

# 2020 DRINKING WATER QUALITY REPORT

LYNNFIELD CENTER WATER DISTRICT, LYNNFIELD, MASSACHUSETTS

PWS ID# 3164000

## Compliance with Safety and Health Standards

The Lynnfield Center Water District's (LCWD's) water meets and exceeds all state and federal standards. We test our water regularly through a certified laboratory. During 2020, we collected 2,500 water samples in the system that were then tested for compliance

with state and federal health standards. State and federal regulators routinely monitor our compliance and testing protocols to assure that we deliver safe drinking water to our customers.

## Important Drinking Water Information

All sources of drinking water (both tap and bottled water) including rivers, lakes, streams, ponds, reservoirs, springs, and wells contain some naturally occurring contaminants or substances. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

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 affects can be obtained by calling the Environmental Protection Agency's (EPA's) Safe Drinking Water Hotline at 1-800-426-4791. In order to ensure that tap water is safe to drink, the Massachusetts Department of Environmental Protection (MassDEP) and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health. This report provides you with information about the contaminants found naturally in your drinking water, the levels at which they were found, and the likely source of each contaminant.

### Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, can be naturally-occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining and farming.
- Pesticides and herbicides may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants include synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff and septic systems.
- Radioactive contaminants can be naturally-occurring or be the result of oil and gas production and mining activities.

## Cross Connection Control Program

A cross connection is a connection between a drinking water pipe and a polluted source. The pollution can come from your own home. For instance, you're going to spray fertilizer on your lawn. You hook up your hose to the sprayer that contains the fertilizer. If the water pressure drops (say because of the fire hydrant use in the town) when the hose is connected to the fertilizer, the fertilizer may be sucked back into the drinking water pipes through the hose. Using an attachment on your hose called a backflow prevention device can prevent this problem.

The LCWD recommends the installation of backflow prevention devices, such as low cost hose bib vacuum breaker, for all inside and outside hose connections. You can purchase that at a hardware store or plumbing supply store. This is a great way for you to help protect the water in your home as well as the drinking water system in your town!

## Private Wells and Cross Connection Control

Many residents in Lynnfield own their own private wells used for irrigation in addition to receiving drinking water from the LCWD. If a residence is connected to both private well and the LCWD's public water supply, the piping carrying the private well and public water cannot be connected anywhere. Otherwise an illegal cross connection is created, through which private well water may be siphoned into the public water mains. Therefore, residences served by private wells must physically, disconnect from the public water system, or the pipes carrying private well and public water must be kept completely separate by means of an air gap. The physical separation between the private well and the public water supply, referred to as an air gap, must be at least twice the diameter of the water supply outlet, but never less than one inch. If you own and use a private well, please contact the office to set up an inspection and to make sure that it is properly registered in the LCWD database.

## 2020 Drinking Water Report

This report describes the LCWD's drinking water sources and treated water quality for calendar year 2020, and programs that protect the high quality of our water supply. This publication is mandated by the federal public-right-to-know regulation requiring community water suppliers to provide

specific treated water quality information annually to their customers.

Additional information beyond the minimum federal requirements is included that addresses typical questions our customers ask about the LCWD's water system.



### Published by the:

Lynnfield Center Water District  
83 Phillips Road  
Lynnfield, MA 01940  
[www.LCWD.us](http://www.LCWD.us)

# 2020 Water Quality Data

Listed below are 27 substances detected in the LCWD's drinking water during 2020 (unless noted otherwise). The LCWD also does additional testing well beyond what is required by federal and state regulations. Not listed are more than 100 other substances for which we tested that were not detected during 2020, including comprehensive testing for pesticides and herbicides.

Substance	Highest Detected Levels	Range of Detected Levels	Highest Level Allowed (MCL)	Goal (MCLG)	Source of Contamination
<b>Regulated at the Water Supply Wells</b>					
Barium <sup>1</sup>	0.05 ppm	0.02 – 0.05 ppm	2 ppm	2 ppm	Discharge of drilling wastes, discharge from metal refineries, erosion of natural deposits
Fluoride <sup>2</sup>	0.6 ppm	ND – 0.6 ppm	4 ppm	4 ppm	Erosion of natural deposits; water additive which promotes strong teeth
Free Chlorine	0.65 ppm <sup>3</sup>	0.2 – 1.3 ppm <sup>4</sup>	4 ppm (MRDL)	4 ppm (MRDLG)	Water additive used to control microbes
Gross Alpha	0.4 pCi/L	No range, only one sample required	15 pCi/L	0 pCi/L	Erosion of natural deposits
Nitrate as Nitrogen	5.81 ppm	0.11 – 7.48 ppm	10 ppm	10 ppm	Runoff from fertilizer use; leaching from septic systems; erosion of natural deposits
Perchlorate	0.4 ppb	ND – 0.4 ppb	2 ppb	NA	Rocket propellants, fireworks, munitions, flares, blasting agents
Radium (226 & 228 combined)	0.7 pCi/L	No range, only one sample required	5 pCi/L	0 pCi/L	Erosion of natural deposits
Total Trihalomethanes <sup>5</sup>	46.4 ppb	13.9 – 46.4 ppb	80 ppb	NA	By-product of drinking water chlorination
Total Haloacetic Acids <sup>5</sup>	6.21 ppb	3.28 – 6.21 ppb	60 ppb	NA	By-product of drinking water chlorination
Substance	Average Detected Levels	Range of Detected Levels	Highest Guidance Level (SMCL or ORSG)	Goal (MCLG)	Source of Contamination
<b>Secondary/Guideline Contaminants</b>					
Chloride	43.8 ppm	37.3 – 50.2 ppm	250 ppm	–	Erosion of natural deposits
Chloroform	0.59 ppb	ND – 0.78 ppb	70 ppm	–	Byproduct of water disinfection
Copper	0.11 ppm	0.09 – 0.13 ppm	1 ppm	–	Erosion of natural deposits
Manganese <sup>6</sup>	43 ppb	ND – 95 ppb	50 ppb	–	Naturally occurring minerals
Odor	1.5 Ton	1.0 – 2.0 Ton	3 Ton	–	
Sodium <sup>7</sup>	13.8 ppm	11.7 – 15.8 ppm	20 ppm	–	Erosion of natural deposits
Sulfate	19.4 ppm	18.2 – 20.5 ppm	250 ppm	–	Erosion of natural deposits
Total Dissolved Solids (TDS)	196 ppm	188 – 204 ppm	500 ppm	–	Naturally occurring minerals
Zinc	0.006 ppm	ND – 0.007 ppm	5 ppm	–	Naturally occurring minerals
<b>Regulated at the Customer's Tap</b>					
Lead	7 ppb	ND – 23 ppb 1 result > AL	15 ppb	0 ppb	Corrosion of household plumbing systems, erosion of natural deposits
Copper <sup>8</sup>	1.02 ppm	0.047 – 1.1 ppm 0 result > AL	1.3 ppm	1.3 ppm	Corrosion of household plumbing systems, erosion of natural deposits, leaching from wood preservatives

## Definitions:

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

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

**Maximum Residual Disinfectant Level (MRDL)** – The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG)** – The level of a drinking water disinfectant below which there is no known expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**Action Level (AL)** – The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

**90<sup>th</sup> percentile** – Out of every 10 homes sampled, 9 were at or below this level.

**Massachusetts Office of Research and Standards Guideline (ORSG)** – This is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.

**Secondary Maximum Contaminant Level (SMCL)** – These standards are developed to protect the aesthetic qualities of drinking water and are not health based.

## Footnotes:

<sup>1</sup> Results from most recent testing in 2018.

<sup>2</sup> EPA's MCL for fluoride is 4 ppm. However, our state has set a lower MCL, 2 ppm, to better protect human health.

<sup>3</sup> The highest level detected is based on the annual average of each month.

<sup>4</sup> This range represents the individual results of all samples, rather than the averages.

<sup>5</sup> Total trihalomethanes and five haloacetic acid levels are based on one sample taken in the third quarter of 2020.

<sup>6</sup> The SMCL for manganese is 50 ppb. EPA has established a lifetime health advisory (HA) of

300 ppb and a SMCL of 50 ppb for manganese to protect against concerns of potential neurological effects, and a 1-day and 10-day HA of 1,000 ppb for acute exposure.

<sup>7</sup> The ORSG for sodium is 20 ppm. Sodium sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the sodium levels where exposures are being carefully controlled.

<sup>8</sup> Copper is listed twice in this table, the first represents results found at an approved sample location. The second represents the results of 20 samples taken at the customers tap, at locations approved by MassDEP.

## Key to Abbreviations:

> – Greater than  
 NA – Not applicable  
 ND – Not detected  
 ppm (Part Per Million) – One part per million is the equivalent of \$1 in \$1,000,000.  
 ppb (Part Per Billion) – One part per billion is the equivalent of \$1 in \$1,000,000,000.  
 Ton – Threshold odor number

# Lynnfield Center Water District's Source Water Assessment Program (SWAP)



## Where does my water come from?

The Lynnfield Center Water District (LCWD) obtains its drinking water from four groundwater wellfields, as shown on the map below. The Glen Drive wellfield contains four bedrock wells. The Main Street wellfield contains a single gravel packed well. There are two wellfields in the Phillips Road area: a tubular wellfield with 60 wells, and a wellfield with five wells, four of which are bedrock wells and one gravel pack well; all of which are treated at the Phillips Road greensand facility. In addition to the wellfields, the LCWD operates two storage tanks, one at Knoll Road and one at Wing Road. The distribution system consists of approximately 48 miles of water mains ranging in size from 2- to 16-inch diameter.

## How are these sources protected?

The MassDEP has prepared a Source Water Assessment Program (SWAP) Report for the water supply sources serving the LCWD. The SWAP report notes the key issues of: residential land uses and activities; presence of oil or hazardous material contamination sites; and comprehensive wellhead protection planning in the water supply protection areas.

The report commends the LCWD on its existing source protection measures, which include: posting "Public Drinking Water" signs; regular inspections of protection areas; prohibition of non-water-supply related activities within the protection area; development of an "Emergency Response Plan" to deal with spills or other emergencies; and regular inspections of commercial and industrial activities by the Board of Health.

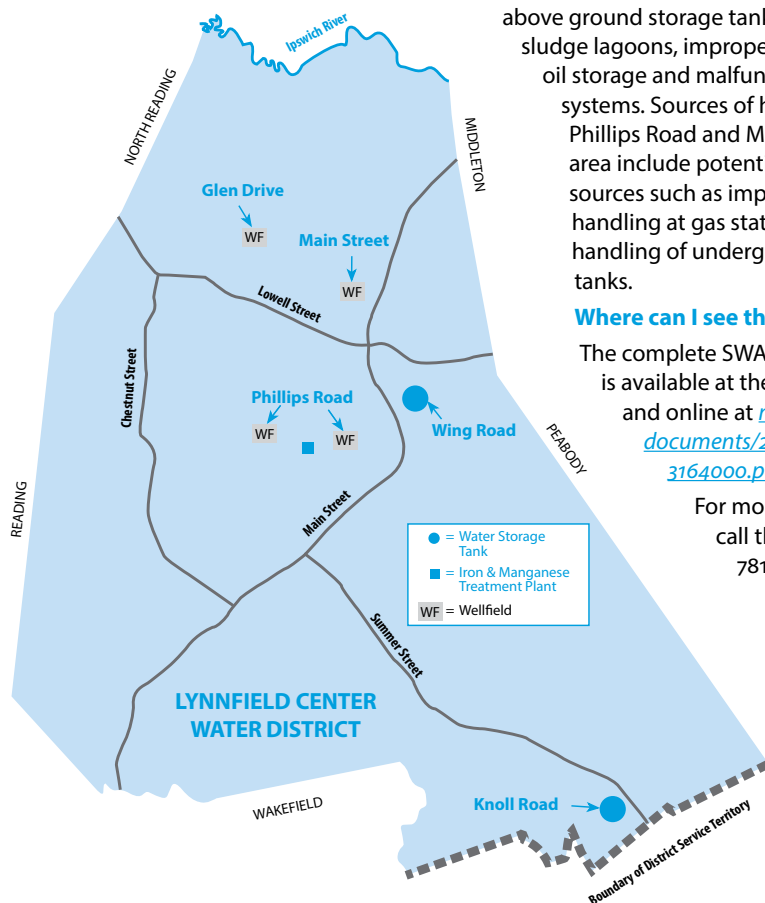
## Water System's Susceptibility

The wells for the LCWD are located within water supply protection areas. The primary recharge areas for the wells are predominantly forested and residential, with a small amount of recreational land use. The SWAP ranks susceptibility of wells by determining the presence of contamination threats within the well recharge areas. The SWAP ranks the Glen Drive wellfield susceptibility as moderate since there is at least one moderate threat land use within the recharge area, and the Phillips Road and Main Street wells susceptibility as high since there is at least one high threat land use within the recharge area. Sources of moderate threats in the Glen Drive recharge area include potential contamination sources such as over-fertilization at golf courses, residential pesticide use/over-application, above ground storage tanks, water treatment sludge lagoons, improper residential fuel oil storage and malfunctioning septic systems. Sources of high threats in the Phillips Road and Main Street recharge area include potential contamination sources such as improper fluid and fuel handling at gas stations and improper handling of underground storage tanks.

## Where can I see the SWAP Report?

The complete SWAP report is available at the LCWD and online at [mass.gov/files/documents/2016/08/ou/3164000.pdf](https://www.mass.gov/files/documents/2016/08/ou/3164000.pdf)

For more information, call the LCWD at 781-334-3901.



## What can be done to improve protection?

The LCWD implements the following recommendations on an ongoing basis.

### Residents can help protect sources by:

- Practicing good septic system maintenance.
- Supporting water supply protection initiatives at Town meetings.
- Taking hazardous household chemicals to hazardous materials collection days.
- Contacting the water department or Board of Health to volunteer for monitoring or education outreach to schools.
- Limiting pesticide and fertilizer use.

### The SWAP report recommends:

- Educating residents on proper disposal of hazardous materials.
- Providing residents with information on environmentally friendly household products.
- Educating residents on septic system care.
- Educating residents on environmentally sound lawn care.
- Providing residents with educational materials on proper storage of liquid petroleum products in above ground storage tanks.
- Monitoring progress on ongoing remedial action conducted for known oil or hazardous material contamination sites.
- Developing a land acquisition plan.
- Coordinating efforts with local officials in North Reading and Peabody to compare existing controls.
- Developing and implementing an inspection program for facilities that generate, use, store, or dispose of hazardous/toxic materials.

## Vulnerability

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 provider. EPA/Center for Disease Control 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](tel:1-800-426-4791).

## How the LCWD Treats Your Water

**For All of Our Well Sources: Sodium hypochlorite (chlorine)** is added in the treatment process and as a disinfectant to kill any germs that may be in the water and to ensure that the water in the distribution system remains safe to drink. **Fluoride** is added to the water to reduce the incidence of dental cavities, particularly in children.

## Important Health Information

**Nitrate:** Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby 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.

**Lead:** 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 LCWD 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 1-800-426-4791](tel:1-800-426-4791) or found at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## Required Watering Restrictions – Current Level 3

The LCWD maintains a year-round watering restriction schedule with five levels as mandated by the MassDEP and the LCWD's Water Management Act Withdrawal permits.

The restrictions also help ensure that the LCWD can maintain proper water pressure in order to meet potential fire fighting demands. Updates can be found on the LCWD website.

Level	LCWD Water Use Restrictions   VISIT: <a href="http://www.lcwd.us/your-water/year-round-water-ban">www.lcwd.us/your-water/year-round-water-ban</a>
1	<b>Normal Winter Conditions</b> – October 1 through April 30. No water use restrictions
2	<b>Seasonal Water Use Restriction</b> – May 1 through September 30 Outdoor lawn and garden watering allowed beginning at 8 PM and ending at 6 AM
3	<b>Outdoor lawn and garden watering allowed</b> – Two days per week Tuesday and Saturday beginning at 8 PM and ending at 6 AM
4	<b>Outdoor lawn and gardening watering allowed by handheld hose and cans only</b> – No NON-ESSENTIAL water use
5	<b>Drought or Emergency Condition</b> – No outdoor water use at any time

## Viruses and Our Treatment

Through the treatment process for LCWD's drinking water system, disinfection is a strong barrier against viruses (including the COVID-19 virus) to ensure the safety of the final product to our customers. The LCWD uses chlorine to inactivate viruses and maintain a consistent chlorine residual throughout the distribution system.

## Customer Views Welcome

To learn more about the water supply system, water quality, and other related information, please call the LCWD at 781-334-3901. The LCWD's Board of Commissioners typically meet at least twice per month on Mondays starting at 7:00 p.m. in the Maney Room, Town Hall. Meetings are posted, agenda and minutes are always placed on the website. This, along with additional information regarding daily operations, budgets and rates, project and other customer service related items can all be found on the website by visiting [www.LCWD.us](http://www.LCWD.us) or by contacting the office by email at [LCWD@LCWD.us](mailto:LCWD@LCWD.us).



Visit us at: [www.LCWD.us](http://www.LCWD.us)

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