



Village of Lake Zurich

2007

Water Quality Report

Water Quality Report - 2007; Data Report Year - 2006

This year, as in years past, the Village tap water was tested according to USEPA and state drinking water health standards. The water met all the Safe Drinking Water standards except for the combined radium standard. Included in this report you will find information about the combined radium standard and the work we are doing to meet that standard. We have also included details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies.



WATER SYSTEM INFORMATION

The Village's Utilities Division is located at the Public Works facility at 505 Telsler Road. If you have any questions about this report or concerning your water system, please contact Bob Duprey, Assistant Public Works Director, or Steve Schmitt, Superintendent of Utilities, at 847-540-1696. Also, information about the Village's water system may at times be discussed at the Village Board and/or Committee meetings. These meetings are held on the first and third Monday and the second and fourth Monday, respectively, each month. These meetings are broadcast on channel 4, the local cable access channel. Typically, all meetings commence at 7:00 PM in the boardroom at the Village Hall, and the agenda of the meeting is posted on the Friday prior.

WELL INFORMATION

The Village uses groundwater provided by six wells drilled into the Cambrian - Ordovician Aquifer. We draw from the St. Peter, Galesville Sandstone portions of this aquifer. Our six wells are drilled to the following depths:

Well 7	1,333 feet
Well 8	1,373 feet
Well 9	1,365 feet
Well 10	1,340 feet
Well 11	1,358 feet
Well 12	1,335 feet

Wells 7, 8 and 10 have ion exchange treatment plants already operational to reduce the combined radium levels to below EPA standard. Ion exchange treatment plants are in design or underway at wells 9 and 12 and are expected to be operational by spring of 2008. The design and construction of ion exchange treatment at well 11 is scheduled to begin in 2008.



ION Exchange vessels and face piping at Well 8.

SOURCE WATER ASSESSMENT AVAILABILITY

The Village of Lake Zurich, (Facility Number 0970850) utilizes six active community water supply wells.¹ These are wells #7 (Illinois EPA #20259), #8 (Illinois EPA #20260), #9 (Illinois EPA #00691), #10 (Illinois EPA #00636), #11 (Illinois EPA #008600), and 12 (Illinois EPA #01073). The six wells distribute 2,305,000 gallons per day to approximately 6,417 service connections and an estimated population of 18,992 persons. Based on information obtained in a Well Site Survey, published in November 1993 by the Illinois EPA, thirty eight potential sources or possible problem sites were identified within the survey area of Lake Zurich wells. Information provided by the Leaking Underground Storage Tank and Remedial Project Management Sections of the Illinois EPA indicated several additional sites with ongoing remediation which may be of concern. Based on information provided by Lake Zurich's water supply officials, the following facilities, also indicated as potential sources in the site data table, have changed their status: Kmart (tanks removed) and Lake Zurich Sewage Treatment Plant (no longer in service).

The Illinois EPA has determined that the Lake Zurich Community Water Supply's source water is not susceptible to contamination. This determination is based on a number of criteria including: monitoring conducted at the wells; monitoring conducted at the entry point to the distribution system; and the available hydrogeologic data on the wells. The Illinois Environmental Protection Act provides minimum protection zones of 200 feet for Lake Zurich's wells. These minimum protection zones are regulated by the Illinois EPA.

To further minimize the risk to the facility's groundwater supply, the Illinois EPA recommends that three additional activities be assessed. First, the community may wish to enact a "maximum setback zone" ordinance to further protect their water supply. These ordinances are authorized by the Illinois Environmental Protection Act and allow county and municipal officials the opportunity to provide additional protection up to a fixed distance, normally 1,000 feet, from their wells. Second, the water supply staff may wish to revisit their contingency planning documents. Contingency planning documents are a primary means to ensure that, through emergency preparedness, a community will minimize their risk of being without safe and adequate water. Finally, the water supply staff is encouraged to review their cross connection control program to ensure that it remains current and viable. Cross connections to either the water treatment plant, (for example, at bulk water loading stations) or in the distribution system may negate all source water protection initiatives provided by the community. The Village has implemented all three of these activities.

Further information on our community water supply's source water assessment is available on the USGS web site at <http://www.epa.state.il.us> or by calling the Groundwater Section of the Illinois EPA at (217) 785-4787.

FOR YOUR INFORMATION

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 come into contact with 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 waste water discharges, oil and gas production, mining or farming;
 - [Pesticides and herbicides](#), 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.
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FOR YOUR INFORMATION *(continued)*

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. Should an individual elect to drink bottled water only, please be cautioned that most bottled water does not contain fluoride and other minerals needed for the body. Check with your dentist and/or physician about daily supplements to provide these vital elements found in common tap water.

TABLES

The “Water Quality Data” table included here identifies the highest level of each *detected* contaminant and the range of levels for the contaminant found during the WQR reporting year. For each detected contaminant the table lists the Maximum Contaminant Level (MCL), Maximum Contaminant Level Goal (MCLG), level found, range of detections, any MCL violations, and the known or likely source of the contaminant in drinking water.

ABOUT THE DATA

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.

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.

Iron

This contaminant is not currently regulated by USEPA. However, the state has set an MCL for this contaminant for supplies serving a population of 1000 or more.

Sodium

There is no 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 this level of sodium in the water.



Village of Lake Zurich Utilities Superintendent Steve Schmitt records fluoride analysis results.

DEFINITIONS

USEPA: United States Environmental Protection Agency.

IEPA: Illinois Environmental Protection Agency.

WQR: Water Quality Report.

CDC: Center for Disease Control.

FDA: Food and Drug Administration.

CCR: Consumer Confidence Report.

AVG: Regulatory compliance with some MCLs are based on running annual average of monthly samples.

2006 VIOLATION SUMMARY TABLE

Rule or Contaminant	Violation Type	Violation Duration
RADIUM, COMBINED (226, 228) Some people who drink water containing Radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.	MCL, average, without no. exceedence	1/1/2006 to 3/31/2006
RADIUM, COMBINED (226, 228) Some people who drink water containing Radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.	MCL, average, without no. exceedence	4/1/2006 to 6/30/2006
RADIUM, COMBINED (226, 228) Some people who drink water containing Radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.	MCL, average, without no. exceedence	7/1/2006 to 9/30/2006
RADIUM, COMBINED (226, 228) Some people who drink water containing Radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.	MCL, average, without no. exceedence	10/1/2006 to 12/31/2006

Lake Zurich has taken the following actions specific to the violations listed above:

In our quarterly water sampling and testing, it has been found that areas of our water system contain higher levels of Radium 226 & 228 than that which is allowed by the USEPA. The current limit, set by the USEPA is 5 picocuries per liter.³ Some levels of radium are found in all rock formations. As water passes through the rock formations, radium, along with other minerals, dissolve into the water. Higher levels of radium are often found in deep sandstone formations (commonly found in northern Illinois) similar to those which our wells are drilled into.

Since 1989, the Village's water has exceeded the current Combined Radium Standard of 5 picocuries per liter. For 2006, the Combined Radium Range was 3-11 picocuries per liter.² Currently, the Village has a Compliance Commitment Agreement with the Illinois EPA. This agreement identifies activities needed to achieve compliance and establishes a firm schedule.

The Village has three Ion Exchange Treatment Plants in service to reduce radium levels to meet the USEPA standard: Well 7, Well 8 and Well 10. In December 2006, the Village was issued a construction permit for an Ion Exchange Treatment Plant for Well 12. We will begin construction of the plant in May, 2007; the plant is expected to be in service February, 2008.

Final plans and specifications have been submitted to the Illinois EPA for Well 9 Ion Exchange Treatment Plant. Upon review and approval of plans and specifications by the Illinois E.P.A., we anticipate the Agency issuing a construction permit for Well 9 Ion exchange treatment plant shortly. The Village will start construction this summer, and the plant should be in service in spring, 2008.



The 750,000 gallon elevated storage tank at Paulus Park.

VULNERABILITY WAIVER

Due to the favorable monitoring history, aquifer characteristics, and inventory of potential sources of contamination, our water supply was issued a vulnerability waiver on January 1, 1993. This waiver was renewed on January 1, 2002. **This waiver is an indicator of the Village's excellent water quality.** The Illinois Environmental Protection Agency renewed the vulnerability waiver by Special Exception Permit (SEP) for LAKE ZURICH for the period January 1, 2005 to December 31, 2007.

END NOTES

¹ Groundwater Quality Protection Program – Lake Zurich Facility Number 0970850
Well site survey report IEPA/PWS/93-078. Prepared by: Division of Public Water Supplies
Published by: Illinois EPA, Springfield, IL - November 1993

² From 1989 to 1999 there was discussion that the radium standard would be raised to 20 pCi/l for Radium 226 and 20 pCi/l for Radium 228. This increase in the standard is based on information from the medical and scientific community.

³ Combined Radium (Radium 226 & Radium 228) – Some levels of radium are found in all rock formations. As water passes through the rock formations, radium, along with other minerals, dissolve into the water. Some people who drink water that contains Radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer. This incidence of risk would be comparable to a person consuming 2 liters of Lake Zurich water per day for 70 years; the risk of bone cancer would increase 1 in 10,000.



Village of Lake Zurich Utilities Operations Supervisor Dave Pearson records water flow rates at Well #10.



Utilities Operations Supervisor Dave Pearson is shown above checking the operational set points on programmable logic controls at Well #10.

Summer Watering Restrictions Effective June 1

From June 1 through September 15, watering is permitted between the hours of 5:00-10:00 AM and 5:00-10:00 PM every day for all addresses.

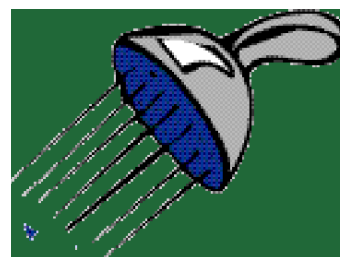
These limitations on the times that outdoor water may be used are designated to allow sufficient time for the water storage tanks to recharge during both morning and evening hours. These hours are the most opportune to perform outside watering as there is less water loss due to evaporation.

The following outdoor water uses are permitted at all times:

- Water used from a bucket or sprinkling can
- Car washing using a hose with a nozzle
- Filling of kiddie pools for water for use in kiddie slides or other children's water toys or activities when being actively used.



Water Conservation Measures



There are eleven million people in Illinois, each using an average of 160 gallons of water per day. If each of us takes some small steps to use less water, it can make a big difference in conserving this precious natural resource.

- Use as little water as possible when washing your car; use a bucket instead of letting the hose run. Water lawns and gardens early in the morning to minimize water loss from evaporation.
- Turn off water in sinks, showers, and baths when not using them. Repair all leaks immediately. Install a low-flush or air-assisted toilet. Buy water-efficient appliances.
- Install shower restrictors to reduce the amount of water used. Report accidental spills or illegally dumped waste to the Illinois Environmental Protection Agency.

**Call the Department of Public Works at
(847) 540-1696
for further information.**



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