

MIDDLEBURY WATER DEPT

Consumer Confidence Report - 2020

The Town of Middlebury is pleased to provide you with our annual Consumer Confidence Report. The purpose of the report is to inform you of the quality of the water that we provided in 2020. Included are the details about where your water comes from, what it contains, and how it compares to the U.S. Environmental Protection Agency (EPA) and state standards. We are committed to providing you with information because informed customers are our best allies. This report is designed to inform you about the quality of water and services we deliver to you every day. If you have questions concerning this report, please contact the Water Department at 388-4045 or e-mail us at publicworks@townofmiddlebury.org.

Public Participation Opportunities

The Board of Selectmen schedule regular meetings on the second and fourth Tuesday of each month. Meetings are generally held in the Municipal Building Conference Room and start promptly at 7:00 PM. The Selectmen also serve as the Town's Water Commissioners. You are invited to attend the meetings, and you will be given the opportunity to discuss water issues or other concerns, either during the "citizen's comments" portion of the meeting or by contacting the Town Manager in advance to have your particular item or concern placed on the agenda for an upcoming meeting.

Specific questions or comments may also be directed to either of the following:

Bill Kernan, Director of Operations
77 Main Street
Middlebury, Vermont 05753
Phone ~ 802-388-4045

Kathleen Ramsay, Town Manager
77 Main Street
Middlebury, Vermont 05753
Phone ~ 802-388-8100

Water Source Information

Your water comes from:

Source Name	Source Water Type
WELL #2	Groundwater
WELL #3	Groundwater
WELL #4	Groundwater

Middlebury's water comes from the three (3) drilled wells listed above that are located on the east side of town. Well #2 located at Palmer Springs is our primary source supplying 1,550 gallons of water per minute (gpm). The other two wells, #3 and #4, serve as back-up water sources providing 450 gpm and 700 gpm, respectively. The State of Vermont Water Supply Rule requires Public Community Water Systems to develop a Source Protection Plan. This plan delineates a source protection area for our system and identifies potential and actual sources of contamination. Our Source Protection Plan has been developed for each of our water wells and has been approved by the Vermont Agency of Natural Resources as meeting both State and Federal drinking water standards. Our system's susceptibilities to potential sources of contamination are sand and gravel pit operations, agriculture, individual on-site septic systems and its proximity to Route 116. Please contact us if you are interested in reviewing the plan.

Drinking Water Contaminants

In general the sources of drinking water (both tap water and bottled water) include surface water (reservoirs, streams, lakes and rivers) and ground water (wells, springs). As water travels over the land's surface or through the ground, it dissolves naturally-occurring minerals. It also picks up substances resulting from the presence of animals and human activity. To ensure our tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) and the State of Vermont prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. Some contaminants may be harmful. Others, such as iron and sulfur, are not harmful. Public water systems treat water to remove contaminants, if any are present.

In order to ensure that your water is safe to drink, we test it regularly according to regulations established by the EPA and the State of Vermont. These regulations limit the amount of various contaminants like:

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, 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, may come from a variety of sources such as storm water runoff, agriculture, and residential users.

Radioactive contaminants, which can be naturally occurring or the result of mining activity.

Organic contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and also come from gas stations, urban storm water run-off, and septic systems.

Secondary Maximum Contaminate Levels (SMCL), are set by the EPA for things such as iron and sulfur, which are not harmful to human health but the guidelines are set to assist public water systems in managing their drinking water for aesthetic considerations such as taste, color, and odor.

Water Quality Data

The table below lists all the drinking water contaminants and additives that we detected during the past year. It also includes the date and results of any contaminants that we detected within the past five years if tested less than once a year. Our water needs minimal treatment. Chlorine is added to the water as a disinfectant to control any harmful bacteria or viruses that may be present. Fluoride is added for dental health benefits. Our water treatment procedures are monitored by the Vermont Department of Environmental Conservation, Water Supply Division and by the Vermont Department of Health. Daily monitoring is performed for both chlorine and fluoride residuals.

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

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

Level 1 Assessment: 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.

Level 2 Assessment: 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.

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

Maximum Contamination Level (MCL): The "Maximum Allowed" MCL is the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.

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. MCLG's allow for a margin of safety.

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

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

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

Parts per million (ppm) or Milligrams per liter (mg/l): (one penny in ten thousand dollars)

Parts per billion (ppb) or Micrograms per liter (ug/l): (one penny in ten million dollars)

Parts per trillion (ppt) or Nanograms per liter (ng/l): (one penny in ten billion dollars)

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

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

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

90th Percentile: Ninety percent of the samples are below the action level. (Nine of ten sites sampled were at or below this level).

Detected Contaminants MIDDLEBURY WATER DEPT

Disinfection Residual	RAA	RANGE	Unit	MRDL	MRDLG	Typical Source
Chlorine	0.282	0.100 - 0.480	mg/l	4	4	Water additive to control microbes

Chemical Contaminants	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
Fluoride	12/30/2020	0.88	0.1 - 0.88	ppm	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate	01/21/2020	1.14	0 - 1.14	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrate-Nitrite	01/21/2020	1.14	0 - 1.14	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Radionuclides	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
Combined Radium (-226 & -228)	07/24/2017	1.04	0.375 - 1.04	pCi/L	5	0	Erosion of natural deposits
Radium-226	07/25/2017	0.375	0.375 - 0.375	pCi/L	5	0	Erosion of natural deposits
Radium-228	07/24/2017	1.04	1.04 - 1.04	pCi/L	5	0	Erosion of natural deposits

Disinfection ByProducts	Collection Year	Highest LRAA	Range	Unit	MCL	MCLG	Typical Source
Total Trihalomethanes	2020	5	5 - 5	ppb	80	0	By-product of drinking water chlorination

Lead and Copper	Collection Year	90th Percentile	Range	Unit	AL*	Sites Over AL	Typical Source
Lead	2020	3.1	0 - 4.7	ppb	15	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	2020	0.16	0.042 - 0.31	ppm	1.3	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

*Lead and copper AL (Action Level) exceedance is based on the 90th percentile concentration, not the highest detected result.

Uncorrected Significant Deficiencies

The system is required to inform the public of any significant deficiencies identified during a sanitary survey conducted by the Drinking Water and Groundwater Protection Division that have not yet been corrected. For more information please refer to the schedule for compliance in the system's Operating Permit.

Date Identified	Significant Deficiencies	Facility
02/23/2015	Inadequate Chemical Application Facilities	TREATMENT PLANT WELL 2 (PALMER SPRINGS)

Changes in the Water Rule now require monitoring of our water's chlorine level to change from daily monitoring in the water distribution system to continuous monitoring at the two locations where the chlorinated water enters the distribution system. Although the chlorine monitoring requirement has changed, the equipment and method used to chlorinate our water has not. New chlorine and fluoride monitoring facilities have been constructed, however the data produced by the new monitoring equipment is inconsistent.

The inconsistencies seem to stem from the release of dissolved air in the water, resulting in bubbles as the water moves through the detection device. We have been in consultation with the design engineers, manufacturer and installers. Three different devices have been installed in attempts to release the air prior to the sample water entering the monitor. None of these devices have been successful.

Currently, we are working with our design engineer and equipment vendor to install pressure regulators and adjust the volume of flow through the monitoring device in an attempt to keep the air dissolved in the water without releasing bubbles. During this time we continue our normal, manual monitoring procedures daily for chlorine and fluoride levels at these two locations as well as at a third location in the water distribution system.

Health Information Regarding Drinking Water

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 infants, can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from EPA's Safe Drinking Water Hotline (1-800-426-4791).

The presence of these contaminants in the water does not necessarily show that the water poses a health risk. More information about contaminants and their potential health effects can be obtained by calling the U.S. Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

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 and components associated with service lines and home plumbing. Middlebury Water Department 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 anywhere from 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 (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

Distribution Information

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place and distributing copies by hand or mail.