

22nd Annual Water Quality Report

2019

sudburywater.com



Additional copies of this report are available at our business office:

199 Raymond Road Hours of operation (8 a.m. - 4 p.m., M-F)

For more information about how Sudbury Water District maintains the safety of your drinking water, and to view previous years' reports go to

www.sudburywater.com/my-water/water-quality

TABLE OF CONTENTS

CLOSING AND WEBSITE INFORMATION

	1
LETTER FROM THE EXECUTIVE DIRECTOR	2
WHY AM I RECEIVING THIS REPORT?	
WHO DO I CONTACT IF I HAVE CONCERNS ABOUT MY LOCAL DRINKING WATER?	
ARE THERE OPPORTUNITIES FOR PUBLIC PARTICIPATION?	
	3
DISTRIBUTION SYSTEM	
YOUR DRINKING WATER SOURCE	
	4
IS MY WATER TREATED?	
HOW ARE THESE SOURCES PROTECTED?	
SUBSTANCES FOUND IN DRINKING WATER	
	5
FURTHER INFORMATION CONCERNING SAFE DRINKING WATER	
MINIMIZING LEAD EXPOSURE	
	6
CROSS CONNECTION CONTROL PROGRAM	
	7
WATER CONSERVATION	
	8
IMPROVEMENTS TO THE WATER DISTRIBUTION SYSTEM	
FUTURE PROJECTS FOR 2020	
	9
What does this data represent?	
REGULATED CONTAMINANTS	
	10
UNREGULATED CONTAMINANTS	
	11
SECONDARY CONTAMINANTS	10
	12



Dear Resident,

The Sudbury Water District is once again proud to report that water delivered to you has met or exceeded all Federal and State drinking water standards. This year's Water Quality Report includes all water testing from January through December 2019 as well as other important information concerning your drinking water.

We are dedicated to the planning, operations and maintenance necessary for producing and delivering high quality drinking water for all household, commercial, and community needs. We strive to serve the community in a courteous, efficient, and environmentally sustainable manner. We are passionate about our work and try to instill our values of integrity, professionalism, and teamwork in everything that we do.

While maintaining water quality is critical and is our top priority, other issues such as service reliability, adequacy of supply, preparing for future growth, protecting our water supply, conservation and holding water rates down are also of key importance. We encourage you to take time to look over this report. If you have any further questions, or would like additional copies of this report, please contact our office at (978) 443-6602.

Sincerely.

Vincent I. Roy

Executive Director Sudbury Water District 199 Raymond Road Sudbury, MA 01776

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Raymond Road Administration Facility Improvement Project

This is a right-to know report required to be sent to you in accordance with the Federal Safe Drinking Water Act Public Law 104-182, Section 141(c)(4).

WHY AM I RECEIVING THIS REPORT?

In 1996 the Federal Safe Drinking Water Act mandated all community drinking water systems to prepare and distribute annually to their customers Consumer Confidence Reports (CCR's). In compliance with these regulations the Sudbury Water District is pleased to present our 22nd annual Water Quality Report; a snapshot of the drinking water quality provided to you last year. Included are important details about where your water comes from, what it contains and how it compares to state and federal standards.



WHO DO I CONTACT IF I HAVE CONCERNS ABOUT MY LOCAL DRINKING WATER?



Sudbury Water District is staffed by seven field personnel and three office staff, all of whom are dedicated to bringing into your home the highest quality of drinking water. Office and field personnel are available weekdays between 8 a.m. and 4 p.m., to meet and address public supply needs. Questions or concerns about your drinking water? Contact (978) 443-6602 during regular business hours or visit our website www.sudburywater. com. A useful and informative tool updated regularly to include our most recent water quality tests, answers to frequently asked

questions, explanations of rates, fees and links to pay your water bill online or to register to receive emergency alert notifications. Executive Director, Vincent Roy is also available during regular business hours by phone (978) 443-6602 or email him directly at vroy@sudburywater.com. Though office hours are limited, the District always has an experienced field technician on-call, 365 days a year, for emergency and after-hour matters. Should you experience or observe a water emergency after business hours simply contact the Department of Public Safety (978) 443-1042 who will dispatch an on-call water technician to address the matter.

ARE THERE OPPORTUNITIES FOR PUBLIC PARTICIPATION?

In response to the coronavirus outbreak and to support the health and safety of the Sudbury community and our staff Sudbury Water District has temporarily closed our administration building to public access. Our Board greatly values the public participation in the meeting process and will continue to welcome public participation utilizing remote access technology to conduct our meetings. Bi-Weekly Commissioners meeting will be held virtually at 5 p.m. to discuss and vote on issues concerning your drinking water supply. You are invited to participate remotely in this public forum and become more knowledgeable about your drinking water as well as bringing your concerns to the attention of the Commissioners and the Executive Director. View our meeting schedule online at www.sudburywater.com or call (978) 443-6602 to obtain scheduled meeting dates.



DISTRIBUTION SYSTEM

The distribution system consists of 6,100 service connections. The distribution system includes approximately 147 miles of water main (pipe) throughout the Town.

The District relies on four (4) ground level storage facilities that combine for a total capacity of 6.3 MG. Two storage tanks located on Willis Hill provide a significant majority of the overall capacity. A 1.0 MG storage tank is located at the end of Bigelow Drive, and a 0.3 MG tank is located on Goodman Hill (depicted in above photo).

Distribution storage serves to maintain system pressure by supplying local water demands during periods of peak consumption. It helps to meet hourly demand fluctuations, minimizing changes in flow rates through supply sources. Storage helps to meet required fire flows and it provides a volume of water for other emergencies such as a pipeline break or mechanical equipment malfunction. Storage, when properly located, helps to equalize pressures throughout the system. It is necessary to maintain storage levels as near to full as possible in order to maintain maximum available pressure in the distribution system, and to maximize fire flow availability. However, it is also important to allow the tank levels to fluctuate to minimize stagnant conditions and maintain water quality.

YOUR DRINKING WATER SOURCE

Sudbury's water is obtained from nine gravel packed ground wells located in three separate aquifers; these aquifers are known as Raymond Road, Hop Brook and Great Meadow. We also have four storage tanks located throughout Town with a storage capacity ranging from 0.35 to 3.0 million gallons and totaling 6.35 million gallons. Your water is provided by the following sources:

Source Name	Mass DEP Source ID #	Source Type	Location of Source
GP Well No 2A	3288000-02G	Groundwater	Raymond Road Aquifer
GP Well No 3A	3288000-11G	Groundwater	Hop Brook Aquifer
GP Well No 4	3288000-04G	Groundwater	Raymond Road Aquifer
GP Well No 5	3288000-05G	Groundwater	Great Meadow Aquifer
GP Well No 6	3288000-06G	Groundwater	Raymond Road Aquifer
GP Well No 7	3288000-07G	Groundwater	Raymond Road Aquifer
GP Well No 8A	3288000-12G	Groundwater	Hop Brook Aquifer
GP Well No 9	3288000-09G	Groundwater	Hop Brook Aquifer
GP Well No 10	3288000-10G	Groundwater	Pratt's Mill Road

IS MY WATER TREATED?

Our water system makes every effort to provide you with safe and pure drinking water. To improve the quality of the water delivered to you, we treat it to remove several contaminants:

We add disinfectant to protect you against microbial contaminants; we add fluoride to the water to aid in dental health and hygiene; we aerate and filter the water to remove volatile organic contaminants; we filter the water to reduce levels of iron and manganese and we chemically neutralize the water.

As there are variations in the water quality among our nine sources, treatment systems are designed to specifically address the type and amount of contaminants present at each site. Following treatment, water is pumped



to elevated storage tanks for distribution to your home. When tanks are full, the pumps at the wells shut off and water is fed to customers from the tanks. As soon as demand brings tank levels to the "start" level, the pumps restart and the cycle begins again. In order to perform scheduled and emergency maintenance operations, the specific wells selected to be in service at any time will vary. Therefore the water delivered to your home does not necessarily originate at a single point but rather is a blend of a number of our wells.

HOW ARE THESE SOURCES PROTECTED?

In 2002 the DEP prepared a Source Water Assessment Program (SWAP) Report for our water supply source(s). This report assesses the susceptibility of public water supplies: The Zone I for our wells is a 400 foot radius around the wellhead. Massachusetts Drinking Water Regulations (310 CMR 22.00 Drinking Water) requires public water suppliers to own or control the Zone I through a conservation restriction. Only water supply activities are allowed within the Zone I. However many public water supplies were developed prior to the DEP's regulations and contain non-water supply activities such as homes, recreation fields and public roads. All of our wells are located in aquifers with a high vulnerability to contamination due to the absence of hydro-geologic barriers (clay) that can prevent contamination migration. The Zone IIs for Sudbury are a mixture primarily of residential, forest and wetlands land uses with a small portion consisting of other uses such as recreation, agriculture, commercial, light industry. The District employs corrective actions by continuing to work with local and state offices for the promotion of good practices on land contained within our Zone I and Zone II areas. The DEP has commended the District for taking an active role in promoting source protection measures in the water supply protection areas through: Adopting land use controls that meet the DEP's Drinking Water Regulations and partnering with the Town of Sudbury to study the feasibility of sewering

SUBSTANCES FOUND IN DRINKING WATER

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. It 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, may come from sewage and treatment plants, septic systems, agricultural livestock operations and wildlife. Inorganic contaminants, such as salts and metals can be naturally occurring or resulting from urban storm water 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 storm water runoff and residential uses. Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial process and petroleum production and may also come from gas stations, urban storm water runoff and septic systems. Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

FURTHER INFORMATION CONCERNING SAFE DRINKING WATER

In order to ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The 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.

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) contain guidelines on lowering the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800) 426-4791.

MINIMIZING LEAD EXPOSURE

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. Sudbury Water District is responsible for providing high quality drinking water, but cannot control the variety of materials used in residential 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.



CROSS CONNECTION CONTROL PROGRAM

WHAT IS A CROSS CONNECTION?

A cross-connection is an ACTUAL or POTENTIAL link between the potable water supply and a source of contamination (sewage, chemicals, gas, etc.). This has the potential of becoming a hazardous situation if the contaminant source were to enter (backflow) into the potable water. Backflow occurs when the water flow is reversed, due to a change in pressure, and water flows backwards, into and through the system. Contamination can also occur when the pressure in the drinking water system drops due to occurrences such as water main breaks and heavy water demand causing contaminants to be drawn (back-siphonage) into the potable water system.

WHERE DO LEIND CROSS CONNECTIONS?

Garden hoses connected to an outside water tap are the most common sources of cross connections in the home. The garden hose creates a hazard when submerged in non-potable water such as a swimming pool or when attached to a chemical sprayer for weed control. The District surveys all industrial, commercial, and municipal facilities to ensure that all cross connections are eliminated or protected by a backflow prevention device. The District is also responsible for inspecting and testing each device to ensure it is providing maximum protection.

WHAT CAN I DO TO PREVENT BACKELOW?

You can prevent backflow in your home plumbing system by installing an inexpensive hose-bib vacuum breaker on each of your outside water spigots. These vacuum breakers will prevent water from being back-siphoned from a polluted or even contaminated water source into your home's water pipes or the public water distribution system. These devices cost about \$10 and are available at most hardware stores.



WHO SHOULD I CONTACT FOR MORE INFORMATION?

Sudbury Water District staff will be happy to answer your questions. Call (978) 443-6602 or send us an e-mail at customerservice@sudburywater.com.

WATER CONSERVATION





MassDEP has mandated Sudbury Water District to implement restrictions on outdoor water use. Though not popular with many residents, the restrictions are similar to what many neighboring communities are subject to. The purpose of the restrictions is to ensure an adequate supply of water for drinking and fire protection and to protect the quality and quantity of water in local aquatic habitats such as ponds, rivers and wetlands.

By using water more efficiently, you can help preserve water supplies for future generations, save money, and protect the environment. By changing a few habits, you will help protect your water supply and perhaps save on water charges. Here are some outdoor water saving tips that residents can implement in their homes.

- Water your lawn only as needed. Too frequent watering can actually weaken a lawn by encouraging shallow roots. The general rule of thumb is one inch per week including rain.
- Timing is critical for lawn watering. Water your lawn in the early morning or late evening to avoid evaporation.
- Install mulch to keep roots cool and moist. Mulch serves as a ground cover that reduces water evaporation from the soil.
- Keep your blades sharp and high. Raising your lawn mower blade prevents tearing of the grass.
 Longer grass provides shade for the roots and helps reduce water loss.
- Use shut off-nozzles on hoses and automatic shut-off devices on irrigation systems. Unattended hoses can use 10 gallons or more per minute.
- Install a soil moisture sensor complimented with a rain sensor that turns automatic sprinkler systems off when the soil contains sufficient moisture and when it is raining.

IMPROVEMENTS TO THE WATER DISTRIBUTION SYSTEM

Each part of the water system needs routine maintenance in order to maintain a safe and dependable water supply. Listed are some of the projects undertaken by the Water District in 2019.







Well # 4 Renovation Project

- · Completed Raymond Road Administration Facility Improvement Project.
- · Completed Well # 4 Renovation Project.
- Installed 100 feet of D.I. pipe at the Raymond Road Water Treatment Facility for 4Log certification compliance.
- · Conducted a leak detection survey of the entire water system. The survey is necessary to locate and eliminate leaks from the system.
- Replaced 6,200 feet of 8 inch water main on Horse Pond Road with new 12 inch ductile iron (D.I.) pipe.
- · Replaced 1,000 feet of 8 inch water main on Morse Road with new 12 inch ductile iron (D.I.) pipe.
- · Cleaned Well #s 7 and 9
- · Improvements made to the Water GIS Mapping.
- · Implemented new work order system via Sudbury Water District's GIS Mapping System.
- · Started analysis of Water Distribution and Treatment Systems for development of Water Master Plan.
- · Started process to upgrade new billing system software.

FUTURE PROJECTS FOR 2020

- · Complete design plans for telemetry at Bigelow Tank.
- · Replace 900 feet of 8 inch water main on Codjer Lane with new D.I. pipe.
- · Completion of Utility Billing System Software conversion project.
- · Completion of Water System Master Plan.
- · Upgrade Unidirectional Hydrant Flushing Program.

Board of Water Commissioners,

Robert E. Boyd, Jr., Chairman Joshua M. Fox

Robert H. Sheldon

WHAT DOES THIS DATA REPRESENT?

What Does This Data Represent? The water quality information presented in the following table(s) is from the most recent round of testing done in accordance with the 1996 Safe Drinking Water Act Amendments. All data shown was collected during the last calendar year unless otherwise noted.

Regulated Contaminants are those for which the EPA has set legal limits on the levels allowed in drinking water. The limits reflect both the level that protects human health and the level that water systems can achieve using the best available technology.

Lead and Copper Contaminant	Date(s) Collected	90th Percentile	Action Level	MCLG	No of Sites Sampled	No of Sites Above Action Level	Possible Source of Contamination
(1)Lead (ppm)	9/10/19	0.004	0.015	0	30	0	Corrosion of household plumbing systems; Erosion of natural deposits.
(1)Copper (ppm)	09/10/19	0.148	1.3	1.3	30	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.

Inorganic Contaminant	Date Collected	Highest Result or Highest Running Average Detected	Range Detected	MCL or MRDL	MCLG, MRDLG or ORSG	Violation (Yes/No)	Possible Source of Contamination
Arsenic (ppb)	04/10/18	1.1	ND - 1.1	10	_	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium (ppm)	04/10/18	0.0214	0.009 - 0.054	2	2	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Fluoride (ppm)**	Monthly 2019	0.61	0.16-0.61	4	4	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate (ppm)	04/2/19	6.7	0.31-6.7	10	10	No	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits.
Perchlorate (ppb)	07/13/19	0.22	0.11-0.22	2	N/A	No	Rocket propellants, fireworks, munitions, flares and blasting agents.
Sodium (ppm)	04/10/18	63.6	6.7-63.7	_	20	No	Natural sources; runoff from use as salt on roadways; by-product of treatment process.

^{**}Fluoride also has a secondary contaminant level (SMCL) of 2 ppm.

Radioactive Contaminants (Next Sampling due in 2020)	Date Collected	Highest Result or Highest Running Average Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Yes/No)	Possible Source of Contamination
(1)Gross Alpha emitter (pCi/L)	01/31/14	3.0	ND - 3.0	15	0	No	Erosion of natural deposits.
(i)Radium 226 & 228 (pCi/L) (combined values)	02/16/17	1	0.55 - 1	5	N/A	No	Erosion of natural deposits.

Disinfection Byproducts	Date Collected	Highest Running Annual Average	Range	***MCL or MRDL	MCLG or MRDLG	Violation (Yes/No)	Possible Source of Contamination
Total Trihalomethanes (ppb) (TTHMs)	Quarterly 2019	59	12.0 - 98	80	_	No	By-product of drinking water chlorination.
Haloacetic Acids (ppb) (HAA5)	Quarterly 2019	24	10 - 40	60	_	No	By-product of drinking water disinfection.
Chlorine (ppm) (free, total or combined)	Monthly 2019	0.67	0.50-0.67	4	4	No	Water additive used to control microbes.

^{***}Running Annual Average

Unregulated Contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminants monitoring is to assist the EPA in determining their occurrence in drinking water and whether future regulation is warranted.

Unregulated Contaminants	Date(s) Collected	Highest Result Detected	Range Detected	Possible Source of Contamination
Bromodichloromethane (ppb)	Quarterly 2019	32.6	<3.9 – 32.6	Trihalomethane; by-product of drinking water chlorination.
Bromoform (ppb)	Quarterly 2019	1.6	0 - 1.6	Trihalomethane; by-product of drinking water chlorination.
Chloroform (ppb)	Quarterly 2019	51.1	<5.9 – 51.1	A by-product of drinking water chlorination (regulated collectively with total trihalomethanes (TTHMs); in non-chlorinated sources, chloroform may be naturally occurring.
Dibromochloromethane (ppb)	Quarterly 2019	13.9	3.2 – 13.9	Trihalomethane; by-product of drinking water chlorination.

Secondary Contaminants are non-mandatory water quality standards. The EPA does not enforce "secondary maximum contamination levels" or SMCL. They are established only as guidelines to assist public water systems in managing their drinking water for aesthetic considerations such as taste, color and odor. These contaminants are not considered to present a risk to human health at the SMCL.

Secondary Contaminants	Date(s) Collected	Range Detected	SMCL	Indications of Contamination
Hardness (ppm)	07/02/2019	53 - 199	_	Not applicable (No SMCL)
Iron (ppm)	07/02/2019	<0.05 - 2.46	0.3	Rusty color; sediment; metallic taste; reddish or orange staining.
Manganese (ppm)	07/02/2019	<.05 - 1.0	0.05	Black to brown color; black staining; bitter metallic taste.
рН	Daily 2019	7.2 - 8.3	6.5 - 8.5	Low pH: bitter metallic taste; corrosion. High pH: slippery feel; soda taste; deposits.

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

Lead and Copper 90th Percentile: Out of every 10 homes sampled, 9 were at or below this level.

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

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

ND: None Detected —: Not Applicable

Maximum Contamination Level Goal (MCLG): The level of a contamination in drinking water below, which there is no known or expected risk to health MCLGs allow for a margin of safety.

Maximum Contamination 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 Residual Disinfectant (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 (ex. chlorine, chloramines, chlorine dioxide).

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

(1) The data presented in this report is from the most recent testing done in accordance with federal regulations for the lead and copper rule.

We hope you find this report informative, allowing you the opportunity to become familiar with your public water supply. The Board of Water Commissioners and District employee's strive to achieve the highest quality drinking water together with outstanding customer service. We invite your comments and questions regarding the District, its operation and this Annual Quality Report Questions. Comments or concerns may be addressed by contacting (978) 443-6602.

Our system violated drinking water standards over this past year. Even though this was not an emergency, our customers have the right to know what happened and the corrective action has since been taken. On August 15, 2019, the District failed to collect an initial triggered source water sample within 24 hours of notification of total coliform-positive sample as required by 310 CMR 22.26(3)(a). The District has provided the Testing Laboratory with a revised contact listing which includes cell phone numbers. The Laboratory has been instructed to communicate directly with the Executive Director and/or Operations Manager immediately upon confirmation of coliform-positive sample. They have also been directed to send an alert text message to the Executive Director and Operation Manager of the positive sample.

Additional copies of this report will be mailed upon request by contacting the District Business Office at (978) 443-6602 or emailing customerservice@sudburywater.com

For more information about how Sudbury Water District maintains the safety of your drinking water and to view previous years' reports go to:

http://www.sudburywater.com/my-water/water-quality

VISIT OUR WEBSITE FOR THE LATEST NEWS AND INFORMATION ON FLUSHING, WATER RESTRICTIONS, MEETINGS, AND MORE!



FLUSHING

Sudbury Water District flushes hydrants every spring and fall, in an effort to clear water mains of sediment and mineral build up.



RESTRICTIONS

See current restrictions at www.sudburywater.com.



MEETINGS

Meetings are held at 5 p.m. at the Sudbury Water District office, 199 Raymond Road.

PLUS, PAY YOUR BILL ONLINE AT WWW.SUDBURYWATER.COM!

To view current outdoor water restrictions, standards and guidelines please visit: www.sudburywater.com/outdoorwaterrestrictionstandardsandguidelines

