

# City of Evanston 2009 Water Quality Report: A Report from Your Water Utility

We are pleased to present 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 2009, 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 handful 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 is 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 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 Report of Lake Michigan as a Drinking Water Source

The EPA report states that

there is concern for Lake Michigan water quantity and also water quality (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. To view a summary version of the completed Source Water Assessments, including: Importance of Source Water; Susceptibility to Contamination Determination; and documentation/recommendation of Source Water Protection Efforts, go to the Illinois EPA website at: [www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl](http://www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl).

All of Evanston's water intakes, which bring the lake water into the treatment plant, 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 during wet-weather flow conditions exists due to the proximity of the North



Shore Channel. In addition, the proximity to a major shipping lane adds to the susceptibility of these three intakes. Lake Michigan, as well as all the Great Lakes, has many different organizations and associations that are currently working to either maintain or improve water quality. The report further commends Evanston's involvement in such organizations such as the West Shore Water Producer's Association, which leads to critical coordination regarding water quality issues that takes place between the utilities on the west shore of Lake Michigan.

Today, the Water Department's 43 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 water that is humanly and technologically possible.

For more information, on our water treatment process, view the City's website at: [www.cityofevanston.org/water](http://www.cityofevanston.org/water) on our water treatment process.

Thank you for the opportunity to serve you.

City of Evanston  
Water Department



City of Evanston



**WaterSense** is a new program developed by the EPA. Launched in 2006, WaterSense is an EPA-sponsored partnership program that seeks to protect the future of our nation's water supply by promoting water efficiency and enhancing the market for water-efficient products, programs and practices. The City of Evanston is an official partner of the WaterSense program.

## Unregulated Contaminant Monitoring Rule

The City of Evanston was selected and participated in the Unregulated Contaminant Monitoring Rule 2 (UCMR2). Testing started in August of 2008 and occurred quarterly until August of 2009. The water was analyzed for a total of 25 different compounds including herbicides, insecticides and flame retardants. None of these compounds were detected in Evanston's drinking water. Contact the Water Department at 847/448-8221 for more information on the UCMR2 or for the complete list of compounds.

SAFE WATER DRINKING  
WATCH WEB SITE:  
[www.epa.state.il.us/water/drinking-water-watch/](http://www.epa.state.il.us/water/drinking-water-watch/)

### Additional Information About Your Water

Measured Parameter	Evanston Average	Evanston Minimum	Evanston Maximum
pH (0-14 pH units)	7.6	7.1	7.8
Hardness (as mg CaCO3/L)	130	120	144
Alkalinity (ppm)	97	80	106
Raw Water Temperature	50.9 °F	32.5 °F	69.8 °F
	10.5 °C	0.3 °C	21.0 °C

### Lead & Copper Contamination

To minimize contamination resulting from corrosion, the EPA established a lead action level of 15 parts per billion (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 ppm respectively.

In 2008, Evanston sampled water from thirty 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 detection limit of 5 ppb. The 90th percentile level for copper was 0.36 ppm as illustrated in the Evanston Result in the Water Quality Data table. The Evanston Water Utility is proud to have been in compliance with this rule since November of 1992.

Remember, 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. 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 Evanston Water Utility 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 at 800-426-4791 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

### 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, storm water 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; and 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 con-

taminants 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 Safe Drinking Water Hotline at 1-800-426-4791. 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.

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 also be particularly at risk for infections.

These people should seek advice about drinking water from their healthcare providers. The USEPA/ CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline, 800-426-4791 or visit, [www.epa.gov/OW](http://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.

# Evanston 2009 Water Quality Data

\*Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Radiation is everywhere; from the sun, from the earth and even in our bodies. Living in the Chicago area exposes us to cosmic radiation at approximately 29 mrem/yr. (from [www.iem-inc.com/primate.html](http://www.iem-inc.com/primate.html) and [www.themedia.com/Radiation-Calculator/](http://www.themedia.com/Radiation-Calculator/)) The amounts detected in Evanston's water are well below the maximum contaminant level; so low in fact, that Evanston is on a reduced monitoring schedule and is only required to sample every 6 years.

^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 Consumer Confidence Report (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.

Substance	Year <sup>A</sup> Collected	MCLG	Highest Allowed (MCL)	Evanston Result	Evanston Minimum	Evanston Maximum	Violation	Source of Contamination
Turbidity (Cloudiness)	2009	NA	TT=Monitored by % Exceeding 0.3 NTU and max allowed is 1 NTU	100% of samples meet 0.3 NTU	0.05	0.14	NO	Soil runoff
Fluoride (ppm)	2009	4	4	0.98	0.90	1.12	NO	Fluoride is added to promote dental health
Sodium (ppm)	2009	NA	NA	7	7	7	NO	Runoff and natural erosion
Lead (ppb)	2008	0	Action Level = 15	<5	<5	9.4	NO	Corrosion of household plumbing
Copper (ppm)	2008	1.3	Action Level = 1.3	0.1	<0.1	0.36	NO	Corrosion of household plumbing
Total Coliform Bacteria	2009	0	5% of Monthly Samples are Positive	1.2	NA	2	NO	Naturally present in the environment
Combined Radium 226/228 (pCi/L) <sup>*</sup>	2008	0	5	0.82	0.82	0.82	NO	Erosion of natural deposits
Gross Alpha excluding Radium and Uranium (pCi/L) <sup>*</sup>	2008	0	15	3.9	3.9	3.9	NO	Erosion of natural deposits
Beta/Photon Emitters (mrem/yr) <sup>*</sup>	2008	0	50	7.3	7.3	7.3	NO	Decay of natural and man-made deposits
<b>DISINFECTION BY-PRODUCTS</b>								
Total Trihalomethanes (ppb)	2009	NA	80	27	11.9	32	NO	By-product of drinking water chlorination
Total Haloacetic Acids (ppb)	2009	NA	60	10	5.5	11.5	NO	By-product of drinking water chlorination
Chlorine	2009	4 MRLDG	4 MRDL	0.53	0.02	0.53	NO	Water additive used to control microbes
<b>UNREGULATED CONTAMINANTS</b>								
Cotinine (ppb)	2009	NOT REGULATED	NOT REGULATED	0.001	Single Sample	Single Sample	NO	nicotine metabolite/waste water discharge
Perfluorooctane sulfonate (PFOS) (ppb)	2009	NOT REGULATED	NOT REGULATED	0.0021	Single Sample	Single Sample	NO	fabric protector/stain repellent, fire fighting foam/waste water discharge

**Definitions:**  
**Action Level** - The concentration of a contaminant which, if exceeded, triggers treatment or other required actions by the water supply.  
**Disinfection by-products** - Total Trihalomethanes and Total Haloacetic Acids are used to regulate the amount of allowable by-products of chlorination.  
**Fluoride** - The Illinois Department of Public Health recommends an optimal fluoride range of 0.9 parts per billion (ppm) to 1.2 ppm  
**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 ppm respectively. In 2008, Evanston sampled water from thirty 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 detection limit of 5 ppb. The 90th percentile level for copper was 0.36 ppm as illustrated as the Evanston Result in above table.  
**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 using the best available treatment technology.  
**MCLG** - Maximum Contaminant Level Goal, 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.  
**mg CaCO<sub>3</sub>/L** - milligrams of calcium carbonate per liter.  
**mrem/yr** - Millirems Per Year - Measure of radiation absorbed by the body.

**MRDL** - Maximum Residual Disinfection Level. The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.  
**MRDLG** - Maximum Residual Disinfection Level Goal. The level of disinfectant in drinking water 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.  
**NA** - Not applicable.

**NTU** - Nephelometric turbidity units, measures water clarity.  
**pCi/L** - picocuries per liter. Measure of radioactivity.  
**ppm** - parts per million or milligrams per liter (mg/L).  
**ppb** - parts per billion or micrograms per liter (µg/L).  
**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.

**TT** - Treatment technique, a required process to reduce the level of a contaminant.  
**Turbidity** - a measurement of the cloudiness of the water caused by suspended particles. This is monitored because it is a good indicator of water quality as well as well as verifying the effectiveness of the filtration and disinfection processes.  
**TOC** - The Evanston Water Supply monitored the percentage of Total Organic Carbon (TOC) removal quarterly and met all TOC removal requirements set by the IEPA.

## **Your Water: From the Lake to Your Tap**



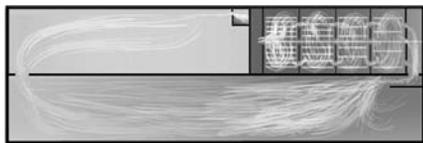
From Lake Michigan...



to our Pumping Facility...



"Flash" mixed and disinfected...



taken through our settling process...



filtered for purity...



and brought to your tap!

## **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 which is comprised of Arlington Heights, Buffalo Grove, Palatine and Wheeling). Evanston's vast water system includes 157 miles of water mains, two multi-million gallon storage facilities and more than 1,300 fire 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 will never go without safe drinking water.

## **Pharmaceuticals and Personal Care Products in Your Water**

In July of 2009 the Evanston Water Utility analyzed its finished water for the presence of Pharmaceutical and Personal Care Products (PPCP) and in November of 2009 for the presence of perfluorosurfactants and endocrine disrupting compounds (EDC).

Underwriters Laboratories (UL), certified by the United States Environmental Protection Agency (USEPA), analyzed the water for the presence of 64 different compounds. The results of these tests are reported in concentrations of parts-per-billion (ppb). As a reference, a ppb is equal to one pinch of salt in 10 tons of potato chips or one cent in ten million dollars.

One PPCP compound, Cotinine, was found in the Evanston's finished tap water and detected at a trace level of 0.001 ppb. Cotinine is a metabolite or by-product of nicotine as it is processed by the human body. Currently, neither the USEPA nor the Illinois Environmental Protection Agency (IEPA) regulates the levels of PPCP in drinking water.

There was one compound found as a result of the perfluorosurfactants and endocrine disrupting compound analysis which was Perfluorooctane sulfonate (PFOS) at a trace level of 0.0021 ppb. PFOS was a common ingredient in the production of fabric protectors/stain repellents and also fire fighting foam. This compound is no longer manufactured in the United States. There is not a USEPA guideline for this product, however there is a provisional health advisory (PHA) and this level is 0.2 ppb. As you can see, the amount detected in Evanston's finished water

is almost one hundred times less than this PHA. Of note, Bisphenol A, a plastics by-product, which has been the topic of many discussions in the media of late, was not found in Evanston's water.

The most important thing to remember is there are ways to prevent these compounds from entering Lake Michigan. First and foremost is the proper disposal of unused and expired drugs. The City of Evanston's Department of Health in cooperation with the Solid Waste Agency of Northern Cook County (SWANCC) gives residents the opportunity to dispose of their expired and unused medications in an appropriate manner. Evanston residents can also bring their items in to the cashier at the Department of Health, 847/866-2948, between 9 a.m. and 4 p.m., Monday through Friday. Please see either [www.cityofevanston.org/medicationdisposal](http://www.cityofevanston.org/medicationdisposal) or [www.swancc.org](http://www.swancc.org) for more information. If you do not have access to a computer, please contact us at 847/866-2942 and SWANCC at 847/724-9205 and the information will be sent to you via the U.S. Mail.

The Evanston Water Utility is committed to providing water which meets or exceeds all governmental regulations for public water supplies. We are proud to voluntarily test for unregulated compounds in preparation for the future and maintaining the quality of water that residents have come to enjoy! Please contact the Water Treatment Facility at 847/866-2942 if you have any additional questions or concerns.