

# MOUNT SAINT MARY'S ABBEY



## 2018

# Drinking Water Quality Report

## Introduction

This report provides information about the drinking water quality for Mount Saint Mary's Abbey in 2018. 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).*

### 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 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.

### How Can I Learn More?

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

## For Your Health

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

## Source Water Assessment and Protection (SWAP) Program

The Source Water Assessment and Protection (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 (DEP). 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 St. 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 for the wells are circular areas with 400-foot radii that is centered at the wellheads.

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

## Improvements

This past year we have replaced the motor for Well 2 in addition to water softeners used on-site. This was due in part from operational issues experienced with both items.

Additionally, in the late Spring of 2019, we intend to replace the motor for Well 1. This routine maintenance is necessary as the motor is approaching the end of its useful life and the Abbey places high importance on staying proactive with regard to drinking water treatment improvements.

## Backflow Preventers

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

**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 Sr. Mariann.

**PWS ID# 4350003**

**300 ARNOLD STREET, WRENTHAM, MA**

**Water Quality Data** The table shows seven substances detected in the Abbey's drinking water (PWS ID# 4350003). Results for four substances are from 2018 when sampling for these substances was last required. During 2018 60 other substances tested were not detected in water.

Substance	Highest Level Detected	Range of Detected Levels	Highest Level Allowed (MCL)	Ideal Goal (MCLG)	Sources of Contaminant
Gross Alpha <sup>1</sup>	8.9 pCi/L	No range, only 1 sample required	15 pCi/L	0 pCi/L	Erosion of natural deposits
Radium (226 & 228 combined) <sup>2</sup>	6.8 pCi/L	2.2 – 8.4 pCi/L	5 pCi/L	0	Erosion of natural deposits
Sodium <sup>3,4</sup>	33.7 ppm	No range, only 1 sample required	Not regulated	Not regulated	Naturally present in the environment
Substance	90 <sup>th</sup> Percentile	Range of Detected Levels	Action Level	Ideal Goal (MCLG)	Sources of Contaminant
Copper	0.33 ppm <sup>3,5,6</sup>	0.13 – 0.34 ppm	1.3 ppm	1.3 ppm	Corrosion of household plumbing, erosion of natural deposits
Lead	8.5 ppb <sup>3,5,6</sup>	1 – 14 ppb	15 ppb	0	Corrosion of household plumbing, erosion of natural deposits
Total Coliform	1 Level 1 Assessment occurred in 2018, see paragraph titled Information About Coliform for more information.				
Secondary Contaminants	Date Collected	Result of Range Detected	Average Detected	Ideal Goal (SMCL)	Noticeable Aesthetic Effects Above the SMCL
Manganese <sup>3,7</sup>	Various	8 – 429 ppb	219 ppb	50 ppb	Taste and deposition on plumbing fixtures

### Footnotes

1. No testing required in 2018. Results are from the most recent testing in 2016.
2. Highest level detected is based on the running annual average of data. The range represents the individual results of all samples collected in 2018.
3. Results are from the most recent testing in 2017.
4. The Massachusetts DEP Office of Research and Standards has set a guideline concentration of 20 ppm for sodium. Sodium-Sensitive individuals, such as experiencing hypertension, kidney failure, or congestive heart disease, should be aware of the sodium levels where exposures are being carefully controlled.
5. All results are below the AL.
6. 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.
7. EPA has established a lifetime health advisory (HA) of 300 ppb to protect against concerns of potential neurological effects, and 1-day and 10-day HA of 1.0 ppm for acute exposure. Manganese is naturally present in the environment.

### Definitions

**Action Level (AL)** – The concentration of a contaminant that, if exceeded, triggers treatment or other requirements which a water system must follow.  
**MCL (Maximum Contaminant Level)** – The highest level of a contaminant allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available technology.  
**MCLG (Maximum Contaminant Level Goal)** – 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.  
**pCi/L** – Picocuries per liter is a measure of the radioactivity in water. A picocurie is 1012 curies and is the quantity of radioactive material producing 2.22 nuclear transformations per minute.  
**SMCLG (Secondary Maximum Contaminant Level)** – Concentration limit for a contaminant which may have aesthetic effects such as taste, odor, or staining.

### Key:

**ppb:** Part per billion. One part per billion is the equivalent of \$1 in \$1,000,000,000  
**ppm:** Part per million. 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 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 Concentrations

The wells from Mount Saint Mary's Abbey were individually sampled for radium four times throughout 2018. The highest level detected of radium is based on a running annual average from the last three quarters of 2017 and the four quarters of 2018. The DEP will continue to study the radium concentrations at the Abbey and will be deciding if treatment for radium will be required in the future.

### Radium Health Effects

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 MCL over many years may have an increased risk of getting cancer.

### Monitoring Waiver

Mount Saint Mary's Abbey received a monitoring waiver from the DEP for testing for the following parameters in 2018: inorganics and synthetic organic compounds.

### Information on Manganese

Manganese is a naturally occurring mineral found in rocks, soil, groundwater, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but can have undesirable effects on certain sensitive populations at elevated concentrations. The United States Environmental Protection Agency (EPA) and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 ug/L (microgram per liter), or 50 parts per billion. In addition, MassDEP's Office of Research and Standards (ORS) has set a drinking water guideline for manganese (ORSG), which closely follows the EPA public health advisory for manganese. Drinking water

may naturally have manganese and, when concentrations are greater than 50 ppb, the water may be discolored and taste bad. Over a lifetime, the EPA recommends that people drink water with manganese levels less than 300 ppb and over the short term, EPA recommends that people limit their consumption of water with levels over 1000 ppb, primarily due to concerns about possible neurological effects. Children younger than one year old should not be given water with manganese concentrations over 300 ppb, nor should formula for infants be made with that water for more than a total of ten days throughout the year. The ORSG differs from the EPA's health advisory because it expands the age group to which a lower manganese concentration applies from children less than six months of age to children up to one year of age to address concerns about children's susceptibility to manganese toxicity. See EPA Drinking Water Health Advisory for manganese at: [epa.gov/sites/production/files/2014-09/documents/support\\_cc1\\_magnese\\_dwreport\\_o.pdf](http://epa.gov/sites/production/files/2014-09/documents/support_cc1_magnese_dwreport_o.pdf) and MassDEP Office of Research and Standards (ORSG) for manganese [mass.gov/eea/agencies/massdep/water/drinking/lead-and-other-contaminants-in-drinking-water.html](http://mass.gov/eea/agencies/massdep/water/drinking/lead-and-other-contaminants-in-drinking-water.html)

### Information About Coliform

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.

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 the water system. During the past year, we were required to conduct one Level 1 Assessment, and one Level 1 Assessment was completed.

### 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/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).