

BARRE TOWN WATER SYSTEM - VT0005566

Consumer Confidence Report - 2023

This report is a snapshot of the quality of the water that we provided in 2023. Included are the details about where your water comes from, what it contains, and how it compares to 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 water and services we deliver to you every day. To learn more, please attend any of our regularly scheduled meetings which are held:

Tuesday's selectboard meeting at 6:00 (date/time) at 149 Websterville Road, Websterville VT 05678 (location).

The person who can answer questions about this report is: (print) Josh Martineau

Telephone: 802477-1385 and/ or Email jmartineau@barretown.org

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.

As required by the Lead and Copper Rule Revision, we have prepared a service line inventory. The purpose of the inventory was to determine if any of our service lines contain lead, galvanized pipe requiring removal, or unknown materials. Please contact us if you would like access to this inventory.

Water Source Information

Your water comes from:

Source Name	Source Water Type
BARRE CITY - DIX RESERVOIR	Surface Water
GRANITEVILLE SOURCES	Ground Water under the Influence of Surface Water
WELL 1	Groundwater

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. Please contact us if you are interested in reviewing the plan.

Drinking Water Contaminants

The sources of drinking water (both tap water and bottled water) include surface water (streams, lakes) 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. 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 U.S. Environmental Protection Agency and the State of Vermont. These regulations limit the amount of various contaminants:

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 run-off, 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.

Water Quality Data

The table below lists all the drinking water contaminants 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. The presence of these contaminants in the water does not necessarily show that the water poses a health risk.

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.

Corrosion Control Efforts: Treatment (including pH adjustment, alkalinity adjustment, or corrosion inhibitor addition) or other efforts contributing to the control of the corrosivity of water, e.g., monitoring to assess the corrosivity of water.

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 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 (µg/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).

Per- and polyfluoroalkyl substances (PFAS): PFAS are a group of human-made chemicals that have been in use since the 1940s. PFAS have been found in a wide variety of consumer products and as an ingredient in firefighting foam. PFAS manufacturing and processing facilities, airports, and military installations are some of the contributors of PFAS releases into the air, soil and water. Vermont currently regulates 5 PFAS and this list includes:

(PFNA): Perfluorononanoic Acid

(PFOA): Perfluorooctanoic Acid

(PFOS): Perfluorooctane Sulfonic Acid

(PFHpA): Perfluoroheptanoic Acid

(PFHxS): Perfluorohexane Sulfonic Acid

Detected Contaminants BARRE TOWN WATER SYSTEM

Disinfection Residual	RAA	RANGE	Unit	MRDL	MRDLG	Typical Source
Chlorine	0.307	0.100 - 0.790	mg/l	4	4	Water additive to control microbes

Chemical Contaminants	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
Barium	02/28/2023	0.02	0.02 - 0.02	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Nitrate	02/28/2023	1.6	1.6 - 1.6	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

PFAS Contaminants	
Typical Source	A large group of human-made chemicals used widely in manufacturing and consumer products
MCL	20 (individual or sum of the 5 regulated PFAS compounds)
Units	All units in parts per trillion (ppt)

Collection Date	PFHpA	PFNA	PFHxS	PFOA	PFOS	Sum of 5 regulated PFAS compounds
11/07/2023	-	-	-	-	-	-
12/29/2020	-	-	-	-	-	-
11/14/2019	-	-	-	-	-	-

*Additional PFAS, not regulated by the Vermont Water Supply Rule, may also have been detected in the past five years. Please contact us if you would like more information on other unregulated PFAS that may be in your drinking water.

Radionuclides	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
Combined Radium (-226 & -228)	02/26/2020	0.192	0.192 - 0.192	pCi/L	5	0	Erosion of natural deposits
Radium-226	02/26/2020	0.192	0.192 - 0.192	pCi/L	5	0	Erosion of natural deposits

Disinfection ByProducts	Collection Year	Highest LRAA	Range	Unit	MCL	MCLG	Typical Source
Total Trihalomethanes	2023	36	16 - 41	ppb	80	0	By-product of drinking water chlorination
Total Haloacetic Acids (HAA5)	2023	21	0 - 16	ppb	60	0	By-product of drinking water chlorination

Lead and Copper	Collection Date	90th Percentile	Range	Unit	AL*	Sites Over AL	Typical Source
Lead	08/21/2023 -	2.9	0 - 4.3	ppb	15	0	Corrosion of household plumbing

	08/25/2023						systems; Erosion of natural deposits
Copper	08/21/2023 - 08/25/2023	0.84	0.17 - 1.2	ppm	1.3	0	Corrosion of household plumbing systems; Erosion of natural deposits

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

**Complete lead tap sampling data (i.e. each individual sample result) are available for review. Please contact us if you would like to receive this data.

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).

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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Safe Drinking Water Hotline.

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. BARRE TOWN WATER SYSTEM 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 <http://www.epa.gov/safewater/lead>.

VT0005248 Consumer Confidence Report Certificate of Delivery 2023 GRANITEVILLE FIRE DISTRICT 4

I, Jen Malnati, hereby certify that the Consumer Confidence Report for calendar year 2023 has been distributed to all customers served by the above water system by mail or an alternative direct delivery method specified below and “good faith” efforts were used to reach non-bill paying consumers. Further, I certify that the information in the report is correct and consistent with the compliance monitoring data previously submitted to the Vermont Drinking Water and Groundwater Protection Division. Any intentional deception or misinformation represented in this report could be cited as a violation of U.S. EPA Safe Drinking Water Act of 1996.

Date CCR Distributed: April 12, 2023

I. Direct Delivery Method(s) Used: (Water Systems *must* use at least one)

Mail Hand Delivery Electronic Delivery (provide direct link to CCR *if applicable*)

II. “Good faith effort” Delivery Method(s) Used (to reach non-bill paying customers). Please list the method(s) used:

Notification is sent by e-mail, if available, or by mail.

Consecutive Water Systems only:

Check here if the Wholesaler CCR *was* included when distributing our CCR to customers. (This must be completed *prior* to submitting this form).

Please sign and date this page *after* the CCR has been distributed to all customers.

Signed _____ Date _____

Title _____ Phone # _____

Please submit this completed form and a copy of your CCR to the Division no later than July 1, 2024.

Submittal options include:

- Email - Jeff.Girard@vermont.gov
 - Fax - 802-828-1541
 - Mail - Department of Environmental Conservation
Drinking Water and Groundwater Protection Division
One National Life Drive - Davis 4
Montpelier, VT 05620-3521
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GRANITEVILLE FIRE DISTRICT 4 - VT0005248

Consumer Confidence Report - 2023

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April 12, 2024 at Graniteville, Vermont.

The person who can answer questions about this report is: (print) Jen Malnati

Telephone: 802-272-8756 and/ or Email jenmalnati@yahoo.com

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.

As required by the Lead and Copper Rule Revision, we have prepared a service line inventory. The purpose of the inventory was to determine if any of our service lines contain lead, galvanized pipe requiring removal, or unknown materials. Please contact us if you would like access to this inventory.

Water Source Information

Your water comes from:

Source Name	Source Water Type
BARRE TOWN CONNECTION	Surface Water
RES 1 INF GALL 1-17 (B)	Ground Water under the Influence of Surface Water
RES 1 INF GALL 1-18 (C)	Ground Water under the Influence of Surface Water
RES 1 NORTH LINE INF GALL 1-2 (B)	Ground Water under the Influence of Surface Water
RES I NORTH LINE INF GALL (C)	Ground Water under the Influence of Surface Water
RES I NORTH LINE INF GALL 1-4 (D)	Ground Water under the Influence of Surface Water
RES I NORTH LINE INF GALL 1-5 (E)	Ground Water under the Influence of Surface Water
RES I NORTH LINE INF GALL 1-6 (F)	Ground Water under the Influence of Surface Water
RES I NORTH LINE INF GALL 1-7 (G)	Ground Water under the Influence of Surface Water
RES I SOUTH LINE INF GALL (B)	Ground Water under the Influence of Surface Water
RES I SOUTH LINE INF GALL (C)	Ground Water under the Influence of Surface Water
RES 1 SOUTH LINE INF GALL (D)	Ground Water under the Influence of Surface Water
RES 1 SOUTH LINE INF GALL (E)	Ground Water under the Influence of Surface Water
GALE RES INF GALL 2-2 TO 2-9 (B)	Groundwater
GALE RES INF GALL 2-2 TO 2-9 (C)	Groundwater
GALE RES INF GALL 2-2 TO 2-9 (D)	Groundwater
GALE RES INF GALL 2-2 TO 2-9 (E)	Groundwater
GALE RES INF GALL 2-2 TO 2-9 (F)	Groundwater

GALE RES INF GALL 2-2 TO 2-9 (G)	Groundwater
RES 3 SPRING 3-1 (B)	Groundwater
RES 3 SPRING 3-2 (C)	Groundwater
# 1 WELL (RESERVOIR 1)	Ground Water under the Influence of Surface Water
GALE RES INF GALL 2-1+2-1A (A)	Groundwater
RES 1 NORTH LINE INF GALL 1-1 (A)	Ground Water under the Influence of Surface Water
RES 1 SOUTH LINE INF GALL (A)	Ground Water under the Influence of Surface Water
RESERVOIR 3 COLLECTION BOX	Groundwater
RES 1	Ground Water under the Influence of Surface Water
RES 2	Ground Water under the Influence of Surface Water
WELL 3 (RESERVOIR 2)	Ground Water under the Influence of Surface Water
WELL 6	Groundwater

Buyer	Seller
BARRE TOWN WATER SYSTEM	BARRE CITY WATER SYSTEM

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(PFNA): Perfluorononanoic Acid

(PFOA): Perfluorooctanoic Acid

(PFOS): Perfluorooctane Sulfonic Acid

(PFHpA): Perfluoroheptanoic Acid

(PFHxS): Perfluorohexane Sulfonic Acid

Detected Contaminants GRANITEVILLE FIRE DISTRICT 4

Disinfection Residual	RAA	RANGE	Unit	MRDL	MRDLG	Typical Source
Chlorine	0.262	0.200 - 0.390	mg/l	4	4	Water additive to control microbes

Chemical Contaminants	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
Nitrate	05/18/2023	0.33	0.33 - 0.33	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

PFAS Contaminants	
Typical Source	A large group of human-made chemicals used widely in manufacturing and consumer products
MCL	20 (individual or sum of the 5 regulated PFAS compounds)
Units	All units in parts per trillion (ppt)

Collection Date	PFHpA	PFNA	PFHxS	PFOA	PFOS	Sum of 5 regulated PFAS compounds
06/15/2023	-	-	-	-	-	-
12/29/2020	-	-	-	-	-	-
11/30/2019	-	-	-	-	-	-

*Additional PFAS, not regulated by the Vermont Water Supply Rule, may also have been detected in the past five years. Please contact us if you would like more information on other unregulated PFAS that may be in your drinking water.

Radionuclides	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
Combined Radium (-226 & -228)	02/18/2022	0.7	0.7 - 0.7	pCi/L	5	0	Erosion of natural deposits
Radium-228	02/18/2022	0.7	0.7 - 0.7	pCi/L	5	0	Erosion of natural deposits

Disinfection ByProducts	Collection Year	Highest LRAA	Range	Unit	MCL	MCLG	Typical Source
Total Trihalomethanes	2023	18	2 - 6	ppb	80	0	By-product of drinking water chlorination
Total Haloacetic Acids (HAA5)	2023	9	0 - 0	ppb	60	0	By-product of drinking water chlorination

Lead and Copper	Collection Date	90th Percentile	Range	Unit	AL*	Sites Over AL	Typical Source
Lead	09/24/2022 - 09/28/2022	3.6	0 - 4.7	ppb	15	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	09/24/2022 - 09/28/2022	0.059	0 - 0.11	ppm	1.3	0	Corrosion of household plumbing systems; Erosion of natural deposits

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

**Complete lead tap sampling data (i.e. each individual sample result) are available for review. Please contact us if you would like to receive this data.

Violation(s) that occurred during the year

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. The below table lists any drinking water violations we incurred during 2023. A failure to perform required monitoring means we cannot be sure of the quality of our water during that time.

Type	Category	Analyte	Compliance Period
MONITORING, ROUTINE (DBP), MAJOR	Failure to Monitor	Disinfection Byproducts	04/01/2023 - 06/30/2023

To be Completed by the Water System. *List any steps taken to correct the violations listed above:*

Health Information Regarding Drinking Water

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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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Safe Drinking Water Hotline.

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. GRANITEVILLE FIRE DISTRICT 4 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 <http://www.epa.gov/safewater/lead>.

• **Per- and polyfluoroalkyl substances (PFAS):** PFAS are a group of human-made chemicals that have been in use since the 1940s. PFAS have been found in a wide variety of consumer products and as an ingredient in firefighting foam. PFAS manufacturing and processing facilities, airports, and military installations are some of the contributors of PFAS releases into the air, soil and water. Vermont currently regulates 5 PFAS and this list includes:

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(PFHxS): Perfluorohexane Sulfonic Acid

What could we expect to find in our water?

As water travels over the surface of land or through the ground it dissolves naturally occurring minerals and in some cases radioactive material. It can also pick up substances resulting from human activity or from the presence of animals.

Contaminants that may be present in source water include:

Microbial contaminants: such as viruses and bacteria, which may come from septic systems, agricultural livestock operations and wildlife;

Inorganic contaminants: like salts and metals, which can occur naturally or result from domestic waste water discharges and agricultural uses;

Pesticides and Herbicides: that may come from agriculture and residential uses;

Organic chemical contaminants: that include synthetic and volatile compounds coming from septic tanks and careless disposal of household chemicals, and

Radioactive contaminants: that occur naturally.

Who makes the decisions about our water?

Our City Council. We encourage public interest and participation in our community's decisions that affect drinking water.

How is this done?

By attending the Council meetings on **Tuesday evening at 7:00 p.m.**, in City Hall, **Council Chambers, at 6 North Main Street**, when there are water related issues on the agenda. The Saturday edition of our local newspaper publishes a notice of these meetings.

Health Information

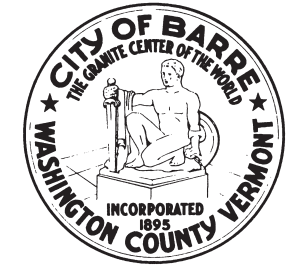
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City of Barre Water Dept.
6 North Main Street, Suite 5
Barre, VT 05641

City of Barre Water Quality Report 2023



We are proud to report that water provided to the greater Barre area meets or exceeds established water quality standards!

Why are we telling you this?

This is an annual report on the quality of water delivered by the City of Barre. It meets the **Federal Safe Drinking Water Act (SDWA)** requirement for “**Consumer Confidence Reports**” and contains information on the source of our water, what’s in the water and the health risks associated with any contaminants that may be present. Safe water is vital to our community. Please read this report carefully. If you have any questions, you may call the **Water Filtration Facility 476-6885**.

Where does our drinking water come from?

The City of Barre’s water supply is located in the Town of Orange. The surface water fed by streams and springs is stored in three impoundments known as The Thurman W. Dix Reservoir and the Upper and Lower Reservoirs. The Dix Reservoir, designed in 1950, holds almost all (93%) of the raw untreated water.

To help protect the area around the reservoirs, known as the watershed, Barre has developed a **Source Protection Plan** that was approved by the State of Vermont on Dec. 29, 1997, April 2008, 2011 and December 2015, and submitted 2021 pending review. The area totaling 11.1 square miles is broken down into three zones based on distance from the surface water supply.

The Plan provides a more comprehensive look at the possible sources of contamination within our watershed.

The 6 million gallon per day water treatment facility receives water directly from the Lower Orange Reservoir. Our treatment process reduces or eliminates turbidity, bacteria, viruses, parasites, color, taste, odor and organics.

The finished water is transported from the facility to the distribution system via a 20” cast iron water main. The system is comprised of two different zones known as the high and low pressure areas. These areas provide water for approximately **15,000** customers.

Public Notice: Permit to Operate Issued

- 1) On or before August 1, 2023 the permittee shall submit a construction permit application for the installation of the improvements selected in the approved PER 5254-1.
- 2) On or before August 1, 2024 the permittee shall complete the improvements authorized under the construction permit submitted per item II.B.1 of this permit. The water system has completed step one of submitting a construction permit, and is working to complete step two by August 1, 2024.

continued in right column

WATER QUALITY --- DATA TABLE --- 2023

Chemical Group	Units	MCL	MCLG	Highest Detected	Date	Average	Range	Vt. Health Advisory	Typical Source
Inorganics:									
Nitrate	ppm	10.0	10.0	0.16	3/15/2023	n/a	0.16 - 0.16	n/a	Runoff from fertilizer use; Leaching from septic tanks;sewage;Erosion of natural deposits
Cyanide	ppm	0.2	0.2	<0.010	7/26/2022	n/a	n/a	n/a	Poisons, metal plating & photo processing chemicals: industrial
Zinc	ppm	5.0		0.12	3/3/2003	n/a	n/a	n/a	Added as a corrosion inhibitor; Naturally occurring
Fluoride	ppm	4.0	4.0	0.95	8/20/2023	0.82	0.07 - 0.95	n/a	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Manganese	ppm	n/a	n/a	<0.010	7/26/2022	n/a	<0.010 - <0.010	n/a	Erosion of natural deposits. Vermont Department of Health has established a health advisory of 300 ppb. Manganese equal to or greater than 50ppb can lead to unacceptable taste or staining of fixtures.
Calcium	ppm	n/a	n/a	24.00	11/7/2018	n/a	24-24	n/a	
Hardness (As CaCO3)	ppm	n/a	n/a	67.00	11/7/2018	n/a	67-67	n/a	
Manganese	ppm	n/a	n/a	1.60	11/7/2018	n/a	1.6-1.6	n/a	
Disinfection Byproducts	Units	MCL	MCLG	Collection Year	Range	Highest LRAA	Health Adv	Typical Source	
Total Trihalomethanes	ppb	80.00	0.00	2023	14 - 93	49	n/a	n/a	By-product of drinking water chlorination
Total Haloacetic Acids	ppb	60.00	0.00	2023	14 - 58	33	n/a	n/a	By-product of drinking water chlorination
Pathogens	Date	MCL	MCLG	Highest Detected	Sample Year	Average	Range	Health Adv	Typical Source
E.coli/Total Coliform	Monthly	n/a	n/a	5.2	2018	n/a	0 - 5.2	n/a	Naturally occurring sampled from Orange Reservoir prior to treatment
Cryptosporidium	Monthly	n/a	n/a	0	2018	n/a	0	n/a	Naturally occurring sampled from Orange Reservoir prior to treatment
Giardia	Monthly	n/a	n/a	4.14	2018	0.30	0 - 4.14	n/a	Naturally occurring sampled from Orange Reservoir prior to treatment
Radionuclides:	Units	MCL	MCLG	Highest Detected	Date	Average	Range	Health Adv	Typical Source
Gross Alpha	pci/L	n/a	0	0.581	2/18/2021	n/a	0.581 - 0.581	n/a	Erosion of natural deposits
R226	pci/L	5.0	0	0.104	2/18/2021	n/a	0.104 - 0.104	n/a	Erosion of natural deposits
R228	pci/L	5.0	0	0.818	2/18/2021	n/a	0.818 - 0.818	n/a	Erosion of natural deposits
Combined Radium	pci/L	5.0	0	0.922	2/18/2021	n/a	0.922 - 0.922	n/a	Erosion of natural deposits
Lead & Copper	Units	Action Level	Range	90th Percentile	Sampling Date	Sites over Action level	Total # of Sites Sampled	Health Adv	Typical Source
Lead	ppb	15 ppb	0 - 130	1.40	6/15/21 - 7/25/21	2	30	n/a	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	ppm	1.3 ppm	0 - 0.42	0.091	6/15/21 - 7/25/21	0	30	n/a	Corrosion of household plumbing systems; Erosion of natural deposits;leaching from wood preservatives
Contaminant Detected	Units	MCL	MCLG	Lowest Monthly % of samples Meeting MCL	Average	Highest Detected	Date	Health Advisory	Typical Source
Turbidity	ntu	0.30	n/a	100.00	0.050	0.085	11/16/22	n/a	Soil run-off; Turbidity is a measure of cloudiness in the water; It’s a good indicator of the quality of water.
Disinfectant	Unit	MRDL	MRDLG	RAA	Range	Sample Year	Health Adv	Typical Source	
Chlorine	mg/L	4.00	4.00	0.68	0.12 - 1.10	2023	n/a	n/a	Water additive to control microbes

Our Water System has sampled a series of unregulated contaminants. Unregulated contaminants are those that don’t yet have a drinking water standard set by EPA. There may be Vermont-specific standards for some of these contaminants. The purpose of monitoring for these contaminants is to help the EPA decide whether the contaminants should have a standard. As our customers, you have a right to know that this data is available. We had no reported detections for samples collected under UCMR 5. If you are interested in examining the results, please contact Brian Baker at 802-476-0250 or pwdirector@barrecity.org.

As required by the Lead and Copper Rule Revision, we have prepared a service line inventory. The purpose of the inventory was to determine if any of our service lines contain lead, galvanized pipe requiring removal, or unknown materials. Please contact us if you would like access to this inventory.

PFAS Contaminants						
Typical Source	A large group of human-made chemicals used widely in manufacturing and consumer products					
MCL	20 (individual or sum of the 5 regulated PFAS compounds)					
Units	All units in parts per trillion (ppt)					
Collection Date	PFHpA	PFNA	PFHxS	PFOA	PFOS	Sum of 5 Regulated PFAS compounds
6/13/2023	-	-	-	-	-	-
12/7/2020	-	-	-	-	-	-
10/11/2019	-	-	-	-	-	-

Key to Water Quality Data Table

The table below lists all the drinking water contaminants 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. The presence of these contaminants in the water does not necessarily show that the water poses a health risk.

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.
- **Corrosion Control Efforts:** Treatment (including pH adjustment, alkalinity adjustment, or corrosion inhibitor addition) or other efforts contributing to the control of the corrosivity of water, e.g., monitoring to assess the corrosivity of water.

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 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 (µg/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).