

2019 Annual Drinking Water Quality Report

For
Town of Sterling Water Department
Sterling, Massachusetts
PWS ID # 2282000

This report includes water quality data for 2019. In 2020, as we continue to serve the residents of Sterling, our goal is to provide our customers with high quality drinking water that meets all state and federal standards for quality and safety. We have made significant investments in infrastructure repair and testing. The Massachusetts Department of Environmental Protection (MassDEP) periodically inspects our water system for its technical, financial and managerial capacity to provide safe drinking water to you. A DEP Sanitary Survey was conducted in 2019. Suggestions were made regarding paperwork and have been addressed. A second master meter was approved and installed in West Sterling as added protection against pump overrun. To ensure that we provide the highest quality of water available, the Sterling Water Department has three Massachusetts certified water operators who oversee the routine operations of the system.

I. PUBLIC WATER SYSTEM INFORMATION

Address: *171 Worcester Road, Sterling, MA 01564-0537*

Contact Person: *Paul Lyons, Assistant Superintendent*

Telephone #: *978-422-6767 ext. 2005* **Fax #:** *978-422-0168*

E-mail Address: *plyons@sterling-ma.gov*

Internet Address: *www.sterling-ma.gov/Pages/SterlingMA_DPW/water*

Where Does My Drinking Water Come From?

Your water is provided from six groundwater sources: Wells #2A, 2B and 2C are located at Pump Station 2 on Worcester Road/Rt. 12. Wells #3, 4, and 5 are located at the West Sterling Pump Station on Redemption Rock Trail. We also have three remote storage tanks to help maintain even pressure throughout the system. In emergencies, we have the ability to pull from Leominster or West Boylston.

Is My Water Treated?

To improve the quality of the water delivered to you, we treat it to remove several contaminants.

- *We disinfect the water system with ultraviolet light to keep it free of coliform bacteria and microorganisms. If for some reason the UV fails, we are equipped with a chlorine backup system.*
- *We also run trace amounts of chlorine during the summer for added protection per the suggestion of the DEP*
- *We chemically treat the water with potassium hydroxide to maintain pH and to reduce lead and copper concentrations.*

The Sterling Water Department and MassDEP help to determine the effectiveness of existing water treatment and constantly monitor the water quality of our system.

Water System Improvements

In 2019 various infrastructure maintenance and administrative tasks were performed. Flushing was completed. One well was redeveloped. The U.V. disinfection system at West Sterling and Route 12 were serviced.

II. SOURCE WATER PROTECTION

MassDEP has prepared a Source Water Assessment and Protection (SWAP) Report for the water supply sources serving this water system. A susceptibility ranking of **High** was assigned to this system using the information collected during the assessment by MassDEP. The Sterling Water Department also has an updated Source Water Protection Plan. Both documents are available at the Water Department office. The SWAP Report is also

available online at www.mass.gov/dep/water/drinking/2282000.pdf. Although it does not contain information specific to the new Worcester Road wells, it gives an overview of the source protection needs for that location.

What Are the Key Issues For Our Water Supplies?

The SWAP Report and Source Water Protection Plan identify the key issues for protecting the Zone I and Zone II areas around our wells from potential contamination. Sterling's Water Department has been commended by MassDEP for taking an active role in promoting source protection measures. Some threats in Zone II areas are: auto repair shop, gas stations, paint shop, recycling, and underground storage tanks. Stormwater runoff is always an issue. We must all remain vigilant in our efforts to control what ends up in stormwater before it enters our streams, lakes, and wetlands. Anything you put in the ground can possibly end up in the drinking water system.

To Improve Protection, the SWAP Report and Source Water Protection Plan recommend:

- *Removing all non-water supply activities from the Zone I, a 250- to 400-foot radius around each well.*
- *Storing pesticides, fertilizers, or road salt outside the Zone I.*
- *Keeping any new non-water supply activities out of the Zone I.*

Our Public Water System Plans to Address the Protection Recommendations by:

- *Educating residents on best management practices for protecting water supplies*
- *Promoting best management practices (BMPs) for stormwater management and pollution controls*

Residents Can Help Protect Sources by:

- *Practicing good septic system maintenance.*
- *Supporting water supply protection initiatives.*
- *Taking hazardous household chemicals to hazardous materials collection days.*
- *Limiting use of pesticides, fertilizers, and other household chemicals.*

III. SUBSTANCES THAT MAY BE FOUND IN DRINKING WATER

In order to ensure that tap water is safe to drink, MassDEP and the U.S. Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

All 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 EPA's Safe Drinking Water Hotline (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 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. Contaminants that may be present in source water include:

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 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 -which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

Organic chemical contaminants -including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants -which can be naturally occurring or be the result of oil and gas production and mining activities.

IV. IMPORTANT DEFINITIONS

Maximum Contaminant Level (MCL) – The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment 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. MCLGs allow for a margin of safety.

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

90th Percentile – Out of every 10 sites sampled, 9 were at or below this level. This number is compared to the action level to determine compliance for lead and copper.

ND = not detected

ppm = parts per million, or milligrams per liter (mg/l)

ppb = parts per billion, or micrograms per liter (ug/l)

PCi/l = picocuries per liter (a measure of radioactivity)

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

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.

Unregulated Contaminants -- These are substances for which there are no established federal 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 warranted.

V. WATER QUALITY TESTING RESULTS

The water quality results presented in the following tables are from 2019 or the most recent round of testing done in accordance with the drinking water regulations and our MassDEP sampling schedule.

We currently take 17 bacteria samples per month: nine routine samples within the distribution system, two samples at the plant tap, and six raw water samples.

Bacteria in 2016	Highest # Positive Samples in a Month	MCL	MCLG	Violation (Y/N)	Possible Sources
Total Coliform	2	0	0	N	Naturally present in the environment
E.Coli	2	*	0	Y	Human and animal fecal waste

* Compliance with the fecal coliform/E.coli MCL is determined upon additional testing.

	Dates Collected	90th Percentile	Action Level (AL)	MCLG	# of Sites Sampled	# of Sites Above AL	Possible Sources
Lead (ppb)	9/18/18	22	15	0	20	3	Corrosion of household plumbing systems
Copper (ppm)	9/18/18	0.39	1.3	1.3	20	0	Corrosion of household plumbing systems

Regulated Contaminants	Dates Collected	Highest Detect	Range	Highest Source Average	MCL	MCLG	Violation (Y/N)	Possible Sources
Inorganic Contaminants								
Nitrate (ppm)	5/21/19	2.93	.03-2.93	---	10	10	N	Runoff from fertilizer; leaching from septic tanks, natural deposits
Barium (ppm)	4/17/18	.045	---	---	2	2	N	Erosion of natural deposits
Perchlorate (ppb)	9/15/19	0	.05-.10	0	2	0	N	Fireworks, blasting agents
Radioactive Contaminants								
Gross Alpha (pCi/l)	9/15/17	4.1	ND - 4.1	1.65	15	0	N	Erosion of natural deposits
Radium 226 & 228 combined (pCi/L)	5/8/2014	2.13	2.13	2.13	5	0	N	Decay of natural and manmade deposits

Unregulated and Secondary Contaminants	Dates Collected	Highest Detect	Average	SMCL	ORSG	Possible Sources
Sodium (mg/l)	2/12/19	58.96	48.07	----	20	Natural sources; runoff from roadway salt; by-product of treatment process
Sulfate (ppm)	11/20/19	135.8	82.9	250	----	Natural sources
Iron (ppm)	5/18/19	68	20	300	---	Naturally occurring; corrosion of cast iron pipes
Manganese (ppm)	5/18/19	80	37	50	---	Erosion of natural deposits
Radon (pCi/l)	6/08	1500	1333	---	10,000	Natural sources

VI. COMPLIANCE WITH DRINKING WATER REGULATIONS

The Sterling Water Department passed testing for lead and copper in the third quarter 2019 at Chocksett and Houghton Schools. Currently three home sites tested above the MCL for lead. Tested homes were built between 1983-1985 when at that time lead core solder was allowed for interior plumbing. The Water Department sampling for the schools were taken at the bubbler and kitchen at the respective schools for lead. The results were Chocksett bubbler 0.002, kitchen 0.006. The Houghton bubbler <0.001, kitchen 0.002 with an action level .015. Our system exceeded the lead action level for third quarter 2019 with three homes over the .015 level. An informational brochure is attached and available on our website www.sterling-ma.gov. Tetrachloroethylene (PCE) testing showed < .50 mcl is 5. We are required to certify to MassDEP within 90 days of the end of the monitoring period that Consumer Notices were delivered to participants of our lead and copper sampling program. Testing for VOC's (Volatile Organic Contaminant) in 2019 results no violation. Testing for SOC's (Synthetic Organic Contaminant) in 2019 results were satisfactory. Testing for PCE's none detected. Haloacetic Acids and Trihalomethanes are byproducts of chlorinating. Testing showed Haloacetic Acids N/D and Trihalomethanes at 16 with a mcl of 80.

VII. EDUCATIONAL INFORMATION

Vulnerable Populations: 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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on lowering the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Lead: If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Sterling Water Department 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 or at <http://www.epa.gov/safewater/lead>.

Manganese: The EPA has established a lifetime health advisory (HA) value of 0.3 ppm for manganese to protect against concerns of potential neurological effects, and a one-day and 10-day HA of 1 ppm for acute exposure.

However, it is advised that for infants younger than 6 months, the HA of 0.3 ppm be used even for an acute exposure of 10 days.

Perchlorate: This inorganic contaminant interferes with the normal function of the thyroid and thus has the potential to affect growth and development, causing brain damage and other adverse affects, particularly in fetuses and infants. Pregnant women, the fetus, infants, children up to the age of 12, and people with hypothyroid condition are particularly susceptible to perchlorate toxicity.

Radon: Radon is an odorless, tasteless gas that occurs naturally from the breakdown of uranium in soil. Radon can move up through the ground and into a home through cracks in the foundation. It can also get into indoor air when released from tap water. The current guidance for radon in drinking water in Massachusetts is 10,000 picocuries per liter (pCi/l). Typically this would result in an increase of 1 pCi/l to the air inside the home. US EPA currently advises people to take action if the total level of radon in their household air is above 4 pCi/l. Breathing in radon gas over a long period of time can increase your risk of getting lung cancer. Drinking tap water containing high amounts of radon may increase your chances of developing stomach cancer. For more information about radon, contact the EPA at 1-800-767-RADON.

VIII. ADDITIONAL INFORMATION

Cross Connection Control Program

A cross connection is a connection between a potable water source and a non-drinkable source.

The Sterling Water Department implements a cross connection control program for all industrial, commercial, municipal and institutional facilities. We have a certified backflow device tester and cross connection surveyor on our staff, and all surveying and testing is performed in accordance with the cross connection section (310 CMR 22.22) of the Massachusetts Drinking Water Regulations. A complete updated survey was performed in 2016. In the near future we plan to implement testing of all residential irrigation systems.

Residents should be aware that pollution can come from their own homes through residential cross connections. For instance, if you were planning to spray fertilizer on your lawn, you might hook up your hose to the sprayer that contains the fertilizer. If the water pressure were to drop because of a water main break or fire hydrant use in town, the fertilizer could 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 Sterling Water Department recommends that homeowners install backflow prevention devices, such as low-cost hose bib vacuum breakers, for all inside and outside hose connections. You can purchase them at a hardware 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 our town.

Meter Program

The Sterling Water Department installed new AMI meters in 2018 which replaces older meters that have become inaccurate. The new AMI meters help control water loss issues and save manpower and pollutants as a result of an in office read system capability as compared to physically going to each specific location in which to read the meter.

Water Conservation

We have a mandatory water ban in effect beginning on May 1st and ending on September 30th. In addition, because of high lawn watering use we are asking that lawn watering be done on an odd-even basis. So we ask everyone to please conserve water.

Financial Outlook

We did see an increase in costs for Potassium Hydroxide (KOH) and testing. We will continue to do as much as we can to make sure our operations are as cost-effective as possible while ensuring compliance with all state and federal requirements for safe drinking water. The water dept. had to increase rates on high end users in 2014 to help mitigate future costs for overdrawing our withdrawal permit.

Opportunities for Public Participation

If you would like to participate in discussions regarding your water quality, you may attend the regular Board of Public Works meetings. These meetings occur on the second and fourth Tuesdays of each month at the Department of Public Works, 171 Worcester Road, Sterling MA. The public is welcome. Additional copies of this report are available on request.

STERLING WATER CUSTOMERS

IMPORTANT INFORMATION ABOUT LEAD IN DRINKING WATER

Why am I receiving this brochure? STERLING WATER DEPARTMENT found elevated levels of lead in drinking water in some homes/buildings during the MONITORING PERIOD 6/1/2019 to 9/30/2019. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.

US EPA and the Massachusetts Department of Environmental Protection (MassDEP) require public water systems that exceed the lead action level to provide this notification to consumers. Lead is a health concern and is commonly found in the environment; most commonly in lead based paint. Lead can also be found in water, though at much lower levels.

Health Effects of Lead

Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is in infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

Sources of Lead

Lead is a common metal found in the environment. Common sources of lead exposure are lead-based paint, household dust, soil, and some plumbing materials and fixtures. Lead can also be found in other household items such as pottery, makeup, toys, and even food. Lead paint was outlawed in 1978, but dust from homes that still have lead paint is the most common source of exposure to lead. Therefore, make sure to wash your children's hands and toys often as they can come into contact with dirt and dust containing lead.

The water provided by STERLING WATER DEPT. is lead-free when it leaves the well. Local distribution pipes that carry the water to your community are made mostly of iron.

and steel, plastic and transite and therefore do not add lead to water. However, lead can get into tap water through lead piping, lead solder used in plumbing, and some brass faucets and fixtures. You cannot see, taste, or smell lead in the water. Even though the use of lead solder was banned in the U.S. in 1986, it still might be present in older homes.

The corrosion or wearing away of these lead-based materials can add lead to tap water, particularly if water sits for a long time in the pipes before use. Therefore, water that has been sitting in household pipes for several hours, such as in the morning, or after returning from work or school, is more likely to contain lead. If high levels of lead are found in drinking water, water may typically contribute up to 20 percent of a person's exposure to lead. However, infants who consume mostly formula, mixed with lead containing water, can receive up to 60 percent of their exposure from water.

Steps You Can Take to Reduce Exposure to Lead in Drinking Water

Listed below are steps that you can take to reduce your exposure to lead and copper in drinking water:

- **Run your water to flush out lead. Fresh water is better than stale:** If your water has been sitting for several hours, run the water until it is consistently cold this usually takes about 15-30 seconds-before drinking or cooking with it. This flushes water which may contain lead from pipes. Run water for 5 minutes if you have a lead service line or any lead pipes in your home plumbing.
- **Use cold, fresh water for cooking and preparing baby formula:** Do not cook with or drink water from the hot water tap. Lead dissolves more easily into hot water. Do not use water from the hot water tap to make baby formula.
- **Do not boil your water to remove lead or copper. Boiling water will not reduce lead.** Excessive boiling of water makes the lead and copper more concentrated - the lead and copper remains when the water evaporates.
- **Identify and replace plumbing fixtures containing lead or lead solder.** Brass faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. The law previously allowed end-use brass fixtures, such as faucets, with up to 8 percent lead to be labeled as "lead free." As of January 4, 2014, end-use brass fixtures, such as faucets, fittings and valves, must meet the new "lead-free" definition of having no more than 0.25 percent lead on a weighted average. If you are concerned about lead in tap water, you should consider buying a low-lead or no-lead fixture. Contact [NSF](#) to learn more about lead-containing plumbing fixtures and how to identify lead-free certification marks on new fixtures.
- **Find out if your home/building has a lead service line and make arrangements to remove it.**
- **Test your home for lead:** The only way to determine the level of lead in drinking water at your home is to have the water tested by a state certified laboratory. The

cost to test is usually between \$10 and \$50 . Consider having your paint tested also. A list of labs is available online at

<http://eeaonline.eea.state.ma.us/DEP/Labcert/Labcert.aspx> or you can call MassDEP at 978-682-5237 or e-mail Labcert@state.ma.us. You may also contact us at 978-422-6767 to find out how to get your water tested for lead and copper.

- **Consider alternative sources or treatment of water.** If your water contains lead you may want to consider purchasing bottled water or a water filter. If considering a filter read the package to be sure the filter is approved to reduce lead or contact NSF International at 800-NSF-8010 or www.nsf.org for information on performance standards for water filters. Be sure to maintain and replace a filter device in accordance with the manufacturer's instructions to protect water quality. Also, if you are considering using bottled water, note that it may cost up to 1,000 times more than tap water. Simply flushing your tap, as described above, is usually a cheaper and equally effective alternative
- **Contact your health care provider or your local health department to find out if your child needs to be tested for lead.** A blood lead level test is the only way to know if your child is being exposed to lead. For more information on Massachusetts' childhood lead testing program, contact the Department of Public Health (DPH) at <http://www.mass.gov/orgs/childhood-lead-poisoning-preventionprogram> or at 1-800-532-9571.
- **If you have health concerns,** please contact your health care provider with any questions.

Additional Information on Lead content in plumbing materials- Prior to 2014, plumbing materials like faucets that contained up to 8% of lead were deemed "lead free". In 2011, Congress has enacted a legislation prohibiting the use and introduction into commerce, among other plumbing materials, of any faucets that contain more than a weighted average of 0.25% lead based on wetted surfaces of pipes, fittings and fixtures, like faucets. The link below will help you identify the marks on products that are certified as "lead free" by a third-party certification body:

Brochure: How to Identify Lead Free Certification Marks for Drinking Water System & Plumbing Products

Why are there elevated levels of lead in the drinking water and what is being done to reduce the levels ?

The water provided by The Sterling Water Dept is lead-free when it leaves the well. However, lead can get into tap water through lead service lines, lead solder used in plumbing, and some brass fixtures.

- ✓ Sterling Water Dept is concerned about lead in your drinking water. We have both an extensive testing program and have treated the water to make it less corrosive. Although most homes have very low levels of lead in their drinking water, some homes may still have lead levels above the EPA and State Action Level of 15 parts per billion (ppb).
- ✓ To monitor lead levels Sterling Water Dept tests tap water in homes that are most likely to have lead. These homes are usually older homes that may have lead service lines or lead solder, and they must be tested after water has been sitting overnight. The EPA rule requires that 90% of these worst case samples must have lead levels below the Action Level of 15 ppb.
- ✓ Sterling Water Dept treats your water to make it less corrosive, thereby reducing the leaching of lead into drinking water. Starting in the 1980's, Sterling Water Dept. has added potassium hydroxide to increase the pH and buffering capacity of the water], and has steadily fine-tuned these levels since corrosion control treatment began.

Due to this treatment change, lead levels found in sample tests of tap water have dropped over the last 10 years, The Sterling Water Dept service area has been below the Lead Action Level since 2014. Because lead levels in home plumbing can vary, individual communities may occasionally have higher test results.

- ✓ To monitor lead levels, Sterling Water Dept tests tap water in homes that are most likely to have lead. These homes are usually older homes that may have lead service lines or lead solder, and they must be tested after water has been sitting overnight. The EPA rule requires that 90% of these worst case samples must have lead levels below the Action Level of 15 ppb.

Please share this information on LEAD with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

FOR MORE INFORMATION

Call us at 978-422-6767 or visit our website at www.sterling-ma.gov/home/news/lead-and-copper-testing-completed to find out what else we are doing about lead, such as home testing kits or a lead service line replacement program.

For more information on reducing lead exposure around your home/building and the health effects of lead, visit:

- EPA's website at <http://www.epa.gov/lead>, or call the EPA lead hotline at 1-800-424-5323
- MassDEP's website at <https://www.mass.gov/service-details/is-there-lead-in-my-tapwater>
- Department of Public Health's website at <https://www.mass.gov/orgs/childhood-lead-poisoning-prevention-program>

Sterling Water Dept
2282000
171 Worcester Road
Sterling, MA 01564
978-422-6767

Date of mailing or posting: 10/16/2019

The town of Sterling continues to monitor and treat to keep ph at 7.5 to stop corrosion of copper pipes and lead solder in household plumbing. We are now adding testing for alkalinity. We will be doing monthly water quality parameters at distribution sites that we use for coliform bacteria testing as well as daily testing of ph at treatment sites at source locations in West Sterling and Route 12 wells.