

Lake Lucerne **Club Company**

Public Drinking Water System **Consumer Confidence Report** **For 2016**

Submitted by the LLCC Water Division

Jeff Wright, System Operator
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An annual report required by the Ohio Environmental Protection Agency
Division of Drinking and Ground Water

Lake Lucerne Club Company

Water Quality Report for 2016

Introduction

The Lake Lucerne Club Company prepared the following report to provide information to you, the consumer, on the quality of your drinking water. Included in this report is general health information, water quality test results, how to participate in decisions about the water, and water system contacts.

Water Source Information

The Lake Lucerne Club Company receives its water from 17 wells drilled into the Berea Aquifer. There are five well fields. These are located adjacent to pump stations on Summit Dr., Maple Dr., Westhill Dr., and on Lucerne Dr. Each station treats the water with chlorine to eliminate bacteria. The East Summit station also treats the water with caustic to raise the pH close to neutral and with sodium hexametaphosphate to control iron and manganese discoloration concerns. Water is pumped to reservoirs, then to you. In an emergency we can get water from the Chagrin system or other sources that pass EPA standards (we have not used outside sources for many years).

Susceptibility Analysis

The susceptibility of the aquifer (source of drinking water) to contamination was determined by evaluating: (A) available site-specific and regional information (i.e., aquifer material, topography, soils, rate of ground water recharge, etc.), (B) pollution potential rating of the drinking water source protection area, (C) available ground water quality data, and (D) potential contaminant sources that were identified within the drinking water source protection area. The results of this evaluation indicate that the aquifer within the protection area has a high susceptibility because of the following reasons:

- According to well log information from the facility, a significant thickness of low-permeability protective layer between the aquifer and ground surface is not present in all the well locations throughout the well field area.
- Water quality results indicate the presence of nitrate, possibly implying a pathway exists from the ground surface to the aquifer, and
- Potential significant contamination sources exist within the protection area

What are sources of contamination to drinking water?

The sources of both tap 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 dissolves natural minerals and, in some cases, radioactive materials, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants which may be present in source water include: (A) microbial contaminants such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; (B) inorganic contaminants such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharge, oil and gas production, mining, or farming.; (C) pesticides and herbicides which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses; (D) organic chemical contaminants including synthetic and volatile organic chemicals which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; (E) radioactive contaminants which can be naturally-occurring or be a result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations which 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.

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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

Who needs to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population, immune-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 infection. These people should seek advice about drinking water from their health care providers. EPA/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 (1-800-426-4791).

About Your Drinking Water

The EPA requires regular sampling to insure drinking water safety. The Lake Lucerne Club Co. conducted sampling for bacteria, inorganics, radiologicals, synthetic organics, nitrates, and volatile organic contaminants during 2012, 2013, 2014, 2015 and 2016. Samples were collected for a total of 92 different contaminants, most of which were not detected in the Lake Lucerne's water supply. The Ohio EPA requires us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Therefore, some of our data, though accurate, is more than one year old. During 2012, 2013, 2014, 2015 and 2016 the Lake Lucerne Club Co. did not have any violations. The Lake Lucerne Club Co. also periodically tests for the presence of lead and copper as dictated by EPA.

TABLE 1

Lake Lucerne Drinking Water Contaminants

	Contaminants	MCLG	MCL	Level found	Range of detection	Violation	Sample Year	Typical Sources of Contaminants
90 th % level 2 ppb	Lead (ppb)	0	15 AL=15 ppb	< 2	< 2	None	2014	Solder used for plumbing connections. See note 4.
90 th %level 0.01 ppm	Copper (ppm)	1.3	1.3 AL=1.3 ppm	1.2	0.0	None	2014	Corrosion of household plumbing systems. See note 3.
	Inorganic contaminants					None	2014	
	Synthetic organic contaminants*					None	2016	

	Volatile organic contaminants					None	2014	
	Coliform bacteria **					None	2016	Naturally present in the environment
	Radiological Contaminants Combination RA226/RA228	0	5 pCi/L	<0.97 -4.78 Pci/L	<0.97- 4.78 Pci/L	None	2015	Erosion of natural deposits
	Gross Alpha Emitters	0	AL=15	5.05	0-15.0	None	2015	Erosion of natural deposits
	Chlorine(ppm)	MRDLG = 4	MRDL = 4	1.8	0.6-1.8	None	2016	Water Additive to control microbes
	Haloacetic Acids (HAA5) (ppb)	NA	60	15.0	<1.0-15.0	None	2016	By-product of drinking water chlorination
	Total Trihalomethanes (TTHM) (ppb)	NA	80	4.19	<0.5-4.19	None	2016	By-product of drinking water chlorination
	Di(2-ethylhexyl) Phthalate (ppb)	0	6	<0.6	<0.6	None	2014	Discharge from rubber & chemical factories
	Fluoride (ppm)	4	4	0.96	<.26-0.96	None	2014	See note 2
	Nitrate (ppm)	10	10	3.16	<0.1-3.16	None	2016	See note 1
	Barium (ppm)	2.0	2.0	0.5	0.05-0.5	None	2014	Erosion of natural deposits.
	Arsenic (ppb)	0	10	2.0	0.0-2.0	None	2014	Erosion of natural deposits. Runoff from grass or orchards.

* includes pesticides and herbicides.

** EPA MCLG minimum goal 0%+

Note 1 Runoff from fertilizer, leaching from septic tanks, sewage and erosion of natural deposits.

Note 2 Erosion of natural deposits, water additives which promote strong teeth, discharge from fertilizer and aluminum factories

Note 3 Erosion of natural deposits, leaching from wood preservatives.

Note 4 Erosion of natural deposits

The EPA is reviewing its drinking water standard for arsenic because it may not be stringent enough. Arsenic is a naturally occurring mineral known to cause cancer at high concentrations and is linked to other health effects such as skin damage and circulatory problems. . Our water has about 0.2 ppb (parts per billion).

We are not required to monitor turbidity for our ground water system. Surface water requires this test. Adequate disinfection took place without failure. Nitrate in drinking water levels above 10 ppm is a health risk for infants less than six (6) months of age. High nitrate levels can cause baby blue syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

Nitrate levels in Lake Lucerne's drinking water are less than 3.16 ppm, well below the maximum allowed of 10.0 ppm. This data is from a test made during 2016.

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 Lake Lucerne Club Company is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. If you are concerned about lead in your water, you may wish to have your water tested and consider flushing your tap for 30 seconds to 2 minutes before using tap water if water has been sitting for several hours. 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 <http://www.epa.gov/safewater/lead>.

The Lake Lucerne Club Co. was not required to monitor for radon in the finished water in recent years but did monitor in 2003 and 2004 at which time it was determined that radon was not an issue in the Lake Lucerne Club Co. finished water. Radon is a radioactive gas that occurs naturally in some ground water. It may pose a health risk when the gas is released from water as occurs in showering, bathing, or washing dishes or clothes. Radon gas released from drinking water is relatively a small part of the total radon in air. Major sources of Radon gas are soil and cigarettes. Inhalation of radon has been linked to lung cancer; however, the effects of radon ingested in drinking waters are not yet clear. If you are concerned about radon in your home, tests are available to determine the total exposure level. For additional information on how to have your home tested, call 1-800-SOS-RADON.

LICENSE TO OPERATE (LTO) STATUS INFORMATION: In 2016 we had an unconditioned license to operate our water system.

TO PARTICIPATE IN DECISIONS REGARDING YOUR DRINKING WATER: Public participation and comments are encouraged at meetings of the Lake Lucerne Board, Call Dean Koch (440/289-3656) to find out where and when the meetings will be held.

FOR MORE INFORMATION on your drinking water, contact our System Operator, Jeff Wright at 440/543-5750, or the Water Trustee, Terry Franklin at 440/543-5977.

DEFINITIONS OF SOME TERMS CONTAINED WITHIN THIS REPORT

Maximum Contaminant Level Goal (MCLG): The level of contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

Maximum Contaminant Level (MCL): The highest level of contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

Parts Per Million (ppm) or Milligrams per Liter (mg/L): A unit of concentration often used when measuring levels of pollutants/contaminants in air or water. One ppm is 1 part in 1,000,000. The common unit mg/liter is equal to ppm. Four drops of ink in a 55-gallon barrel of water would produce an "ink concentration" of 1 ppm. A part per million also corresponds to one second in a little over 11.5 days.

Parts per Billion (ppb) or Micrograms per Liter (ug/l): A unit of measure for concentration of a contaminant. One part per billion is 1 part in 1,000,000,000. One drop of ink in one of the largest tanker trucks used to haul gasoline would represent 1 ppb or a part per billion corresponds to one second in 31.7 years.

Action Level (AL): The concentration of a contaminant, which, if exceeded, requires treatment or other operations that a water system must follow.

Treatment Technique (TT): a required process intended to reduce the level of a contaminant in drinking water.

Maximum Residual Disinfectant Level (MRDL): The highest residual disinfectant level allowed.

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

The “<” symbol: a symbol which means less than. A result of <0.5 means that the lowest level that could be detected was below 0.5.

Picocuries per liter (pCi/L): A common measure of radioactivity.