

**Town of Cavendish Municipal Water System
P.O. Box 126, 37 High Street
Cavendish, Vermont 05142-0126
(802) 226-7291**

**Consumer Confidence Report
June 2017**

Information about this report

The staff and Board of Water Commissioners of the Town of Cavendish Municipal Water System are pleased to provide you with this consumer confidence report which offers a snapshot of Cavendish's drinking water quality last year, from January through December 201. Providing users with a safe and dependable supply of drinking water is our primary goal. We hope that the information provided within this booklet will be of interest and value to you in understanding what the system presently does in the way of quality control and safety, what the nature of the local water supply is, what the current status of the system is, and what we plan to do in the future.

We are presenting the information to you in a manner which we hope will prove to be an easy read. It is one of our objectives for the report to give you the essential information without an overload of technical details. We would, of course, be happy to try to supply any interested customer with further technical details if requested. Please call the office if you need assistance in this way.

The U.S. Congress passed the Safe Water Drinking Act 39 years ago and gave the U.S. Environmental Protection Agency (EPA) the job of making rules. These rules are the National Primary Drinking Water Regulations (NPDWR) and their purpose is to ensure that drinking water in the U.S. is safe. In 1996, Congress passed amendments which, in part, require that drinking water systems make available to their customers important information about the water they supply including where it comes from, what is in the water, and how the water supplied compares with federal standards. Hence this annual report...

This report is prepared for you in accordance with the EPA's 40 Code of Federal Regulations, NPDWR parts 141 and 142. Please note that some of the text included in this report is "mandatory text" related to water systems in general and that it is required to be included. Due to the mandatory text requirements, a small portion of the text in this report may not seem to have direct bearing on our system.

Water System General Information

Public Water System Name: Cavendish Municipal Water System WSID #: 5317

Town: Cavendish, Vermont (including the Cavendish and Proctorsville village areas)

Owner: Town of Cavendish, Vermont
P.O. Box 126, 37 High Street
Cavendish, VT 05142-0126
Phone: (802) 226-7292

Operator: Randy Shimp, Chief Operator
Cavendish Municipal Water System
P.O. Box 126
Cavendish, VT 05142-0126
Phone: (802) 226-7743

Manager: Brendan A. McNamara, Town Manager.
P.O. Box 126, 37 High Street
Cavendish, Vermont 05142-0126
Phone:(802)226-7262

Board: Cavendish Board of Water Commissioners
P.O. Box 126, 37 High Street
Cavendish, VT 05142-0126
(802) 226-7291

Commissioners	Term	Term Expiration	Village
Brendan McNamara (Town Manager)	1 Year	March 2018	N/A
Leon Woods	3 Year	March 2018	Proctorsville
Robert C. Glidden	3 Year	March 2018	Proctorsville
Howard Pixley	3 Year	March 2019	Cavendish
Gerry Martel	3 Year	March 2010	Proctorsville

Regular meetings of the Board of Water Commissioners normally take place on the fourth Monday of the months of: February, April, June, August, October and December with additional meetings called if circumstances so warrant. Such circumstances may include work on special projects, system emergencies, by-law revision work sessions, budget development, personnel matters, or any other matter deemed appropriate by the Board where it would be prudent to meet in advance of a regularly scheduled meeting.

Meetings take place at the meeting room of the Cavendish Town Office unless otherwise posted. The regular Meeting time is established at 5:00pm. Meeting agendas and notices are posted in the Town Clerk's Office and on the two, outdoor, town posting-boards which are located on the village greens of Cavendish and Proctorsville.

The Cavendish Board of Water Commissioners is an unpaid citizen board. It is policy that commissioners hold staggered three-year terms and must be users of the water system with the exception of a one year position which is filled by the incumbent Town Manager who need not be a system user. It is our goal to maintain equal representation of both villages on the Board.

Persons having questions about this report or the Cavendish Municipal Water System may contact the office or parties listed above and, of course, are welcome to attend any of our regularly scheduled meetings.

Water Source Information

Vermont Source type: Gravel Well
EPA Source Type: Groundwater, non-purchased
Source Name: **MAIN WELL #1** - Primary Source
Status: **ACTIVE**
Location: Off Mill Street, Cavendish

Vermont Source type: Drilled Well
EPA Source Type: Groundwater, non-purchased
Source Name: **WELL #2** - Secondary Source
Status: **ACTIVE**
Location: Off Mill Street, Cavendish

Vermont Source type: Gravel Well
EPA Source Type: Groundwater, non-purchased
Source Name: Proctorsville #1 - EWS
Status: **INACTIVE** - Inadequate Protection - Elevated saline - Emergency Source Only
Location: Off Main Street, Proctorsville

The State of Vermont Water Supply Rule requires Public Community Water Systems to develop a Source Protection Plan (SPP). The Cavendish Municipal Water Source Protection Plan, was updated to include Well #2 and was submitted and approved in October 2016. This plan delineates a source protection area for our system and identifies potential and actual sources of contamination. A copy of the SSP is available for review at the Cavendish Town Office.

Security

We are certain that most users are generally already aware of the importance of security for our water systems. The events of September 2001 and potential for terrorist activities have certainly brought the importance of security to the front burner for many of us. Security breaches in municipal water systems right here in Vermont have occurred in the past several years and made these concerns even more pronounced. The Cavendish Municipal Water System is vigilant to security threats and vandalism, but we most definitely need citizens' help. **If you observe or become otherwise aware of any suspicious activities related to our water system whether property, equipment or facility, please contact us immediately.** *Maintaining a safe community is a responsibility that we **all** share.*

General and Health Information About Sources of Drinking Water and Contaminants

The sources of drinking water (both tap and bottled) 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. In some cases, the water may also pick up substances resulting from the presence of animals or human activity or even naturally-occurring radioactive materials. Drinking water, including store-bought bottled water, may reasonably be expected to contain small amounts of some contaminants. The presence of contaminants does not necessarily mean 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 at (800) 426-4791.

In order to ensure that the water we supply is safe to drink, we test it regularly according to regulations established by the U.S. Environmental Protection Agency and the State of Vermont. These regulations limit the amount of various contaminants. Types of contaminants that may be present in any raw or source water (public or private) before treatment include:

**Microbial contaminants*, such as viruses and bacteria, which may come from septic systems, sewage treatment plants, agricultural livestock operations, and wildlife.

**Inorganic contaminants*, such as salts and metals, which 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*, 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 by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, septic systems, and careless disposal of household chemicals.

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

Some people may be more vulnerable to drinking water contaminants than the general population. Immuno-compromised persons, such as people 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 providers. EPA/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800) 426-4791.

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 associated with service lines and home plumbing. The Cavendish Municipal Water System is responsible for providing high quality drinking water, but cannot control the variety of materials that may be used in your residential plumbing. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your own home's plumbing. Older homes with old plumbing may have pipes and fittings with lead content. If you are concerned about possible elevated levels of lead in your home's water, you may wish to have your water tested and you may wish to flush your tap for 30 seconds to 2 minutes before using your tap water for drinking or cooking, especially if the tap has not been used very recently. Additional information on this topic is available from the Safe Drinking Water Hotline (above) or at <http://www.epa.gov/safewater/lead>.

In order to ensure that tap water is safe to drink, EPA and the State of Vermont prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA and state regulations also establish limits for contaminants in bottled water which must provide the same protection for public health. **The Cavendish system provides all required testing.**

Cavendish Water Quality Data

The Cavendish Municipal Water System performs hundreds of tests each year to check for any detectable level of contaminants and to monitor the levels of additives. We also periodically perform microscopic particulate analysis. The length of the full listing of potential contaminants and other substances that we test for well exceeds the amount of space available in this brief report. The list contains many substances that most users wouldn't even suspect we were testing for and a number of chemical substances which many users may have never even heard of. In total, the testing of our water costs several thousands of dollars each and every year and each year the list of substances to be tested for and the frequency of required tests seems to grow. A comprehensive list of substances tested for is available for inspection at the office if you are interested.

As a summary of testing activities, you should be aware that:

- **Bacteriological tests** were performed and met standards
- **Nitrate testing** was performed and met standards
- **Synthetic organic chemical testing** was performed and met standards
- **Gross Alpha Particle testing** was performed and met standards
- **Per fluoridated Compounds (PFOA)** was performed on Well #1 with **NO** Detectable results
- **Lead and Copper testing** was performed and, while the municipal water system itself has no problem with lead

and copper content, a few homes with older, vulnerable plumbing which is not up to modern standards have historically had some levels which may need to be addressed by the owners. More information on lead and copper in drinking water is readily available from a number of sources including some pamphlets available at the Town Office.

- **Microscopic particulate analysis** was performed for groundwater under the direct influence of surface water and the system water passed by a comfortable margin.

The table on the next page lists all of the drinking water contaminants that we detected during the 2016 calendar year. Please note that the presence of mere trace amounts of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done during the period January 1st through December 31st, 2016. There is a much, much longer list of potential contaminants which we tested for but which were simply not detected.

Terms and abbreviations - In the table you may find terms you might not be familiar with. To help you better understand these terms we have provided the following definitions:

Maximum Contamination Level Goal (MCLG): The “Goal” is the level of a contaminant in drinking water below which there is no known or expected risk to human health. MCLGs allow for a significant margin of safety. An MCLG is a desirable goal but not a regulatory health requirement.

Maximum Contamination Level (MCL): The “Maximum Allowed” MCL is 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 Disinfection Level Goal (MRDLG): The level of drinking water disinfection below which there is no known risk to health. MRDLGs do not reflect the benefits of disinfectants in controlling microbial contaminants.

Maximum Residual Disinfection Level (MRDL): The highest level of disinfection allowed in drinking water. Addition of a disinfectant may help to control microbial contaminants.

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

Treatment Technique (TT): A process aimed to reduce the level of a contaminant in drinking water.

90th Percentile: Ninety percent of samples are below the action level.

95th Percentile: Ninety-five percent of samples are below the action level.

Picocuries per liter (pCi/L): a measure of trace radioactivity in water

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

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

Note: As an illustration, the amounts of a contaminant allowed in drinking water are so small they are measured in ppm (parts per *million*) - equivalent to one penny in \$10,000.00; or ppb (parts per *billion*) - equivalent to one penny in \$10,000,000.00!

Nephelometric Turbidity Unit (NTU): NTU is a measure of clarity of water. Turbidity in excess of 5NTU is just noticeable to the average person.

Running Annual Average (RAA): The average of 4 consecutive quarters (when on quarterly monitoring); values in table represent the highest RAA for the year.

Locational Running Annual Average (LRAA): The average of sample analytical results for samples taken at a particular monitoring location during four consecutive quarters.

Water Quality Data - Detected Contaminants CAVENDISH MUNICIPAL WATER SYSTEM

The tables which follow list all of the drinking water contaminants we detected during 2016. It also includes the date and results of any contaminants that we detected within the past five years for those tested less than once a year. Please note that the presence of these contaminants in the water at these very minute levels do not necessarily show that the water poses a health risk. **There were no contaminant violations in 2015.**

MICROBIOLOGICAL	Result	MCL	MCLG	Typical Source
No Detectable Results were found in the calendar year of 2016				

CHEMICAL CONTAMINANTS	Highest value/ Units	Range/ Units	MCL	MCLG	Sample Date	Violation Y or No	System or Individual	Likely sources of detected contaminant
Asbestos	1 MFL	1 -1 MFL	7 MFL	7 MFL	01/15/14	NO	System	Decay of asbestos cement water mains; Erosion of natural deposits.
Nitrate	0.3 ppm	0.3 - 0.3 ppm	10.0 ppm	10.0 ppm	01/05/16	NO	System	Run off from fertilizer use; Leaching from septic tanks; Sewage; Erosion of natural deposits.
Manganese	0.04 ppm	0.0 - 0.04 ppm	n/a	n/a	quarterly	NO	System	Erosion of natural deposits.
Iron	7.5 ppm	0.0 - 0.11 ppm	n/a	n/a	quarterly	NO	System	Erosion of natural deposits.

RADIONUCLIDES	Highest Value	Range/ Units	MCL	MCLG	Sample Date	Violation Y or No	System or Individual	Likely source of detected contaminant
NO REQUIRED TESTING FOR CALENDER YEAR 2016								

DISINFECTION RESIDUAL	RRA	Range	Unit	MRDL	MRDLG	Typical Source
Chlorine	0.105	0.030 - 0.190	mg/l	4.0	4.0	Required water additive to control microbes (disinfection)

DISINFECTION BYPRODUCTS	Monitoring Period	RAA	Range	Unit	MCL	MCLG	Typical Source
Total Trihalomethanes	2016	22.7	12.1 - 12.1	ppb	80	0	By-product of required drinking water disinfection

Lead and Copper	Action Level	90 th Percentile	95 th Percentile	Range	Sampling Date	# of sites that exceeded the Action Level	Total # of sites sampled	Likely source of detected contaminant
Copper	1.3 ppm	0.22 ppm	0.22 ppm	0.06-0.89 ppm	09/14/2016	0	10	Corrosion of household plumbing systems; erosion of natural deposits.; Leaching from wood preservatives
Lead	0.015ppm	0 ppm	1 ppm	0.0 – 0.003 ppm	09/14/2016	0	10	Corrosion of household plumbing systems; erosion of natural deposits.

Violation(s) that occurred during the year: We are required to monitor your drinking water for a wide range of specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not treatment is effective and our drinking water meets health standards. **The Cavendish Municipal Water System had no drinking water monitoring or contamination violations incurred during 2016.**

System Updates and Notes - June 2017:

- Our water filtration plant which we constructed for the purpose of removing the high levels of iron and manganese commonly found in the ground water in this area continues to prove itself to be effective and efficient. The filtration equipment removes virtually all of these two nuisance minerals. At most times, they are not even able to be detected in the samples (<0.020 ppm) which we test in-house as well as those we send out for professional lab analysis. Our test samples are generally taken from the stream of finished water, after filtration and prior to going into the distribution system. This negates the possible influence from disinfection by Chlorine, and any residual minerals from the pipes. The levels of removal meet, and usually exceed, our goal values.
- Well #2 was finally fully approved for use in January of 2017. We have been blending the water from this Well with the water from Well #1. The resulting mix has resulted in a lower level of iron going into the Filtration system which has a positive effect on the filtration process. The mixing also produces water with a higher Ph level, thus reducing the amount of chemicals required to buffer the Ph. for the filtration system. The other benefit to utilizing Well #2 has been a reduced draw requirement for Well#1, this should over time, increase the time between required cleaning and redevelopment of Well#1.
- Each spring and fall we conduct a hydrant flushing program which allows us to clean any sediment out of the lines and to test the operation of the hydrants. This is an important maintenance procedure and is specifically configured to flush any built up deposits in the mains to waste, so that the water you get from your tap is as clean as possible.
- As you might imagine, running a municipal water system 24 hours a day, 365 days a year, uses a lot of electric energy. The water plant is the second largest consumer of electric power of the town's facilities. We continue to work on energy efficiency improvements in our operations. The GMP electric account for the water system is one of the town's accounts involved in the group net metering for the town's solar array. We are already realizing cost savings as a result of this as well as making our municipal "carbon footprint" smaller for the environment's sake.
- Our state Permit to Operate stipulates that we must submit a complete O&M Manual (Operations & Maintenance) for our system, including drawings. The O&M Manual has been submitted and approved by the Agency of Natural Resources. Updates and revisions to the system operations are added to this Manual as necessary. We had no significant deficiencies noted during the last agency "sanitary survey" which is an overall inspection of the facilities and operations.
- Our last routine cleaning and redevelopment of the primary well (well #1) occurred in **June of 2016**. We are scheduling to again clean and redevelop well #1 during the Summer of 2018.
- The Cavendish Municipal Water System has a broadcast email system for sending out notices. If you wish to receive notices (not bills) via email, please send an email to waternotices@cavendishvt.org specifying your name and address (as they appear on your account) and your preferred email address. Important: Please put "Include Me On the Email Notice List" on the subject line.

On-Line Information:

The Cavendish Municipal Website, cavendishvt.org, has a page devoted to our water system. We invite you to visit to see what information is available and to see special notices which may periodically be posted there. For those with mobile devices, you can directly access the water system page by using the QR-code which appears on the right.

Thank you.

******* In addition to our best efforts to distribute this report, owners of rental properties served by the Cavendish Municipal Water System need to help ensure that copies of this report are distributed to their tenants. Landlords will promptly receive copies of this**

*report sufficient for the number of rental units they have simply by contacting our office and making that request. Please refer to page one for contact information. ******

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05142**

**This is your Cavendish Municipal Water System
Consumer Confidence Report - June 2016**

Let Us Know...

☞ As mentioned in this document, one of our objectives is to present the annual Consumer Confidence Report in a readable, easy to understand format. This is not easy given the amount of information offered and some of the technical data we are required to supply. Your suggestions in this regard would be most welcome. Please let us know if we can present this required information in a way which would be easier to use.

Thank you for taking the time to read this important report. We hope it is of value to you.

Remember to use water wisely - it is a precious resource. Contact the Town Office if you would like to receive a flyer of tips on saving water. Not only will you help to conserve this valuable resource, but it may help to save money on your water bill.

Please immediately report all water leaks, whether system leaks or within your home or business!

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▼ Break Seal To Open ▼