METERSAVE



AVG. 2014 MONTHLY BILL: \$66.50

(Based on Billing Every 2 Months)

Savings of 43% on bill by installing meter

BASED ON:

Water: \$3.31 per 1,000 gallons
Sewer: 96% of water charge

CROSS-CONNECTION CONTROL SURVEY

The City of Chicago Department of Water Management is required by the Illinois Environmental Protection Agency (IEPA) to survey all water services connected to our public drinking water supply. This survey will help us prevent accidental contamination of our drinking water system by determining whether a cross-connection may exist at your home or business. A cross-connection is an unprotected or

improper connection to the public drinking water system that may cause contamination or pollution to enter the system.

Please fill out the survey online at www.chicagoccr.org. Your answers are for the Department of Water Management's use only! Please be assured this survey is not an indication of any problems, but is required by the IEPA. Thank you for your cooperation.



Message from
Mayor Rahm Emanuel

Dear Chicago Water Customer,

I am pleased to provide you with the City of Chicago's annual Water Quality Report. This report meets an obligation to relay information about our drinking water, and also gives us an opportunity to explain what it takes to get that water to you.

To continue our city's reputation for high quality, good tasting water it is imperative that we continue to pursue significant renewal of infrastructure. This year, we will be replacing 90 miles of aging leaking water mains, and also replacing 22 miles of sewer mains and lining over 50 miles of existing sewer mains. To keep our system flowing we are lining over 14,000 structures such as catch basins, sewer basins, and manholes.

The Build a New Chicago program is renewing two of our aging water purification plants, and modernizing our network of 12 pumping stations that pressurize the water system, delivering water to Chicago homes

and businesses. To help further conserve water and reduce home owner's water bills, our MeterSave program will be installing 15,000 new meters in single family homes and two-flats.

This report is full of useful information that will help you manage your water consumption, improve your efficiency, and protect your family and your neighbors from flooding and other risks. I hope that you look it over carefully and find value from it.

On behalf of all Chicagoans, I will continue my commitment to revitalizing the city's infrastructure and ensuring that Chicago is a world-class city built on a world-class foundation.

Sincerely,

Rahm Emanuel
Mayor

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



The Department of Water Management
Jardine Water Purification Plant
1000 East Ohio Street
Chicago, Illinois 60611

City of Chicago
Rahm Emanuel, Mayor



PRESORTED
STANDARD
U.S. POSTAGE
PAID
CHICAGO, IL
PERMIT #412