

North Sagamore Water District

2022 Annual Water Quality Report Public Water Supply ID # 4036002

Board of Water Commissioners:

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The North Sagamore Water District holds monthly Commissioner's meetings the third week of each month. The meetings are held at the District Office on 14 Squanto Road, Sagamore Beach, MA and begin at 4:15 pm unless posted otherwise. These meetings are posted publicly and the public is encouraged to participate. Our office is open Monday thru Friday from 7:30am to 4:00pm. Our staff is prepared to answer questions pertaining to billing, metering, water service or any other business of the District. You may also contact our office to report water quality issues, water leaks, fire hydrant matters or any other concerns you may have.

Our water system is routinely inspected by the MA Department of Environmental Protection (DEP). The DEP inspects our system for its technical, financial and managerial capacity to provide safe drinking water to you. To ensure that we provide the highest quality of water available, your water system is operated by Massachusetts certified operators who oversee the routine operations of our system.

In 2022, the District continued the process of locating a new supply well to service the District. Test wells were drilled at locations around Church Lane, Black Pond and Weldon Park. These wells were pumped and tested for contaminants. Results from the test wells show a second well site at Black Pond will be the most viable location for a future public water supply. The District is currently working on permitting this well site. The District has continued to design and plan for the replacement of the Phillips Road water main and the new transmission water main that will be installed from Clark Road to the Norris Road Tank. Construction of these projects will be proposed at our Annual Meeting in April 2023.

Drinking Water Sources

The North Sagamore Water District is currently supplied by three active gravel-packed wells that withdraw our drinking water from the Plymouth/Carver Aquifer. Last year the District pumped 166 million gallons of water from these sources. Black Pond Well (installed in 1979) located on Black Pond Road and Church Lane Well (built in 2001) feed into the James A. Morgan Water Treatment Plant also located on Church Lane. At this location the water is treated with potassium permanganate to oxidize iron and manganese, sodium hydroxide to reduce lead and copper concentrations within the water system and a low dose of sodium hypochlorite to eliminate bacteria throughout the distribution system. The water is then filtered to remove iron and manganese. The Beach Well (installed in 1958) located on Pilgrim Road is treated with sodium hydroxide and a low dose of sodium hypochlorite. The District currently does not have an emergency interconnection with any other district or town. Future connections with neighboring water systems may be possible for a backup supply. The District has three above ground storage tanks, Bournedale Tank (located along the Scenic Highway), Clark Road Tank and Norris Road Tank, with a total storage of 1.7 million gallons of water. The District also operates two booster pumping stations in order to supply increased pressures and flows to certain neighborhoods off of Old Plymouth Road, State Road and Norris Road as well as Weldon Park.

Water Conservation Protects our Natural Resources

Your commitment to conserving our drinking water is greatly appreciated, especially during the outside water use periods of May through September. Non-essential outside watering should be limited to two days a week and done in the early morning or evening hours. Customers with irrigation systems are strongly urged to install rain or moisture gauges on their systems, as most lawns only require one inch of rain weekly. The District has conservation information and tools including rain gauges, shower timers, low-flow hand held hose nozzles and low-flow shower heads available at our office offered at no cost to residents of the District.

Source Water Assessment Program Report

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program Report (SWAP) for the water supply sources serving the North Sagamore Water District. The SWAP Report summarizes the potential sources of contamination within the water supply protection area for the Black Pond Well, Church Lane Well and the Beach Well. A susceptibility rating of high was assigned to this system using the information collected during the assessment by the DEP.

The SWAP report commends the District for:

- Working with the towns of Bourne and Plymouth to protect the public wells
- Conducting public outreach efforts; and

- Purchasing land for water supply protection

The SWAP report recommends these actions to better protect our water sources for the future:

- Continuing to inspect the Zone 1 regularly
- Educate residents on the ways they can help to protect drinking water sources
- Work with emergency response teams to ensure that they are aware of the storm water drainage in your Zones I & II and to cooperate on responding to spills or accidents

The North Sagamore Water District addresses the protection recommendations by increased monitoring of drinking water protection areas and focusing on best management practices to improve our water supply protection. Copies of this report are on file at the District Office and available on our website.

Substances Found in Tap 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, and can pick up substances resulting from the presence of animals or human activity.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of some contaminants does not necessarily indicate that the water poses a health risk.

Contaminants that may be present in source water before treatment 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, can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming. **Pesticides and herbicides** may come from a variety of sources such as agriculture, storm water runoff and residential uses. **Organic chemical contaminants** include synthetic and volatile organic chemicals, 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** can be naturally occurring or be the result of oil and gas production, and mining activities.

In order to ensure that tap water is safe to drink, the Mass DEP and the 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.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone 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 from their health care providers.

Important Definitions

MCLG: Maximum Contaminant Level Goal, or the level of a substance in drinking water which there is no known or expected health risk. MCLG's allow for a margin of safety.

MCL: Maximum Contaminant Level, or the highest level of a substance that is allowed in Drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

AL: Action Level, or the concentration of a contaminant, if exceeded, triggers treatment or other requirements by the District

90th %: Out of 10 homes sampled, 9 of these homes were below this level.

SMCL: Secondary Maximum Contaminant Level, or guidance values issued by US EPA representing levels and parameters above which aesthetic properties of water can be affected (taste, odor, color) or cosmetic effects may occur (skin or tooth discoloration).

ORSG: Massachusetts Office of Research and Standards Guideline 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.

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

ppm: parts per million **ppb:** parts per billion **ppt:** parts per trillion **ND:** not detected **pCi/L:** Picocuries per liter

2022 Water Quality Testing Results

Organic Contaminants

Contaminant	MCL	MCLG	Highest Detected Level	Range of Levels	Sample Dates	Major Sources
Tetrachloroethylene (ppb)	5	0	ND	ND	3/8/2022	Discharge from asbestos cement lined pipes

Radioactive Contaminants

Contaminant	MCL	MCLG	Highest Detected Level	Range of Levels	Sample Dates	Major Sources
Gross Alpha Particles (pCi/L)	15	0	2.25	1.01 – 2.25	10/14/2021	erosion of natural deposits
Combined Radium (pCi/L)	5	0	0.70	0.58 – 0.70	10/14/2021	erosion of natural deposits

Inorganic Contaminants

Contaminant	MCL	MCLG	Highest Detected Level	Range of Levels	Sample Dates	Major Sources
Nitrates (ppm)	10	10	2.13	0.19 – 2.13	5/12/2022	run off from fertilizer use, septic systems
Perchlorate (ppb)	2	N/A	0.19	0.06 – 0.19	8/18/2020	fireworks, munitions, flares
Barium (ppm)	2	2	0.034	0.034	6/18/2018	discharge of drilling wastes, erosion of natural deposits
PFAS6 (ppt)	20	N/A	3.18	ND – 3.18	1/24, 4/12, 7/13/2022	discharges and emissions from industrial and manufacturing sources

Disinfectants and Disinfection By-Products

Contaminant	MCL	MCLG	Highest Detected Level	Range of Levels	Sample Dates	Major Sources
Haloacetic Acids (ppb)	60	N/A	3.6	1.5 – 3.6	8/9/2022	by-product of chlorination,
Trihalomethanes (ppb)	80	N/A	16	2.3 - 16	8/9/2022	by-product of chlorination
Free Chlorine (ppm)	4	4	0.36	0.08 - 0.36	10 locations monthly	water additive used for disinfection

Disinfection: Disinfection does not sterilize the water; it removes harmful organisms. Sterilization is too costly and kills all microorganisms, even though most are not harmful. The North Sagamore Water District uses sodium hypochlorite as its primary disinfectant.

Lead and Copper

Contaminant	AL	MCLG	90 th % Level	Range of Levels	Sites Above AL	Sample Dates	Major Sources
Lead (ppb)	15	0	2	ND - 3	0 out of 20	8/18/2020 - 9/4/2020	plumbing corrosion
Copper (ppm)	1.3	1.3	0.384	ND - 0.602	0 out of 20	8/18/2020 - 9/4/2020	plumbing corrosion

Monitoring for lead and copper is required every three years. Testing will next be performed in 2023.

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 North Sagamore Water District is responsible for providing high quality 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://epa.gov/safewater/lead>.

Secondary and Unregulated Contaminants

Contaminant	SMCL	ORSG	Average Detected	Range of Levels	Sample Dates	Possible Sources / Notes
Manganese (ppb)	50	300	3	ND – 12.00	8/9/2022	erosion of natural deposits,
Sodium (ppm)	N/A	20*	34	21 - 57	5/12, 6/23, 7/15/2021	erosion of natural deposits, treatment by product
Chlorate (ppb)	N/A	210	69	18 - 97	11/9/2022	treatment by-product**
Chloride (ppm)	250	N/A	34	30 – 45	8/9/2022	runoff from road deicing, use of inorganic fertilizers, septic tank effluents, seawater intrusion
Perfluorobutanesulfonic Acid - PFBS (ppt)	N/A	N/A	1.20	0.702 – 1.80	1/24, 4/12, 7/13/2022	discharges and emissions from industrial and manufacturing sources
Perfluorohexanoic acid - PFHxA (ppt)	N/A	N/A	1.70	ND – 3.35	1/24, 4/12, 7/13/2022	discharges and emissions from industrial and manufacturing sources

* **Sodium** is a naturally occurring common element found in soil and water and is necessary for functioning of human systems. The guideline of 20 ppm when exceeded does not require treatment to reduce levels, rather represents the level of sodium in water that physicians and sodium sensitive individuals should be aware of where sodium exposures are being carefully controlled. More information on sodium is available at our office and on our website.

** **Chlorate** is a known by-product of the disinfection process and is formed when sodium hypochlorite reacts with other compounds in the water. The District has best management practices in place to limit the formation of the chlorate ion and will continue to monitor for this unregulated contaminant.

Fluoride: The North Sagamore Water District does **not** add fluoride to the water and testing of source water detects none.

The Massachusetts Department of Environmental Protection has reduced the monitoring requirements at Black Pond Well and Church Lane Well for inorganic contaminants, synthetic organic compounds and Perchlorate, as well as the Beach Well for Inorganic contaminants and Perchlorate because these sources are not at risk of contamination. The last samples collected for these contaminants were taken in 2015, 2018 and 2020 and were found to meet all applicable EPA and MassDEP standards.

The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, is more than one-year-old.

The North Sagamore Water District is pleased to report our drinking water meets or exceeds all Federal and State drinking water standards as required by law.

The North Sagamore Water District tests its drinking water supply as required by the Department of Environmental Protection. The results are sent to the D.E.P. monthly for their review. Should any of our tests indicate any irregularities, we would be notified immediately. In turn, the District would immediately notify its customers. The resources currently used by the District to inform customers of any testing results, water conservation recommendations, flushing, etc. are:

- Our website: www.northsagamorewaterdistrict.com
- The Bourne Enterprise Newspaper
- Bourne Community Television

The District is continually striving to meet the challenges of complying with the Safe Drinking Water Act. It is the goal of this District's Commissioners and staff to ensure our customers the highest level of water quality possible. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency Safe Drinking Water Hotline (1-800-426-4791) or by visiting the following websites:

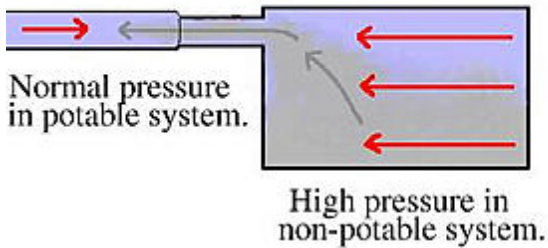
- <https://www.mass.gov/topics/drinking-water>
- <https://www.epa.gov/ground-water-and-drinking-water>

Cross Connection and Backflow Prevention Information

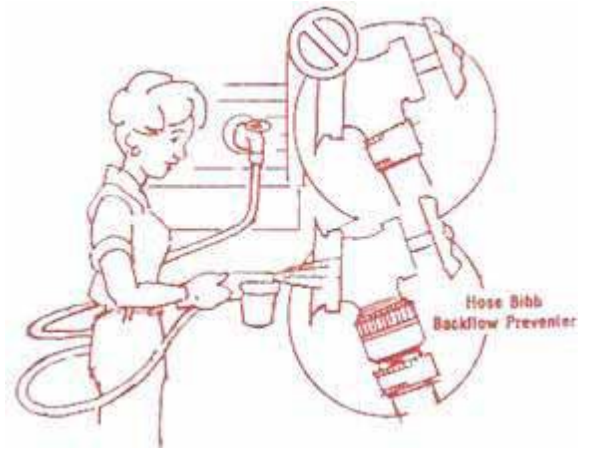
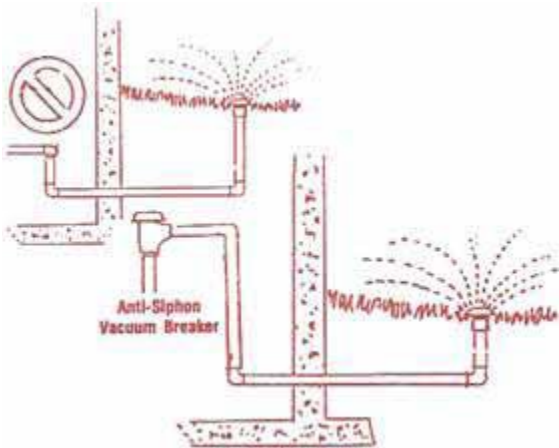
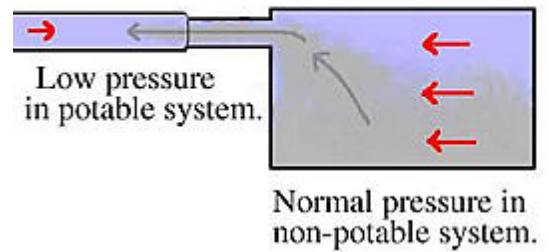
Help protect your public water supply and safeguard your potable water use from contamination due to backflow and back-siphonage. When water flows backwards through the water supply system, backflow and back-siphonage can occur. Numerous well documented cases identify that cross connections have been responsible for contamination of drinking water. A cross connection is identified as any actual or potential connections between a potable and non-potable water supply.

How you can help: Never submerge hoses in containers including pools, buckets, tubs and or sinks. Always keep the end of the hose clear of possible contaminants. Inexpensive backflow devices can be purchased and easily installed on all of your older style hose bibs or threaded faucets. Customers with irrigation systems should make sure their backflow prevention devices are working properly by having them tested annually. The District needs your support in helping to maintain a safe delivery of our drinking water system. More information about cross connections in the District is available on our website under the Cross Connection's tab. The District currently offers backflow prevention devices for outdoor hose spigots at our office at no cost to District residents.

Back Pressure:



Back Siphonage:



Any questions pertaining to the North Sagamore Water District's 2022 Water Quality Report may be directed to Matthew Sawicki, Superintendent, at (508) 888-1085 ext. 102 or by email at matt-nswd@comcast.net.

www.northsagamorewaterdistrict.com

