



City of
Evanston™

2005 Water Quality Report



We are pleased to bring you Evanston's annual Water Quality Report, an information service for our water customers. The Evanston Water Utility is committed to providing you with the highest quality of drinking water. In 2005, as in past years, your tap water has met all USEPA and State drinking water health standards and has had no violations to report. Of the hundreds of substances that are monitored, only a few contaminants were actually detected in our drinking water, and all substances detected were far below a level at which there is any known health risk!

Your Water Source

Lake Michigan, Evanston's source of water, is not just a major commerce artery and a recreational resource with miles of scenic shoreline; it's also a great source of drinking water! Almost half of the world's fresh water comes from Lake Michigan and the other Great Lakes. According to the United States EPA, the quality of Lake Michigan water has improved dramatically over the past 20 years. The regulations in place restrict the industrial and sewage treatment plant effluents from entering Lake Michigan thereby lowering the risk of having these contaminants in the water. All 63 miles of shoreline within Illinois are now considered to be in good condition.

Summary of Illinois EPA Source Water Assessment of Lake Michigan as a Drinking Water Source

The EPA report states that there is concern for Lake Michigan water quality and also water quantity. A 1967 U.S. Supreme Court decree limits the amount of Illinois diversions of water from Lake Michigan, and currently Illinois is reaching its limit on that allocation. 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 intakes with no protection, only dilution. This is the reason for mandatory treatment for all surface water supplies in Illinois. Evanston recognized the need for treatment long before these requirements came into effect. In fact, Evanston has operated a water treatment facility for over 100 years!

All three of Evanston's water intakes are located far enough offshore that shoreline impacts are not considered a factor on water quality. However, at certain times of the year the potential for contamination due to the proximity of the North Shore Channel in wet-weather flow conditions exists. The report further notes Evanston's membership in such organizations as the West Shore Water Producer's Association and the coordination regarding water quality issues that takes place between the utilities on the west shore of Lake Michigan.

Capital Improvement Program

In order to ensure that the water we provide to you is safe and reliable, the Evanston Water Utility continually plans improvements to renew and replace our existing infrastructure and improve our services. A number of major improvements have just been completed or are currently in the design/construction phase:

- Expansion of the Administration Building at the Water Plant Facility and Filter Division workshop including the repair of the 1895 suction well.
- Masonry and tuckpointing of the pumping station.
- The replacement of one of the existing low lift (raw water) pumping units to improve both reliability and capacity.
- Continual upgrade of our aging infrastructure is critical to the reliable delivery of our water. New water mains scheduled for installation in 2006 are:
 - Brummel St. – Dodge Ave. to Asbury Ave.
 - Greenwood St. – Asbury Ave. to Ridge Ave.
 - Ridge Ave. – Greenwood St. to Crain St.
 - Crain St. – Asbury Ave. to Ridge Ave.
 - Callan Ave. – Dempster St. to Crain St.
 - Callan Ave. – Kedzie St. to South Blvd.
 - Howard St. – Chicago Ave. east to City Boundary
 - Asbury Ave. – Jenks St. to Isabella
 - Ridge Ave. – Dobson St. to Brummel St.
 - Dobson St. – Ridge Ave. to Custer Ave.
 - Custer Ave. – Dobson St. to Howard St.
 - Judson Ave. – Davis St. to Church St.
 - Hayes St. – Crawford Ave. to Prospect Ave.
 - Payne St. – Crawford Ave. to Prospect Ave.

Today, the Water Department's 42 employees continue Evanston's tradition of excellence by working around the clock for your health and safety. We are proud of our water and pledge to continue to provide you with the highest quality of water possible.

View the City's web site at www.cityofevanston.org for more information on our water treatment process.

Thank you for the opportunity to serve you.



City of Evanston
2005 Water
Quality Report



EVANSTON 2005 WATER QUALITY DATA

Detected Substances

Substance	Goal (MCLG)	Highest Allowed (MCL)	Evanston Result	Evanston Minimum	Evanston Maximum	Source of Contamination
Turbidity (Cloudiness)	NA	TT=Monitored by % Exceeding 0.3 NTU and max allowed is 1 NTU	99.86% of samples meet 0.3 NTU	0.01	0.55	Soil runoff.
Coliform Bacterial	0	5% of monthly samples are positive	1	0	1	Naturally present in the environment.
Nitrate & Nitrite (ppm)*	10	10	0.36	0.36	0.36	Runoff and natural erosion.
Fluoride (ppm)	4	4	.97	.91	1.00	Fluoride is added to promote dental health.
Lead (ppb)	NA	Action Level = 15	<5	<5	5.8	Corrosion of household plumbing.
Copper (ppm)	NA	Action Level = 1.3	0.13	<0.1	0.58	Corrosion of household plumbing.
DISINFECTION BY-PRODUCTS	Goal (MCLG)	Highest Allowed (MCL)	Evanston Result	Evanston Minimum	Evanston Maximum	Source of Contamination
Total Trihalomethanes (ppb)	NA	80	21.5	11.2	31.0	By-product of drinking water chlorination.
Total Haloacetic Acids (ppb)	NA	60	7.6	5.1	10.4	"
Chlorine	4 MRLDG	4 MRLDG	0.52	.49	0.52	Water additive used to control microbes.
Substances of Interest (Unregulated)	Goal (MCLG)	Highest Allowed (MCL)	Evanston Result	Evanston Minimum	Evanston Maximum	Source of Contamination
Sodium (ppm)	NA	NA	6.6	6.6	6.6	Runoff and natural erosion.
pH (0-14 pH units)	NA	NA	7.6	7.3	7.8	General Water Chemistry Parameter.
Hardness (as CaCO ₃)	NA	NA	129	116	154	Calcium or magnesium.
Alkalinity	NA	NA	100	85	113	General Water Chemistry Parameter.

ppm = parts per million or milligrams per liter

ppb = parts per billion or micrograms per liter

NTU = nephelometric turbidity units (measures water clarity)

TT = Treatment Technique, a required process to reduce the level of a contaminant.

Disinfection by-products = Total Trihalomethanes and Total Haloacetic Acids are used to regulate the amount of allowable by-products of chlorination.

MRDL - Maximum Residual Disinfection Level - The highest level of disinfectant allowed in drinking water

MRDLG - Maximum Residual Disinfection Level Goal - The level of disinfectant in drinking water below which there is no known or expected risk to health; MRDLG's allow for a margin of safety.

Fluoride = The Illinois Department of Public Health sets the requirement for the optimal level of fluoride at a range of 0.9 ppm to 1.2 ppm.

Sodium = There is not a state or federal MCL for sodium. Sodium levels below 20 mg/l (ppm) are not considered to be a health issue.

Turbidity = Turbidity is a measurement of the cloudiness of the water caused by suspended particles. We monitor turbidity because it is a good indicator of water quality and the effectiveness of our filtration process.

MCLG = Maximum Contaminant Level Goal, the level of a contaminant in drinking water below which there is no known or expected risk to health.

MCL = Maximum Contaminant Level, the highest level of a contaminant that is allowed in drinking water. A MCL is set as close to a MCLG as feasible based on what a water utility can achieve using the best available technology.

Action Level = The concentration of a contaminant which, if exceeded, triggers treatment or other requirements the water system must follow.

Lead and Copper = There is no detectable lead in the water provided to the Evanston community. Lead enters the water from lead solder, lead pipes or plumbing fixtures in the home. To minimize contamination resulting from corrosion, the EPA established a lead action level of 15 ppb in 1992. The 90th percentile result of samples analyzed for lead and copper content in homes with lead pipes must be less than the action level of 15 ppb and 1.3 ppb, respectively. In 2005, Evanston took water samples from 30 homes with lead service lines and analyzed them for lead and copper content. All results were below the action levels. The 90th percentile level for Lead was less than the detection limit of 5 ppb. The 90th percentile level for copper was 0.13 ppm, illustrated as the Evanston Result in above table.

TOC - The Evanston Water Supply monitored the percentage of Total Organic Carbon (TOC) removal each month and met all TOC removal requirements set by the IEPA.

*Tested every three years. Last tested 2003.

Where do contaminants come from?



In general, people obtain drinking water (both tap and bottled water) from rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of land or through the ground, it dissolves naturally occurring minerals and radioactive material. It can also pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include:

- 1) microbial contaminants from a variety of sources, such as viruses and bacteria which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife;
- 2) inorganic contaminants such as salts and metals which can be naturally occurring or result from urban storm runoff, industrial or domestic water discharges, oil and gas production, mining or farming;
- 3) pesticides and herbicides which come from agricultural, stormwater runoff and residential uses;
- 4) organic chemical contaminants, including synthetic and volatile organics which are by-products of industrial processes and petroleum production and can also come from gas stations, urban storm runoff and septic tanks;
- 5) radioactive contaminants which can be naturally occurring or the result of oil and gas production and mining activities.



The primary sources of pollution threatening Lake Michigan include air deposition (pollution from the air, rain and snow), runoff and industrial discharge.

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. In order to ensure that tap water is safe to drink, the 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.

More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

Some people may be more vulnerable to contaminants in tap or bottled 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 for infections. These people should seek advice about drinking water from their healthcare providers. The EPA and Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium are available from the Safe Drinking Water Hotline, (800) 426-4791 or visit, www.epa.gov/OW.

For specific information about the Water Department, your water's quality, a complete water quality report of all tested contaminants, or any other water-related question, please contact the Evanston Water Department at (847) 866-2942. The public is welcome to attend Council meetings where decisions related to the water treatment facility are made.

About your water

The Evanston Water Treatment Plant has the capacity to pump up to 108 million gallons a day of pure drinking water to Evanston and the other communities we serve: Skokie, and the Northwest Water Commission comprised of Arlington Heights, Buffalo Grove, Palatine and Wheeling. Evanston's vast water system includes 155 miles of water mains, two multimillion gallon storage facilities and almost 1,300 hydrants.

From the raw water pumps that bring water in from Lake Michigan, to the finished water pumps that send the treated water to your home, system redundancies like auxiliary natural gas engines are in place so you'll never go without safe drinking water.

Here's how it's done:



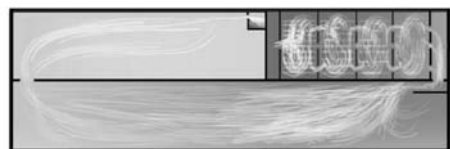
From Lake Michigan...



...to our Pumping Facility...



...“Flash” mixed and disinfected...



...taken through our settling process...



...filtered for purity...



...and brought to your tap!



Water myths and realities



Myth: There are more pollutants in drinking water today than there were 25 years ago.

Reality: Not necessarily. Twenty-five years ago, we did not have the technology to know what was in our drinking water. Today, we have sophisticated testing instruments that enable us to know more about our water than ever before. The drinking water community is continually improving treatment processes as it learns more each year.

Myth: Using a home water treatment device will make tap water safer or healthier to drink.

Reality: Some people use home water filters to improve the taste, smell or appearance of their tap water, but it does not necessarily make the water safer or healthier to drink. Additionally, all home treatment devices require regular maintenance. If the maintenance is not performed properly, water quality problems may result.

Myth: Bottled water is safer than tap water.

Reality: Not necessarily. Studies have shown that microbes may grow in the bottles while on the grocers' shelves. You don't need to buy bottled water for safety reasons if your tap water meets all federal and state drinking water standards (Evanston's does!). If you want water with a different taste, you can buy bottled water, but it costs up to 1,000 times more than tap water. Of course, in emergencies, bottled water can be a vital source of drinking water for people without water.

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Questions and Answers:

- Q. Water often looks cloudy when first taken from a faucet and then it clears up. Why is that?**
- A.** The cloudy water is caused by tiny air bubbles in the water similar to the gas bubbles in beer and carbonated soft drinks. After a while, the bubbles rise to the top and are gone.

- Q. What is “hard” water?**
- A.** The answer may surprise you. Hardness in drinking water is caused by two nontoxic chemicals usually called minerals: calcium and magnesium. If either of these minerals is present in your water in substantial amounts, the water is said to be “hard,” because making a lather or suds for washing is “hard” (difficult) to do. Thus cleaning with hard water is difficult. Water containing little calcium or magnesium is called “soft” water. (Maybe it should be called easy!). Evanston’s water is considered to be moderately hard. It ranges from 116 parts per million of hardness to 154 and averages 129 parts per million or approximately 7.5 grains. This level of hardness does not require the use of a water softener.

- Q. Is it okay to use hot water from the tap for cooking?**
- A.** No. Use cold water. Hot water is more likely to contain rust, copper and lead from your household plumbing and water heater because these contaminants generally dissolve into hot water from the plumbing faster than into cold water.



WORD SEARCH

r a n m t u r b i d i t y
 a c c i n a g r o o l i a
 e k a l a b o r a t o r y
 w u i t n y f a u c e t i
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 b n u r t c a o m b p t g

water
 organic
 chlorine
 contaminant
 bubbles

lake
 filtration
 microbial
 calcium
 turbidity

faucet
 pollution
 laboratory
 drink
 stormwater



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Non-point source storm water pollutants

Non-point source (NPS) pollution occurs when rain or melting snow carry pollutants such as oil, fertilizers, salt or animal waste into the sewer system. These pollutants are called non-point source because it is not always possible to identify their origins. While we sometimes want to point the finger of blame at industry, the fact is that we all contribute to non-point source pollution when we dispose of household hazardous wastes through the sewer system, over fertilize our lawns and gardens, leave pet waste unattended, or allow our cars to leak automotive fluids onto Evanston streets and parking lots.

Where do pollutants go?

Evanston has a combined sewer system. This means that the contents of the sewers in the streets are mixed with the contents of household sewers. All of these wastes are sent to the water treatment plant operated by the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC). There, these wastes are treated to lower pollution levels and returned to the river system.

Treated wastewater from Evanston eventually flows into the Illinois River and then into the Mississippi River and the Gulf of Mexico. So, what happens in Evanston and other Chicago-area communities affects both the quality of river water and the quality of life for other residents of Illinois.

During severe rainfalls when the water system backflows, untreated sewage and pollutants are discharged directly into Lake Michigan, Evanston's source of drinking water. While these backflows are rare, they do occasionally occur.



How can we reduce NPS pollution?

Reducing non-point source pollution can be easily done by changing your housekeeping practices.

10 Tips To Reduce Pollution Non-point Source Pollutants

1. Properly dispose of household hazardous wastes such as motor oil, antifreeze, gasoline, drain cleaner, mildew remover, mothballs, lead-acid batteries, chemicals, paint and thinners. City of Evanston refuse collection crews will not collect hazardous waste products. Residents should call the Solid Waste Agency of Northern Cook County (SWANCC) at (847) 296-9205 to find out the locations, times and dates of the nearest household hazardous waste disposal programs.

2. Dispose of used motor oil from cars and lawn equipment at local service stations or quick oil change businesses. Call the business before transporting the oil for disposal.



3. Apply the right amount of fertilizer to your lawn. Soil testing kits that measure nutrients and pH levels are available through your local nursery. Avoid applying fertilizers before a heavy rainstorm that will cause nutrients to wash away before they are absorbed into the soil.



4. Keep your mowing height at three inches. Taller grass holds more water, requires less irrigation, and helps to shade out weeds. Prevent grass clippings from entering the sewer by leaving them on the lawn. Grass clippings are a natural fertilizer.

5. Clean up pet wastes to prevent nutrients and bacteria from entering the sewer system.

6. Wash your car with a phosphate-free detergent. Better yet, take your car to a local car wash where the water is recycled.

7. Check for drips under your car or truck and repair leaks immediately to keep oils off of pavement. During summer months when gas can expand, take care not to overfill gas tanks, or fuel might splash out on streets or driveways.

8. Direct roof downspouts away from driveways and foundations and towards your lawn or garden. Use a splash block directly below your downspout to help prevent soil erosion.

9. Plant native trees, grasses and flowers in your yard. These plants require less water, and their root systems hold the soil in place.

10. Clean up litter from your home, business, school, neighborhood or park. When it rains, water flows over everything on the ground and washes it all into Evanston's combined sewer system.

