



## Drinking Water Quality Report

300 ARNOLD STREET, WRENTHAM, MA | PWS ID# 4350003

### Introduction

This report provides information about the drinking water quality for Mount Saint Mary's Abbey in 2021. Our drinking water comes from two groundwater wells located in the Town of Franklin near the Franklin/Wrentham town line. In case of an emergency, the Abbey has a supply of bottled water on-site. It is mandated by the federal public right-to-know regulation requiring community water suppliers to provide specific water quality information annually to you.

### Important Information About Drinking Water

All 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.

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. Removing all contaminants would be extremely expensive and in nearly all cases would not provide any greater protection.

More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline: 1-800-426-4791

If you would like more information, the complete SWAP report is available online: [mass.gov/files/documents/2016/08/ou/4350003.pdf](https://mass.gov/files/documents/2016/08/ou/4350003.pdf)

#### Contaminants that can be present include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- 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, or farming.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts 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.

### Source Water Assessment and Protection (SWAP) Program

The SWAP program assesses the susceptibility of public water supplies to contamination due to land use and activities within the recharge area of the water supply. A susceptibility ranking of high was assigned to the two water sources (wells) using the information collected by the Massachusetts Department of Environmental Protection (MassDEP). A high ranking is given to any water supply that has at least one high-threat land use within the water supply protection area. Since Mount Saint Mary's Abbey has three high-threat land uses within the protection area of these sources, these wells must be assigned a high susceptibility ranking. Potential sources of contamination within the protection area are manure spreading, pesticide storage or use, and underground storage tanks. However, the SWAP report was written in 2003. Since 2003, the Abbey has eliminated manure spreading and pesticide use within the Zone I area. The Zone I area encompasses a 400-foot radii around each well.

### System Overview

The two water sources for the Abbey's system are bedrock wells, one of which is located in the well house "pit" and the other in the field below the wind turbine. Both of these wells are over 500-feet deep and are fed by underground rivers that run across the property. Because of this, the land above the wells is crucial to the overall water quality of our system. Great care is taken to regulate and maintain activities aboveground. Water from both wells is pumped and conveyed to an underground storage tank in the well house pit.

Water is pumped from both wells and collects in a underground storage tank. It is a 5,000-gallon tank and shaped like a bullet – so long that it extends under the grass, even to the blacktop outside the church! Water is sent from it to the Abbey, as needed, via an automatic system that senses a drop in pressure when water is used. Therefore, the system maintains water pressure at a fairly constant rate. In 2021, the tank was inspected and found to be in good shape for continued use.

To ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) limits the amount of certain contaminants in water from public water systems. Food and Drug Administration (FDA) and Massachusetts Department of Public Health (MDPH) regulations provide the same public health protection for bottled water.

### Backflow Preventers

The key to the safe operation of our water system are backflow preventers, which are located on all the water transmission lines. Backflow preventers prevent water inside the monastery's pipes from flowing back to the well house and contaminating the water stored there.

In 2019, we changed the type of backflow preventer used for water coming into the Candy House and the Abbey. With the permission of the Drinking Water Program, we installed dual check valve assemblies at both locations. These assemblies are a better "fit" for well water, because of its variable pressure, and better safeguard for you, the consumer, from a "cross connection" event. The former assemblies were designed for people who relied on town water; the assemblies repeatedly failed safety tests.

**What is backflow?** Backflow is the undesired reverse of the water flow in the drinking water distribution lines. This backward flow of water can occur when the pressure created by an equipment or system such as a boiler or air-conditioning is higher than the water pressure inside the water distribution line (backpressure), or when the pressure in the distribution line drops due to routine occurrences, such as water main breaks.

There should be a "hose bibb" on every threaded faucet. This inexpensive vacuum breaker prevents what is in a hose used on that connection from coming into contact with the potable (drinkable) water in the pipes. This prevents a cross connection, i.e., the drinking water coming in contact with potential sources of pollution or contamination. If you are aware of a threaded faucet that needs a hose bibb, please notify Sister Mariann by calling 508-528-1282.

**Water Quality Data** The table shows substances detected in the Abbey's drinking water (PWS ID# 4350003).

Regulated at the Water Supply Wells	Highest Level Detected	Range of Detected Levels	MCL	Ideal Goal (MCLG)	Sources of Contaminant	
Gross Alpha <sup>[1]</sup>	8.1 pCi/L	No range, only one sample required	15 pCi/L	0 pCi/L	Erosion of natural deposits	
Nitrate	1.8 ppm	No range, only one sample required	10 ppm	10 ppm	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits	
Radium (226 & 228 combined) <sup>[2]</sup>	8.1 pCi/L	0.62 – 10 pCi/L	5 pCi/L	0 pCi/L	Erosion of natural deposits	
Perchlorate	0.13 ppb	No range, only one sample required	2 ppb	NA	Rocket propellants, fireworks, munitions, flares, blasting agents	
Regulated by the Customer's Tap						
Copper <sup>[3, 4, 5, 6]</sup>	0.33 ppm	0.13 – 0.34 ppm	1.3 ppm	1.3 ppm	Corrosion of household plumbing, erosion of natural deposits	
Lead <sup>[3, 4, 5]</sup>	8.5 ppb	1 – 14 ppb	15 ppb	0 ppb	Corrosion of household plumbing, erosion of natural deposits	
Fecal Indicator Regulated in the Groundwater Source	Result	2021 Date	MCL/TT	MCLG	Violation	Source of Contamination
Total Coliform <sup>[7]</sup>	3 positive samples	9/28, 10/5, 11/21	TT	0	No	Human and animal fecal waste
Secondary Contaminants	Average Detected	Range of Detected Levels	SMCL	Ideal Goal (MCLG)	Noticeable Aesthetic Effects Above the SMCL	
Chloride <sup>[1]</sup>	29.6 ppm	No range, only one sample	250 ppm	Not regulated	Salty taste	
Copper <sup>[1]</sup>	0.06 ppm	No range, only one sample	1 ppm	Not regulated	Metallic taste, blue-green staining	
Iron <sup>[1]</sup>	140 ppb	No range, only one sample	300 ppb	Not regulated	Taste and deposition on plumbing fixtures	
Sulfate <sup>[1]</sup>	36 ppm	No range, only one sample	250 ppm	Not regulated	Salty taste	
Total Dissolved Solids (TDS) <sup>[1]</sup>	210 ppm	No range, only one sample	500 ppm	Not regulated	Metallic taste	
Zinc <sup>[1]</sup>	0.043 ppm	No range, only one sample	5 ppm	Not regulated	Hardness, deposits, colored water, staining, salty taste	
Manganese <sup>[3]</sup>	16 ppb	5 – 27	50 ppb	Not regulated	Taste and deposition on plumbing fixtures	
Substance	Average Detected Levels	Range of Detected Levels	Footnotes:			
Unregulated Contaminants <sup>[8]</sup>			[1] Results are from the most recent testing in 2019.			
Alkalinity <sup>[1]</sup>	55 ppm	No range, only one sample	[2] Highest level detected is based on the running annual average of data. The range represents the individual results of all samples collected in 2021.			
Calcium <sup>[1]</sup>	31.3 ppm	No range, only one sample	[3] Results are from the most recent testing in 2020.			
Fluoride <sup>[3]</sup>	0.39 ppm	No range, only one sample	[4] All results are below the AL.			
Hardness <sup>[1]</sup>	95 ppm	No range, only one sample	[5] Per a conversation with DEP, since only five lead and copper samples were collected, the 90th percentile value was calculated by averaging the two largest results of each element, lead and copper.			
Magnesium <sup>[1]</sup>	4.08 ppm	No range, only one sample	[6] Copper is listed twice in this table, the first represents results found at an approved sample location. The second represents the results of five samples taken at the customers tap, at locations approved by MassDEP.			
Potassium <sup>[1]</sup>	6.04 ppm	No range, only one sample	[7] Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify any problems that were found during these assessments. For more information, refer to "Level 1 and 2 Coliform Assessments" below.			
Sodium <sup>[9]</sup>	20.1 ppm	No range, only one sample	[8] Unregulated contaminants are those for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future regulation is warranted.			
			[9] The ORSG for sodium is 20 ppm (there is no applicable SMCL for sodium). 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.			

**Definitions:**

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

**Maximum Contaminant Level (MCL)** – The highest level of a contaminant allowed in drinking water. MCLs are set as close to MCLGs 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. MCLGs allow for a margin of safety.

**NA** – Not available

**Picocuries per liter (pCi/L)** – A measure of the radioactivity in water. A picocurie is 1,012 curies and is the quantity of radioactive material producing 2.22 nuclear transformations per minute.

**Secondary Maximum Contaminant Level (SMCL)** – Concentration limit for a contaminant which may have aesthetic effects such as taste, odor, or staining.

**Key:**

**Part per billion (ppb)** – One part per billion is the equivalent of \$1 in \$1,000,000,000

**Part per million (ppm)** – One part per million is the equivalent of \$1 in \$1,000,000

**Lead Information**

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. Mount Saint Mary's Abbey is responsible for providing high-quality drinking water, but it 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 drinking 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 [epa.gov/safewater/lead](http://epa.gov/safewater/lead).

**Radium**

The wells from Mount Saint Mary's Abbey were individually sampled for radium four times throughout 2021. The highest level detected is based on a running annual average from the last three quarters of 2020 and the four quarters of 2021. Radium levels detected in well water exceeded the level regulated under the drinking water standards. Some people who drink water containing radium 226 or 228 in excess of the maximum contaminant level (MCL) over many years may have an increased risk of getting cancer.

**Vulnerability**

Some people may be more vulnerable to contaminants 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/Centers for Disease Control and Prevention (CDC) 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).

**Per- and Polyfluoroalkyl Substances (PFAS)**

In 2022, out of an abundance of caution and concern about PFAS, our system sampled for PFAS compounds. PFAS were not detected in our system. EPA has set a Health Advisory of 70 parts per trillion (ppt) for PFOS (perfluorooctanesulfonic acid) and PFOA (perfluorooctanoic acid). On October 2, 2020, MassDEP set a Massachusetts MCL (MMCL) of 20 ppt for PFOS, PFOA, PFNA (perfluorononanoic acid), PFHxS (perfluorohexanesulfonic acid), PFHpA (perfluoroheptanoic acid) and PFDA (perfluorodecanoic acid) individually or as a group. MassDEP abbreviates this set of six PFAS as "PFAS6." This drinking water standard is set to be protective against adverse health effects for all people consuming the water. For a consumer factsheet on PFAS, see [mass.gov/doc/massdep-fact-sheet-pfas-in-drinking-water-questions-and-answers-for-consumers](http://mass.gov/doc/massdep-fact-sheet-pfas-in-drinking-water-questions-and-answers-for-consumers).

**Level 1 and 2 Coliform Assessments**

A Level 1 Assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

A Level 2 Assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and /or why total coliform bacteria have been found in our water system on multiple occasions.

During the past year, one Level 1 Assessment and two Level 2 Assessments were required to be completed for our water system. All three assessments were completed. In addition, we were required to take three corrective actions and we completed three of these actions.

**How Can I Learn More?**

For questions about the Abbey's water supply or about this report, please contact Sister Mariann Garrity at 508-528-1282.