

Information about Cross Connection Control

What is cross connection? A cross connection occurs whenever a potable (safe to drink) water line is directly or indirectly connected to a non-potable piece of equipment in your home or business. Examples of non-potable equipment in your home or business may include irrigation systems, fire sprinklers, or boilers.

Why should I be concerned about cross connections? An unprotected cross connection on your premise could contaminate the drinking water not only in your home, but in neighboring businesses and homes. Severe illnesses - even death - have been caused by cross contamination events that could have been prevented.

Where can I go for more information? Please contact the DEP, Division of Water Supply at 617-292-5770: or the Lynn Water & Sewer Commission, Engineering Department at 781-596-2400.

How is Your Water Treated?

The Lynn Water & Sewer Commission operates a direct filtration water treatment plant to purify your water. Raw Water from the reservoir system is treated using chemicals and filtration to remove small particles and organisms that may cause water to take on unpleasant odors and tastes and sometimes make it unhealthy to drink. This process consists of several steps as outlined below:

- **Chemical additives:** The process begins with alum being added to the water at specific dosages. This prompts small particles to stick together and settle for removal.
- **Filtration:** The chemically treated water then flows through a filter bed. The filters are comprised of several layers of materials including activated carbon, sand and coarse gravel which trap the particles, thus removing them from the water. In order to assure effective treatment, each filter is cleaned using a high-flow backwash process at least once per day.
- **Disinfection:** Chlorine dioxide and chlorine are added to the water at several stages of the treatment process to inactivate or kill disease-causing pathogens that may be present in the water.
- **Final Steps:** Several chemicals are added to the water to protect your health. Fluoride is added to the water to prevent the formation of cavities and tooth decay. Zinc orthophosphate and caustic soda are added to the water for corrosion control.

Information about Lynn's Source Water Assessment Program

Where does Lynn's water come from?

Lynn operates six public surface water supply sources. The reservoirs are located in four separate water supply protection areas, with Breeds Pond being entirely in Lynn; Hawkes Pond in Lynnfield and Saugus; Birch Pond in Lynn and Saugus; and Walden Pond in Lynn, Lynnfield, and Saugus. The intake and pump station for the Ipswich River and the intake and canal for the Saugus River are both in Lynnfield. The water is treated at the Raymond F. Reardon Treatment Plant and then pumped to the low service reservoir, the distribution system and distribution storage tanks. Lynn also uses Massachusetts Water Resources Authority surface water to serve General Electric Company and as an emergency source for customers.

How are these sources protected?

The Department of Environmental Protection has prepared a Source Water Assessment Program (SWAP) report for the water sources serving Lynn's water system. The SWAP report notes key issues of activities in Zone A and Emergency Planning Zone; chemical and hazardous materials manufacture, storage and use; residential land uses; transportation corridors; roads and maintenance depots; golf course; oil or hazardous material contamination sites and comprehensive surface water protection planning.

What can be done to improve protection?

The SWAP report recommends protecting Zone A by removing all activities as to comply with DEP's Zone A Requirements, use Best Management Practices for storage, use and dispose of hazardous materials, storage of pesticides, fertilizers or road salt within Zone A should be covered and contained; keep new prohibited activities out of Zone A, and identify storm water drains and the drainage system along transportation corridors. Lynn plans to address the protection recommendations by implementing strategies in the Surface Water Supply Protection Plan and by coordinating its efforts through Lynn's Watershed Protection Team. Residents can help protect Lynn's sources by reporting any dumping within Lynn's watershed, properly disposing of pet wastes; practicing good septic systems maintenance; supporting local water supply protection initiatives; properly disposing of hazardous household chemicals, and limiting pesticides and fertilizer use.

Where can I see the SWAP Report?

The complete SWAP report is available at the Lynn Water & Sewer Commission offices and online at www.state.ma.us/dep/drp/dws. For more information call Richard Dawe at 781-595-5200.

Water Quality Results

Contaminant	MRDL or Unit	MRDLG or MCL	MCLG	Detected	Range	Major sources in Drinking water
Microbiological Contaminants						
Turbidity	NTU	TT=1	0	0.19	0.06 to 0.19	Soil runoff
Turbidity	NTU	(1)	100%	100%	100%	Soil runoff
Cryptosporidium (13) (14)	Oocysts/1	TT	0	0.1	0 to 0.1	Human & Animal Fecal Waste
Inorganic Contaminants						
Lead	ppb	AL=15	0	3 (3)(10)	0 to 8 (4)	Corrosion of household plumbing: erosion of natural deposits.
Copper	ppm	AL=1.3	0	0.1 (3)(10)	0.01 to 0.3 (5)	Corrosion of household plumbing: erosion of natural deposits.
Barium	ppm	2.0	2.0	0.02	N/A	Erosion of natural deposits
Fluoride	ppm	2.0(6)	N/A	1.0	0.3 to 1.0	Water additives which promote strong teeth
Sodium	ppm	20 (12)	N/A	90	N/A	Salting of Roadways
Nitrate	ppm	10	10	0.1	N/A	Runoff from fertilizer : leaching from septic tanks
Nickel	ppb	100(12)	0	2	N/A	Erosion of natural deposits
Volatile Organic Contaminants						
TTHMs (Total Trihalomethanes)	ppb	80	0	53 (7)	10 to 77 (8)	By-product of drinking water disinfection
HAA5 (Haloacetic Acids)	ppb	60	0	26 (7)	6 to 41 (8)	By-product of drinking water disinfection
Chloromethane	ppb	N/A	2.69(12)	0.71	0 to 0.71	Discharge from industrial Uses
Chlorite	ppm	1	0.8	0.4	0 to 0.4	By-product of drinking water disinfection
Chlorine	ppm	4	4	1.4	0 to 1.4	Water additive to control microbes
Chlorine Dioxide	ppb	800	800	260	30 to 260	Water additive to control microbes
Radionuclides						
Radium-228	pCi/l	5 (9)	0	0.48 +/- 0.51 (11)		N/A Erosion of natural deposits
Radium-226	pCi/l	5 (9)	0	0.05 +/- 0.03 (11)		N/A Erosion of natural deposits
Combined Radium	pCi/l	5 (9)	0	0.53 (11)		N/A Erosion of natural deposits

NO VIOLATIONS OCCURRED DURING THE TESTING OF THE ABOVE CONTAMINANTS

- Notes:**
- (1) TT = less than or equal to 0.3 NTU in 95% of all monthly samples taken.
 - (2) Percent in 5% of all monthly samples taken.
 - (3) Sampled during 2017.
 - (4) Two of the 30 samples taken exceeded the AL for lead.
 - (5) Zero of the 30 samples taken exceeded the AL for copper.
 - (6) EPA's MCL for fluoride is 4 ppm. However, MADEP has set a lower MCL to better protect human health.
 - (7) Highest annual running average of all samples taken.
 - (8) Range of all individual sampling results.
 - (9) MCL is for combined levels of Radium-226 and Radium-228.
 - (10) 90% percentile. Out of every 10 homes, 9 were at or below this level.
 - (11) Sampled during 2011. The MADEP has reduced monitoring requirements for these parameters to less often than once per year because the source is not likely to be at risk of contamination.
 - (12) No MCL, however, MADEP has established an Office of Research and Standards Guideline Limit (ORSGL) for this contaminant.
 - (13) Detected in Untreated Surface Water during 2017
 - (14) Some people who drink water containing cryptosporidium could experience severe gastrointestinal effects

Unregulated Contaminant Monitoring (a)

Sulfate	ppm	N/A	250	24	N/A	Erosion of natural deposits
PFAS (b)	ppt	70 (c)	0	18.2	9.3 to 18.2	Manmade Compounds
HAA5 (Haloacetic Acids)	ppb	60	0	16 (d)	2 to 23 (e)	By-Product of drinking water disinfection
HAA6 (Haloacetic Acids)	ppb	N/A	0	12 (d)	1 to 16 (e)	By-Product of drinking water disinfection
HAA9 (Haloacetic Acids)	ppb	N/A	0	28 (d)	3 to 38 (e)	By-Product of drinking water disinfection

- (a) Unregulated contaminants are those for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future regulation is required.
- (b) The sum of six Per- and Polyfluoralkyl Substances or PFAS compounds that includes Perfluorooctanoic Acid (PF0A), Perfluorooctanesulfonic Acid (PFOS), Perfluorononanoic Acid (PFNA), Perfluorohexanesulfonic Acid (PFHxS), Perfluoroheptanoic Acid (PFHpA), and Perfluorodecanoic Acid (PFDA).
- (c) MADEP has established an Office of Research and Standards Guideline Limit (ORSGL) for these contaminants of 70 ppt in 2019 and 20 ppt in 2020.
- (d) Highest Annual Running Average of All Samples Taken. (e) Range of individual sampling results

The data presented in this report is based on tests that were conducted during 2019 except where noted. Although the Commission performs numerous tests during the year, only the regulated contaminants that were detected are listed above. If you are interested in a more detailed report, please contact Water Superintendent Richard Dawe at (781) 595-5491.

Key to reading the Table: MADEP = Mass. Dept. of Environmental Protection; mrem/year = millirems per year (measure of radiation absorbed by the body). N/A = Not Applicable; NTU=Nephelometric Turbidity Units; Oocysts/1= Oocysts per liter; pCi/l = picocuries per liter(measure of radioactivity); ppb = parts per billion; ppm = parts per million; ppt = parts per trillion TT=treatment technique. **Action Level(AL)** the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. **Maximum Contaminant Level (MCL):** the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology. **Maximum Contaminant Level Goal (MCLG):** the level of Residual contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety. **Maximum Residential Disinfectant Level (MRDL):** the highest level of disinfectant (Chlorine, Chloramines, Chlorine Dioxide) allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants. **Maximum Residual Disinfectant Level Goal (MRDLG)** the level of drinking water disinfectant (Chlorine, Chloramines, Chlorine Dioxide) below which there is no expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants. **Treatment Technique (TT):** A required process to reduce the level of acontaminant in drinking water. **Turbidity:** A measure of the cloudiness of water, monitored as a good indicator of the effectiveness of the filtration system.



ANNUAL WATER QUALITY REPORT - 2019

Lynn Water & Sewer Commission

Public Water Supply ID # MA 3163000

The Quality of Your Drinking Water

The Lynn Water & Sewer Commission is pleased to send you this Annual Report on the quality of Lynn's drinking water. This report contains results of your drinking water tested during 2019 and other important information about your drinking water. The Commission has an extensive water testing and monitoring program which is explained in this report. Test results show that Lynn's drinking water is in full compliance with all the standards established by the Federal and State agencies that regulate public water supplies. The Commission has great confidence in the water that is delivered to the residents of Lynn. Please take the time to read this important report and contact us if you have any questions or comments about the report or your water quality.

Important Information from the EPA and DEP

To ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) and Massachusetts Department of Environmental Protection (DEP) prescribe limits on the amounts of certain contaminants in the water provided by public water systems. Federal Drug Administration and the Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Drinking Water and People with Weakened Immune Systems

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 systems 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. EPA and the Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the EPA Safe Drinking Water Hotline at 1-800-426-4791.

Why are There Contaminants in my Drinking Water ?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. 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 EPA Safe Drinking Water Hotline at 1-800-426-4791 and the DEP Drinking Water Main line at 1-617-292-5770. General information about water quality is also available at the EPA'S web site, www.epa.gov/safewater. 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 dissolves naturally occurring minerals and radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- **Microbial contaminants** such as viruses and bacteria, which may come from sewerage treatment plants, septic systems, agricultural livestock operations and wildlife;
- **Inorganic contaminants**, such as salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater, oil and gas production, mining or farming;
- **Pesticides and Herbicides**, which may come from a variety of sources such as agriculture, stormwater runoff and residential uses;
- **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 water runoff and septic systems;
- **Radioactive contaminants**, which can be naturally occurring or the result of oil and gas production and mining activities.

How is My Water Tested?

Water quality testing by the Lynn Water & Sewer Commission is conducted daily at the Raymond F. Reardon Water Treatment Plant and weekly at more than 20 different sites in the distribution system. Quality testing is done internally and by an independent state certified laboratory.

Important Information about Lead In the Water

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. Lynn Water & Sewer Commission 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 EPA Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.epa.gov/safewater/lead>.