

An aerial photograph of Chicago, Illinois, showing the city skyline with numerous skyscrapers, the Chicago River winding through the city, and a large marina filled with boats in the foreground. The sky is blue with scattered white clouds.

THE CITY OF CHICAGO'S
WATER
2007 QUALITY REPORT

ANTICIPATING CHANGE, VIGILANT TO YOUR NEEDS

RICHARD M. DALEY, MAYOR

THE DEPARTMENT OF WATER MANAGEMENT

JOHN F. SPATZ, JR., COMMISSIONER

CONTACT INFORMATION



Water in the Street or Basement Call 311

Water Quality Questions (312) 744-8190

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.

EPA's Water Resource Center (800) 832-7828

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

EPA's Regional Offices (Illinois) (312) 353-4919

EPA's General Information Line (312) 353-2000
TTY (312) 886-4658

Things You Should Know and Can Do:

- The adult body is comprised of about 70% water.
- The recommended daily amount of water is about 8 cups per day from all food and beverage sources.
- A person in good health can consume three gallons of water per day.
- When too much water is consumed too quickly it can cause water intoxication. This can occur when large quantities of water dilute the sodium level in the blood stream and cause an imbalance of water in the brain.
- More substances are dissolved by water than any other liquid.

**PLEASE VISIT OUR WEBSITE
FOR MORE INFORMATION**

www.cityofchicago.org/watermanagement



The Department of Water Management is actively investigating methods, and installing procedures, that will invigorate our customer performance, and provide a more efficient and seamless service to the public. Among the most notable:

- **CONSERVATION**—Chicago is committed to providing leadership in conservation efforts. We are vigorously replacing our infrastructure to reduce loss due to leaks. We are also working to encourage responsible water use, thoughtful storm water management, and other steps that can preserve our natural resources and enhance our environment.
- **ENDOCRINE DISRUPTING COMPOUNDS (EDC)**—Is an area of research pertaining to the possible presence of very minute quantities of a wide range of substances in our environment including our water. This is an area that the Department of Water Management has monitored with close interest. In the coming months and years we will be testing the water for an even larger number of substances.
- **INTERACTIVE VOICE RESPONSE**—We have activated a system that allows you to use just your voice to check the status of a water bill, and pay by check or credit card. We have implemented systems that allow you to check the status of a Senior Citizen Exemption (from sewer portion of your bill) and to apply for participation in a payment plan. This will cut down significantly on telephone wait times.
- **FULL PAYMENT CERTIFICATES (FPC)**—Our new on-line service allows title companies to obtain an FPC when buyer and seller are closing on a property. The secure web site allows the title companies to arrange for a final meter reading (or have the parties agree on one), and to make certain the seller's account is closed and the buyer's account is opened when the property changes hands. This offers major improvement over the old paper FPCs that always involved significant time and effort by the seller, and potential inconvenience to the buyer.
- **ON-LINE PAYMENT**—Our web site offers the convenience of on-line payment for FREE. By eliminating the fee, we hope to encourage customers to take advantage of this payment method to cut down on the paper in your life.
- **AUTOMATIC METER READING (AMR)**—In 2007 the AMR program began implementation, starting in the far north wards of the city. In this phase of the program all meter accounts were equipped with a transmitter and a new meter if needed. For the new AMR customers this means we will be able to send you an accurate bill based on your actual usage each and every time. No more over- or under-estimating your bill. And, we will not need to enter your building to collect that actual reading. You can feel safer and will not need to make arrangements to be present for the reading.
- **LOW PRICE**—Chicago water customers enjoy the lowest rates of any big city in the country. We charge \$11.44 per 1,000 cubic feet that equals \$1.53 per 1,000 gallons. That means that for the price of a 12 oz. bottle of water from the store, you can get 1,000 gallons from us—piped right into your home. The average bi-monthly water bill for a Chicago single-family residence is \$42.10.

CHICAGO WATER: ALWAYS IN GOOD TASTE

Conserve water and help your plants thrive with a City of Chicago Rain Barrel!

Rain barrels will be distributed at a discount to Chicago residents at 3 Environmental Resource Events hosted throughout the city this summer. For more information about the events you can go to rain-barrel@cityofchicago.org or call (312) 743-WATER (743-9283). Thank you for your interest in conserving water and managing stormwater.

Chicago Center for Green Technology 445 N. Sacramento Blvd.

Hours: Tues 4:00 PM–7:00 PM Thurs 1:00 PM–4:00 PM;
Sat 11:00 AM–3:00 PM

Greenmaker Building Supply 2500 N. Pulaski

Hours: Mon–Wed: 8:00 AM–6:00 PM; Thurs 8:00 AM–8:00 PM;
Fri 8:00 AM–5:00 PM; Sat 9:00 AM–4:00 PM

The rain barrels are made from barrels that previously contained food and are black or terra cotta in color. They hold 50 gallons of rain water, have a mosquito-proof screen on top, two overflow holes and spigot and drain holes. Rain barrels fit in the empty back seats of most cars. Rain barrel brochures explaining installation and maintenance will be distributed at time of purchase.

Questions?

Contact rainbarrel@cityofchicago.org or 312-743-WATER (743-9283).

For more information visit www.cityofchicago.org/Environment, "Learn About Rain Barrels" link.

This is a program of the Chicago Departments of Environment and Water Management

2007 Water Quality Data: Detected Contaminants

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 (MRDL): The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a disinfectant added for water treatment below which there is no known or expected risk to health.

Highest Level Detected: This column represents the highest single sample reading of a contaminant of all the samples collected in 2007.

Range of Detection: 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 CCR 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.

Lead: Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home might be higher than other homes in your community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home, flush your tap for 30 seconds to 2 minutes before using tap water, or you may wish to have your water tested. Additional information is available from the EPA's Safe Drinking Water Hotline at (800) 426-4791.

Contaminant (unit of measure) Typical Source of Contaminant	MCLG	MCL	Highest Level Detected	Range of Detection	Violation	Date of Sample
Microbial Contaminants						
TOTAL COLIFORM BACTERIA (% pos/mo) Naturally present in the environment.	0%	5%	0.54%	n/a	—	—
Fecal Coliform and E. Coli (# pos/mo) Human and animal fecal waste	0	*	2	n/a	—	—
TURBIDITY (%<0.3 NTU) Soil runoff.	n/a	TT/95%	100.00%	n/a	—	—
TURBIDITY (NTU) Soil runoff.	n/a	TT=1NTUmax	0.58	n/a	—	—
Inorganic Contaminants						
ARSENIC (ppm) Erosion of natural deposits; Runoff from glass and electronics production wastes.	0	10	0.56	0.52 - 0.56	—	—
BARIUM (ppm) Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.	2	2	0.018	0.018 - 0.018	—	—
COPPER (ppm) Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.	1.3	AL=1.3	<0.003 (90th percentile)	0 sites exceeding AL	—	06/01/06 to 08/24/06
LEAD (ppb) Corrosion of household plumbing systems; Erosion of natural deposits.	0	AL=15	6.10 (90th percentile)	0 sites exceeding AL	—	06/01/06 to 08/24/06
NITRATE (AS NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	10	10	0.41	0.37 - 0.41	—	—
NITRATE & NITRITE (AS NITROGEN) (ppm) Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.	10	10	0.42	0.37 - 0.42	—	—
Disinfectant/Disinfection By-Products						
TTHMs [TOTAL TRIHALOMETHANES] (ppb) By-product of drinking water disinfection.	n/a	80	16.5**	10.2 - 24.0	—	—
HAA5 [HALOACETIC ACIDS TOTAL OF 5] (ppb) By-product of drinking water disinfection.	n/a	60	8.53**	4.6 - 12.3	—	—
CHLORINE (as Cl ₂) (ppm) Drinking water disinfectant.	4 MRDLG	4MRDL	0.77	0.65 - 0.77	—	—
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.						

Contaminant (unit of measure) Typical Source of Contaminant	MCLG	MCL	Highest Level Detected	Range of Detection	Violation	Date of Sample
Radioactive Contaminants						
BETA/PHOTON EMITTERS (pCi/L) Decay of natural and man-made deposits.	0	50	2.00	nd - 2.00	—	11/05/2001
Stage 2 DBP Rule IDSE Study						
Initial distribution system evaluation standard monitoring plan. Compliance under Stage 2 DBPR effective April 1, 2012.						
TTHM (ppb)	n/a	n/a	14.7	9.3 - 14.7	—	—
HAA5 (ppb) Effective January 2002, HAA5 is a regulated parameter.	n/a	n/a	9.1	6.4 - 9.1	—	—
State Regulated Contaminants						
FLUORIDE (ppm) Water additive which promotes strong teeth.	4	4	0.98	0.90 - 0.98	—	—
SODIUM (ppm) Erosion of naturally occurring deposits; Used as water softener.	n/a	n/a	7.40	7.30 - 7.40	—	—
Unregulated Contaminants						
BORON, Total (ppb) Erosion of naturally occurring deposits; Used in detergents and as a water softener; Used in production of glass, cosmetics, pesticides, fire retardants and for leather tanning.	n/a	n/a	28.0	28.0 - 28.0	—	—
BROMODICHLOROMETHANE [TTHM] (ppb) By-product of drinking water disinfection.	n/a	n/a	7.80	3.60 - 7.80	—	—
BROMOFORM [TTHM] (ppb) By-product of drinking water disinfection.	n/a	n/a	nd	nd	—	—
CHLOROFORM [TTHM] (ppb) Used as a solvent for fats, oils, rubber, resins; A cleansing agent; Found in fire extinguishers.	n/a	n/a	11.9	3.80 - 11.9	—	—
DIBROMOCHLOROMETHANE [TTHM] (ppb) Used as a chemical reagent; An intermediate in organic synthesis.	n/a	n/a	4.30	2.50 - 4.30	—	—
DICHLOROACETIC ACID [HAA] (ppb) By-product of drinking water disinfection.	n/a	n/a	6.50	2.60 - 6.50	—	—
TRICHLOROACETIC ACID [HAA] (ppb) By-product of drinking water disinfection.	n/a	n/a	5.70	2.0 - 5.70	—	—
DIBROMOACETIC ACID [HAA] (ppb) By-product of drinking water disinfection.	n/a	n/a	1.20	nd - 1.20	—	—
MOLYBDENUM (ppm) Erosion of naturally occurring deposits; Used in manufacture of special steels.	n/a	n/a	31.0	0 - 31.0	—	—
SULFATE (ppm) Erosion of naturally occurring deposits.	n/a	n/a	20.6	19.1 - 20.6	—	—
Violation Description	Start	Finish				
There were no monitoring violations during 2007						

* A routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive.

** Highest running annual average computed quarterly.

Unit of Measurement

ppm – Parts per million, or milligrams per liter
 ppb – Parts per billion, or micrograms per liter
 ppt – Parts per trillion, or nanograms per liter
 NTU – Nephelometric Turbidity Unit, used to measure cloudiness in drinking water
 %<0.3 NTU – Percent samples less than 0.5 NTU

% pos/mo – Percent positive samples per month
 pCi/L – picocuries per liter, used to measure radioactivity
 nd – Not detectable at testing limits
 n/a – Not applicable
 < = less than, > = greater than

Water Quality Data Table Footnotes

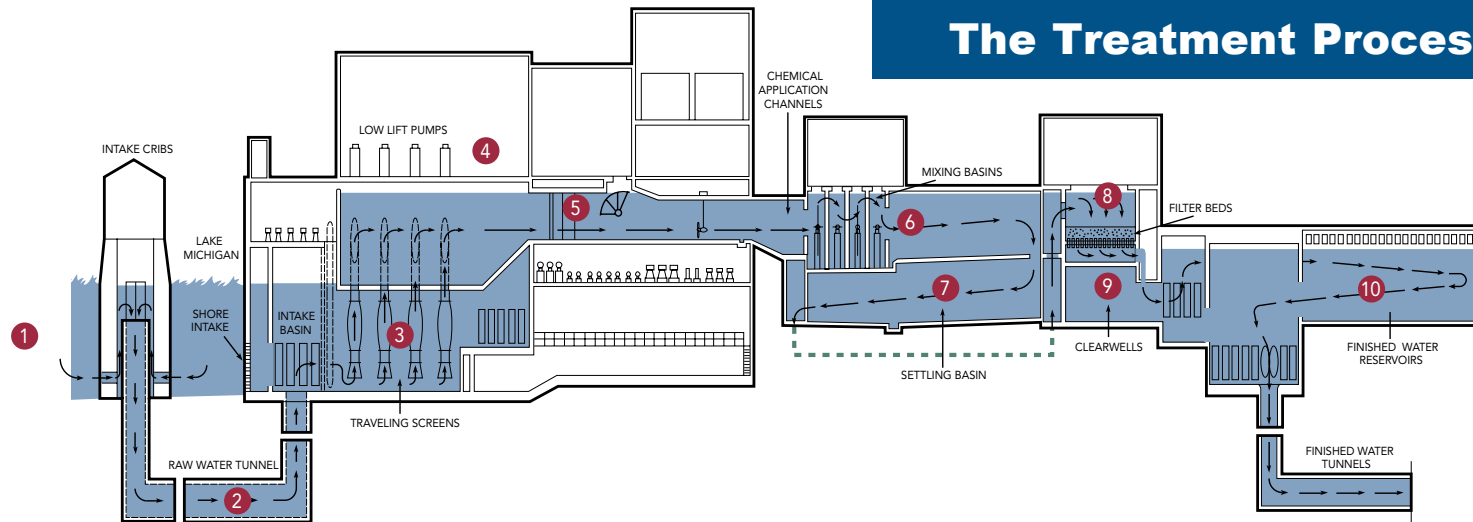
TURBIDITY: Turbidity is a measure of the cloudiness of water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration system and disinfectants.

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 maximum contaminant level (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.

UNREGULATED CONTAMINANTS: A MCL for this contaminant has not been established by either state or federal regulations, nor has mandatory health effects language. 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.

The Treatment Process



1. Water from Lake Michigan enters the intake crib at depths of 20 to 30 feet.
2. Water enters the purification plant's intake basin through a tunnel beneath the lake bed.
3. Water is filtered through eight traveling screens to catch debris.
4. Water is pumped by low lift pumps up 25 feet for the first chemical treatment.
5. Water flows from the chemical application channels.
6. Water flows through mixing basins to begin the flocculation process.
7. Flocculation water passes into settling basins to sit for four hours allowing floc to settle.
8. Water is filtered through precisely graded sand and gravel performing a "natural polishing."
9. Filtered water flows into clearwells for its final chemical application.
10. From finished water reservoirs water flows to the distribution system.

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.

Cryptosporidium: No Cryptosporidium has been detected in our source water since we started monitoring in April 1993.

Finally, in compliance with the new provisions of the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), the Chicago Department of Water Management is currently undertaking monthly source water monitoring for Cryptosporidium, E coli, and turbidity, a process that began in October 2006 and will last for two years, ending in November 2008. The goal of LT2ESWTR is to require water systems, whose source water is susceptible to Cryptosporidium contamination, to improve control of the pathogen. Monitoring performed in 2007 did not detect any Cryptosporidium or Giardia in source water samples collected. Similarly, under Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 DBPR), promulgated on January 2006 to increase public health protection from exposure to disinfection byproducts (DBPs), the City has embarked on a one year long Initial Distribution System Evaluation, starting Nov. 2007, to characterize DBP levels in its drinking water system. DBP test results obtained so far fall well below acceptable compliance targets.

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 determines 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 City of Chicago, Department of Water Management at 312-744-6635.



Message from
Mayor Richard M. Daley



Dear Water Customer:

Residents of Chicago are fortunate to have Lake Michigan at our front door to provide us with a reliable source of clean fresh water. In the annual Consumer Confidence Report, the

Department of Water Management will provide residents with detailed information about the quality of Chicago's tap water how it is purified and delivered to you homes and businesses at the lowest price of any major city in the country.

This report is a detailed and complex effort that reflects the process of purifying and delivering water to premises throughout the Chicagoland area. It is essential that the Department of Water Management remains vigilant at monitoring our raw and finished water for possible contaminants. More than 750,000 tests are performed annually 24 hours a day 7 days a week at Water Management facilities to ensure that the tap water that is delivered to you is the purest safest water we can provide.

Over the past years, the Chicago Department of Water Management has made great strides in reducing the loss of water by replacing the older water mains that have a potential for leaking. In 2007 over 20 miles of water mains were replaced saving millions of gallons of water. I'm reminding all residents to do the everyday things that help conserve water. Turn off the faucet while brushing your teeth, and use a rain barrel where possible to conserve water usage and protect the environment.

By acting responsibly we not only conserve our resources for today, but preserve the quality of our resources for tomorrow.

Sincerely,

Mayor

Para obtener el informe de la calidad del agua 2007 en español, por favor llame a nuestro centro de información al numero (312) 744-4H2O (744-4426).

WATER: The Pure Facts

- There are 7.48 gallons of water in one cubic foot.
- One gallon of water weighs 8.34 pounds.
- Water is comprise of 2 atoms of Hydrogen and one 1 atom of Oxygen bonded together.
- Water is the only substance that is found naturally on earth in three forms: liquid, gas, solid.
- The water is in a constant in cycle of evaporation, transpiration, condensation and precipitation.
- Over 90% of the fresh water on Earth is in Antarctica.
- The total volume of water on the Earth is about 344 cubic miles; this includes ground water, surface water, the polar caps, clouds, and all living things.
- Every day the Sun will evaporate a trillion tons of water.
- The overall amount of water on our planet has remained the same for two billion years.
- To make the most of the water you use on your lawn water early in the morning or in the evening when it is cooler, and avoid watering when it is windy. In this way you will lose less water to evaporation.
- In the home two thirds of the water is used in the bathroom.
- Dripping faucets can waste about 2,000 gallons of water each year. Leaky toilets can waste as much as 200 gallons each day.
- It takes about 120 gallons or 450 liters to produce one egg.
- It takes about 6,800 gallons or 25,700 liters of water to grow one day's food for a family of four.
- To refine one barrel of crude oil requires 1,850 gallons or 7,000 liters of water.
- Over 400 million people live in areas with severe water shortages.
- Drinking water today meets over a hundred different standards for water quality.
- By eliminating all new sources of contamination, it is estimated that in 10 years 98% of groundwater would be pollution free.

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

City of Chicago
Richard M. Daley, Mayor



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