

## Village of Lake Bluff 2014 Annual Report Drinking Water Quality

Village of Lake Bluff Annual Drinking Water Quality Report for the period of January 1 through December 31, 2013. Each year the Village of Lake Bluff ("Village") issues this report to provide you information about the quality of its drinking water, the source of the water, how it is treated, and the regulated compounds it contains. These reports are issued in compliance with the Safe Drinking Water Act. For more detailed information about the Village's water quality, including test results for unregulated compounds, contact Melissa Olenick at the Central Lake County Joint Action Water Agency ("CLCJAWA") at 847-295-7788, or George Russell, Village Engineer, at 847-283-6884. Residents are also welcome to visit [clcjawa.com](http://clcjawa.com) or [lakebluff.org](http://lakebluff.org). Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo ó hable con alguien que lo entienda bien.

**Where does Lake Bluff's water come from?** The Village purchases water from CLCJAWA. CLCJAWA is an intergovernmental cooperative, formed by the communities it serves, including: Grayslake, Gurnee, Lake Bluff, Libertyville, Mundelein, Round Lake, Round Lake Beach, Round Lake Heights, Round Lake Park, and Lake County representing the unincorporated areas of Knollwood, Rondout, Wildwood and Vernon Hills.

**How is Lake Bluff's water treated?** The Village's water is pumped from Lake Michigan and treated at CLCJAWA's Paul M. Neal Water Treatment Facility located in Lake Bluff. The enhanced water purification process used by CLCJAWA is unique. First, the water is treated with ozone to kill organisms and break down contaminants. Ozone is produced on-site from air, bubbled into the water, and then converted back into oxygen. The water is then mixed with coagulant to remove sediment and other material from the water. Once clarified, the water is further refined as it passes through filters containing activated carbon and fine sand. Next, the water is treated with ultraviolet light to inactivate any remaining organisms. Finally, the purified water is treated with chlorine to protect it as it travels through the water main, fluoride for dental health, and a small amount of an often used food additive called phosphate. Phosphate protects the water from the metals found in our homes' plumbing systems. CLCJAWA is a ten-time Excellence in Water Treatment award winning facility. CLCJAWA was the third facility in the nation to achieve this distinction presented by the Partnership for Safe Water. This voluntary water quality program, sponsored in part by the United States Environmental Protection Agency, holds its awardees to higher standards than required by current drinking water regulations.

**How is the water delivered to the tap?** All water purchased from CLCJAWA enters the Village's water distribution system at the Village's one-million gallon elevated water tank located along Illinois Route 176. From the tank water is delivered throughout the Village via a network of 39 miles of cast iron and ductile iron watermains. The Village has an ongoing program to remove and replace older watermains to further assure the continued, uninterrupted conveyance of quality drinking water to your tap. Each property owner has their own water service line that extends from each building to the public watermain, which is typically located within the public right-of-way. If there should be a problem with the Village's supply of water, the Village does have emergency interconnections with the City of Lake Forest's water system. Both the Village and the City of Lake Forest have the ability to transfer water across systems should an occasion occur where one community's primary source of supply is unable to provide water.

**How is water quality assured?** The Village's tap water quality is consistently monitored by the Village, by the Illinois Environmental Protection Agency ("IEPA"), in the CLCJAWA Water Quality Lab, and by other independent labs. This aggressive water quality assurance program is thorough: bacteriological tests are conducted six times more often than required, water clarity is monitored every 10 seconds, and the water is checked for hundreds of contaminants.

**How is Lake Bluff's drinking water regulated?** To ensure tap water safety, the U.S. Environmental Protection Agency ("USEPA") prescribes limits on the amount of certain contaminants in the Village's drinking water. Water quality may be judged by comparing Lake Bluff's water to USEPA benchmarks for water quality. One such benchmark is the Maximum Contaminant Level Goal ("MCLG"). The MCLG is the level of a contaminant in drinking water below which there is no known or expected risk to health. This goal allows for a margin of safety. Another benchmark is the Maximum Contaminant Level ("MCL"). An MCL is the highest level of a contaminant that is allowed in drinking water. An MCL is set as close to an MCLG as feasible using the best available treatment technology.

What regulated compounds are found in Lake Bluff's drinking water? The table below lists all of the regulated compounds detected in our water. Bolded compounds were measured by the Village; all other compounds were measured by CLCJAWA. The values shown in the Level Detected column are those used by the EPA to determine compliance with drinking water standards. Because each compound is regulated differently, this value may be a running average, a 90<sup>th</sup> percentile, or the maximum single value. The Sample Date column indicates the date when the sample was collected. When more than one sample is collected, this column shows the date of the maximum value. Explanation of MCLG and MCL may be found in the Abbreviation Table that follows.

<b>2013 Water Quality Contaminants Detected</b>						
<b>Contaminant (unit of measure) Typical Source of Contaminant</b>	<b>Highest Level Detected</b>	<b>MCLG</b>	<b>MCL</b>	<b>Range of Detection</b>	<b>Violation</b>	<b>Date of Sample</b>
<b>MICROBIAL CONTAMINANTS</b>						
<b>TOTAL COLIFORM BACTERIA (% Pos/Month)</b> Naturally present; human and animal fecal waste	<b>0</b>	<b>0</b>	<b>5% per month</b>	<b>None</b>	-	<b>Monthly</b>
<b>E. COLI (% Pos/Month)</b> Naturally present; human and animal fecal waste	<b>0</b>	<b>0</b>	<b>0% per month</b>	<b>None</b>	-	<b>Monthly</b>
TURBIDITY (NTU/Lowest Monthly % < 0.3 NTU) Lake Sediment; soil runoff	100% below 0.3 NTU	None	0.3 NTU	100%	-	Monthly
TURBIDITY (NTU/Highest Single Measurement) Lake Sediment; soil runoff	0.09	None	1 NTU	0.02 – 0.09	-	3/2013 Monthly
<b>INORGANIC CONTAMINANTS</b>						
BARIUM (ppm) Discharge of drilling wastes and metal refineries; natural erosion	0.025	2	2	Single Sample	-	7/11/13
<b>COPPER (ppm)</b> Corrosion of household plumbing systems; natural erosion	<b>0.133</b> (90 <sup>th</sup> Percentile)	<b>1.3</b>	<b>AL = 1.3</b>	<b>0</b> sites exceeding AL	-	<b>7/2011</b>
<b>LEAD (ppb)</b> Corrosion of household plumbing systems; natural erosion	<b>12.1</b> (90 <sup>th</sup> Percentile)	<b>0</b>	<b>AL = 15.0</b>	<b>0</b> sites exceeding AL	-	<b>7/2011</b>
NITRATE as nitrogen (ppm) Runoff from fertilizer use; leaching from septic; natural erosion	0.431	10	10	Single Sample	-	4/8/13
<b>DISINFECTANT/DISINFECTION BY-PRODUCTS</b>						
<b>HAA5 Haloacetic Acids (ppb)</b> By-product of drinking water disinfection	<b>1.3</b>	<b>None</b>	<b>60</b>	<b>1.1 – 1.3</b>	-	<b>Quarterly</b>
<b>TTHMs Total Trihalomethanes (ppb)</b> By-product of drinking water disinfection	<b>12.1</b>	<b>None</b>	<b>80</b>	<b>7.9 – 12.1</b>	-	<b>Quarterly</b>
<b>CHLORINE (ppm)</b> Drinking water disinfectant	<b>1.2</b>	<b>4</b>	<b>4</b>	<b>0.5 – 1.2</b>	-	<b>Monthly</b>
TOC (Total Organic Carbon)	The % of TOC removal was measured each month & the system met all removal requirements set by IEPA					
<b>STATE REGULATED CONTAMINANTS</b>						
FLUORIDE (ppm) Water additive which promotes strong teeth; natural erosion	0.8	4	4	0.8 – 1.0	-	7/11/13 Monthly
<b>RADIOACTIVE CONTAMINANTS</b>						
COMBINED RADIUM 226/228 (pCi/L) Decay of natural and man-made deposits	1.55	0	5	Single Sample	-	11/12/08
GROSS ALPHA EMITTERS (pCi/L) Erosion of natural deposits	2.6	0	15	Single Sample	-	11/12/08
BETA EMITTERS (mrem/yr) Decay of natural and man-made deposits	3.9	0	50	Single Sample	-	11/12/08
<b>UNREGULATED CONTAMINANTS</b>						
CHLORATE (ppm) Drinking water disinfectant	0.060	none	none	0.053 – 0.060	-	6/25/13
CHROMIUM, TOTAL (ppm) Erosion of natural deposits	0.0005	none	none	0.0002 – 0.0005	-	6/25/13 Quarterly
HEXAVALENT CHROMIUM (ppm) Erosion of natural deposits	0.0004	none	none	0.0002 – 0.0004	-	6/25/13 Quarterly
MOLYBDENUM (ppm)	0.001	none	none	0 – 0.001	-	6/25/13

Erosion of natural deposits; industrial runoff						
SODIUM (ppm) Erosion of naturally occurring deposits; water softener	9	none	none	Single Sample	-	7/11/13
STRONTIUM (ppm) Erosion of natural deposits	0.13	none	none	0.11 – 0.13	-	6/25/13
SULFATE (ppm) Erosion of naturally occurring deposits	29	none	none	Single Sample	-	7/11/13
VANADIUM (ppm) Erosion of natural deposits	0.0003	none	none	0.0003 – 0.0003	-	6/25/13

Abbreviation	Definition
Action Level	Action Level is the level that triggers special treatment or other required actions by a water supply.
MCL	Maximum Contaminant Level is the highest level allowed by EPA in drinking water.
MCLG	Maximum Contaminant Level Goal is the level of a contaminant below which there is no know or expected health risk.
NTU	Nephelometric Turbidity Units. Turbidity is a measure of water clarity.
pCi/l	Pico Curies per liter. EPA considers 50 pCi/l to be a level of concern for beta particles.
pos/month	The maximum number of positive samples collected in a calendar month.
ppb	Parts-per-billion is also referred to as micrograms per liter (µg/L). Equivalent to one ounce in 7,350,000 gallons of water.
ppm	Parts-per-million is also referred to as milligrams per liter (mg/L). Equivalent to one ounce in 7,350,000 gallons of water.
TT	Treatment Technique refers to a required process intended to reduce contaminant level drinking water.

**Lead and Copper:** Some homes in Lake Bluff with old lead service lines, lead plumbing, or copper plumbing with lead solder, may have lead and copper in their water. To minimize these levels, the Illinois EPA requires CLCJAWA to add phosphate to the water at a concentration of 0.3 ppm orthophosphate. This commonly used food ingredient coats the inside of pipes with a thin film. The film reduces lead and or copper levels that may have otherwise leached from a homeowner's plumbing into the water.

**Sodium:** There is no state or federal MCL for sodium. Monitoring is required to provide information to consumers in the event residents are concerned about sodium intake for dietary reasons. If the sodium level in Lake Bluff's water was greater than 20 ppm, and a resident was on a sodium-restricted diet, he or she would be advised to consult a physician.

**Turbidity:** Turbidity is a measure of water clarity. Treatment facilities monitor turbidity because it is a good indicator of water quality and the effectiveness of filtration and disinfection systems. At CLCJAWA, turbidity is checked every ten seconds in numerous locations by automatic monitoring equipment and every four hours, by hand, in the laboratory.

**Unregulated Contaminants:** A contaminant that may be present in drinking water but that do not have health based standards set by the regulator agencies. Drinking water agencies may be monitoring these contaminants to assist the USEPA in determining the occurrence of unregulated contaminants in drinking water.

**Where do water contaminants come from?** Drinking water, including bottled water, may reasonably be expected to contain 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 may be obtained by calling the USEPA Safe Drinking Water Hotline at 1-800-426-4791.

Both tap and bottled water come 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 materials and can pick up substances resulting from the presence of animal or human activity. Contaminants that may be present in untreated water include:

- Microbial contaminants, such as viruses and bacteria, can be naturally occurring or may come from sewage treatment plants, septic systems and livestock operations.
- Inorganic contaminants, such as salts and metals, can be naturally occurring or result from urban storm water runoff, wastewater discharges, oil and gas production, mining or farming.

- Pesticides and herbicides come from sources such as agricultural and residential storm water runoff.
- Organic chemical contaminants, including synthetic and volatile organic compounds, are by-products of industrial processes and petroleum production, but can also come from gas stations, urban storm water runoff and septic systems.
- Radioactive contaminants can be naturally occurring or be the result of oil, gas and mining activities.

Has Lake Michigan been assessed to determine how susceptible it is to potential contamination? The Illinois EPA, using the Great Lakes Protocol, completed an assessment in April 2003. Lake Michigan is a surface water source and like all surface waters, is susceptible to potential contaminants. The very nature of surface water allows contaminants to migrate to the intake with no protection, only dilution. CLCJAWA's intake is ranked as moderately sensitive to potential contaminants. There are no potential contamination sources within the intake's critical assessment zone. However, the combination of land use, storm sewer outfalls and the proximity of the North Shore Sanitary District ("NSSD") pumping stations in the immediate area add to the susceptibility of CLCJAWA's intake. NSSD discharges treated wastewater to the Des Plaines River and not into Lake Michigan.

All residents are participants in the water cycle. Individual activities impact the rivers and lakes in Lake Bluff's watershed and those into which its wastewater plants discharge. Please properly use, store, and dispose of all medications and household chemicals. Visit the Solid Waste Agency of Lake County Website at [www.swalco.org](http://www.swalco.org) for options to dispose of household chemical waste.

How can Lead get into drinking water? Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Although residents can't control the variety of materials used in plumbing components, they can minimize the potential for lead exposure by flushing the tap for 30 seconds to 2 minutes before using the water for drinking or cooking. Elevated levels of lead can cause serious health problems, especially in pregnant women and young children. Residents concerned about lead in their water are encouraged to have the water tested. For more information on lead in drinking water, testing methods and steps that can be taken to minimize exposure, contact the USEPA Safe Drinking Water Hotline at 1-800-426-4791 or visit [epa.gov/safewater/lead](http://epa.gov/safewater/lead).

What precautions should immune compromised persons take? Some people may be more vulnerable to drinking water contaminants than the general population. Immune compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, individuals with HIV/AIDS or other immune system disorders, as well as some elderly and infants can be particularly at risk from infections. These people should seek advice from a health care provider about drinking water. The USEPA and Center for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, and other microbial contaminants, are available from the USEPA Safe Drinking Water Hotline at 1-800-426-4791.

Was CLCJAWA or Lake Bluff cited with any drinking water violations this year? CLCJAWA and the Village were in full compliance with all drinking water regulations this year.

How can I get involved? The Village Board meets the second and fourth Monday of each month, and the Public is always welcome to attend. Village President Kathleen O'Hara is a member of the Board of Directors of CLCJAWA, which meets on the fourth Wednesday of each month. CLCJAWA provides tours of the water treatment facility, and staff members are also available for public speaking or for school visits. For more information please contact CLCJAWA at 847-295-7788, or Village Engineer George Russell, at 847-283-6884.