BARRE TOWN WATER SYSTEM – VT0005566

Consumer Confidence Report – 2016

This report is a snapshot of the quality of the water that we provided in 2016. 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 evenings at 6:30 P.M. at the Barre Town Municipal Building, 149 Websterville Road, Websterville, VT.

The persons who can answer questions about this report are: Town Engineer, Harry H. Hinrichsen

Telephone: 802-479-2595 and/ or Email hhinrichsen@barretown.org or

Water System Operator, Jay Hrubovcak Telephone: 802-476-3522

and/ or Email jhrubovcak@barretown.org

Water Source Information

Your water comes from

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

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.

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

Parts per million (ppm) or Milligrams per liter (mg/l): (one penny in ten thousand 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 BARRE TOWN WATER SYSTEM

Disinfection Residual	RAA	Range	Unit	MRDL	MRDLG	Typical Source
Chlorine	0.274	0.020 - 0.750	mg/l	4.0	4.0	Water additive to control microbes

Microbiological	Result	MCL *	MCLG	Typical Source
No Detected Results were Found in the Calendar Year of 2016				

*As of April 1, 2016, there is no MCL for total coliform. Instead more than 1 positive monthly sample requires a treatment technique.

Chemical Contaminants	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
Barium	01/23/2014	0.022	0.022 - 0.022	ppm	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Methyl Tert-Butyl Ether (MTBE)	02/13/2014	1.1	1.1 - 1.1	ppb			
Nitrate	02/04/2016	1.5	1.5 - 1.5	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	01/23/2014	0.672	0.672 - 0.672	pCi/L	5	0	Erosion of natural deposits
Gross Alpha	03/26/2015	0.157	0.157 - 0.157	pCi/L	15	0	Erosion of natural deposits
Radium-226	01/23/2014	0.064	0.064 - 0.064	pCi/L	5	0	Erosion of natural deposits
Radium-228	01/23/2014	0.608	0.608 - 0.608	pCi/L	5	0	Erosion of natural deposits

Disinfection By-Products	Monitoring Period	LRAA	Range	Unit	MCL	MCLG	Typical Source
Total Haloacetic Acids (HAA5)	2016	21	0 - 22.8	ppb	60	0	By-product of drinking water disinfection
Total Trihalomethanes	2016	41	18.6 - 47.7	ppb	80	0	By-product of drinking water chlorination

Lead and Copper	Date	90th Percentile	Range	Unit	AL*	Sites Over AL	Typical Source
Copper	2013 to 2015	0.51	0.053 - 0.66	ppm	1.3	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead	2013 to 2015	5	0 - 6	ppb	15	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.

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 our drinking water meets health standards. The below table lists any drinking water violations we incurred during 2016. 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
No Violations Occurred in the Calendar Year 2016			

Revised Total Coliform Rule (RTCR) TT Violation(s)
No RTCR TT Violations

Additional information (including steps taken to correct any violations listed above)

Level 1 Assessment(s) No Level 1 Assessment was required.
Level 2 Assessment(s) No Level 2 Assessment was required.

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.

Public Notice - 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	Deficiency	Facility
No Significant Deficiencies		

Graniteville Fire District #4 VT0005248
PO Box 206, Graniteville, VT 05654

Consumer Confidence Report (CCR) 2016

This is a municipally owned full service water system serving the Graniteville area of Barre Town and the Cogswell and Robar Road area of Williamstown. The office and filtration plant is located at 189 McCarty Road. There is an interconnection with the Barre Town water system located at 536 Graniteville Road - near the Rock of Ages visitor center. This interconnection is used for both purchases and sales of water. Graniteville Fire District operates in its' own entity and not part of Barre Town. Please call the office telephone number (802)479-9155 for any questions or problems.

The water system is governed by a three member Prudential Committee. A clerk records minutes and other actions of the governing board. Accounting etc., is now contracted with Batchelder Associates. An annual report is provided prior to the annual meeting which is usually held in late October each year.

Prudential Committee members are Marc Bernier, Henry Laperle and Jenny Malnati.
Operators are Jaime DeForge, Jaime Babin, Merle Miller and Karin Babin. Monthly meetings of the governing board are held on the second Monday of every month at the Quarry Hill Apartments community room at 604 Graniteville Road. The office telephone number is (802)479-9155 and an answering machine message lists contacts for emergencies.

Customers and voters are welcome and encouraged to actively participate in the management of the water system by attending meetings and keeping posted on the activities of the board. Qualified candidates for new offices are welcome. A free tour of the treatment plant is available by appointment.

This report is a snapshot of the quality of water provided in 2014. Included are details about where the water comes from, what it contains, and how it compares with Federal and State standards.

Sources of Water:
There are numerous natural springs and three drilled wells used to furnish water to the water treatment plant (filtration system). There is an interconnections with Barre Town water system used to purchase water (surface water) when necessary, and to furnish water to the Barre Town water system when they need water (if a surplus exists).

Permits:
The water system is permitted by the State Agency of Natural Resources. Other plans approved by the State are: bacteriological sampling plan, lead and copper sampling plan, disinfection byproducts compliance monitoring plan (stage 1), disinfection byproducts compliance monitoring sampling plan (stage 2), source protections 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 used less than once a year. The presence of these contaminants in the water does not necessarily show that the water poses a health risk.

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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 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 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 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.
Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water.
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 billion (ppb) or Micrograms per liter (ug/l): (one penny in ten million dollars)
Parts per million (ppm) or Milligrams per liter (mg/l): (one penny in ten thousand 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 drinker water.
90th Percentile: Ninety percent of the samples are below the action level. (Nine of ten sites sampled were at or below this level).

Disinfection Residual	RAA	Range	Unit	MRDL	MRDLG	Typical Source
Chlorine	0.212	0.100-0.300	mg/l	4.0	4.0	Water additive to control microbes

Microbiological	Result	MCL*	MGLG	Typical Source
No Detected Results were Found in the Calendar Year of 2016				

*As of April 1, 2016, there is no MCL for total coliform. Instead more than 1 positive monthly sample requires a treatment technique.

Chemical Contaiminants	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Typical Source
Nitrate	6/22/2016	0.24	0.24-0.24	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	1/17/2013	1.47	1.47-1.47	pCi/L	5	0	Erosion of natural deposits
Gross Alpha	1/17/2013	0.291	0.291-0.291	pCi/L	15	0	Erosion of natural deposits
Radium-226	1/17/2013	1.24	1.24-1.24	pCi/L	5	0	Erosion of natural deposits
Radium-226	1/17/2013	0.233	0.233-0.233	pCi/L	5	0	Erosion of natural deposits

Disinfection ByProducts	Monitoring Period	LRAA	Range	Unit	MCL	MCLG	Typical Source
Total Trihalomethanes	7/8/1905	5	0 - 15.7	ppb	80	0	By-product of drinking water chlorination

Lead and Copper	Date	90th Percentile	Range	Unit	AL*	Sites Over AL	Typical Source
Copper	2013-2015	0.3	0.021 - 0.31	ppm	1.3	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead	2013-2015	4	0 - 8	ppb	15	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.

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 2016. A failure to perform required monitoring means we cannot be sure of the quality of our water during that time.

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Additional information (including steps taken to correction any violations listed above)

Level 1 Assessment(s)
No Level 1 Assessment was required.

Level 2 Assessment(s)
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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 (1-800-246-4791).

Drinking water, including bottled water, may be 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 woman 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.

Public Notice – 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	Deficiency	Facility
No Significant Deficiencies		

To be completed by the Water System:
List interim measures, progress to date and any interim measures completed for deficiencies listed above.

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.
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In October we started monthly untreated water monitoring for the parasitic organisms cryptosporidium, giardia and E coli. Monthly monitoring is for a period of 24 consecutive months.

Key maintenance activities include: Replacement of stand by generator #1 inner cooler and turbo charger, replaced pre-treatment chemical powdered activated carbon venturi inductor, Replaced lab bench top turbidimeter, Upgraded faulty radio telemetry system in order to reliably communicate with remote sites.

• 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. The City of Barre 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 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.

Key to Water Quality Data Table

• **Maximum Contaminant level (MCL):** The highest level of a contaminant that is allowed in drinking water.

MCLs are set as close to the MCLG as feasible using the best available treatment.

• **Maximum Contaminant level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

• **Action level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

• **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).

• **Parts per Million (ppm) or Milligrams per Liter (mg/L):**

One penny in $10,000.

• **Parts per Billion (ppb) or Micrograms per Liter (ug/L):**

One penny in $10 million dollars.

• **Picocuries per Liter (pci/L):** A measure of radioactivity.

• **NTUs:** Nephelometric Turbidity Units

• **n/a:** Not Applicable

• **MRDL** Maximum Residual Disinfectant Level

• **MRDLG** Maximum Residual Disinfectant Goal

*The Water System is responsible for the collection of a minimum of 15 bacteriological samples per month.

Health Information

The **EPA (Environmental Protection Agency)** establishes regulations that limit the amount of certain contaminants in drinking water, thus providing the consumer with water that is both palatable and potable (safe). Also, the **FDA (Food & Drug Administration)** promulgates rules and restrictions that limit contaminants in the bottled water industry in order to provide the same protection for the general public.

All drinking water, including bottled water, may contain small amounts of contaminants. Their presence does not always mean that water poses a health risk. However, some people may be more vulnerable to contaminants in drinking water than the general public. Immunocompromised persons with cancer who are undergoing chemotherapy, who have had organ transplants, who suffer from HIV/AIDS or other immune system disorders may be more susceptible to infections. Other groups at greater risk to infections would be the elderly and infant populations. These people should seek advice from their health care provider.

You can contact **EPA's Safe Drinking Water Hotline** at **1-800-426-4791** for more information about contaminants in drinking water and their potential health effects. Their guidelines will provide measures to lessen the risk of infection by Cryptosporidium, Giardia, and other microbial contaminants.

City of Barre Water Quality Report 2016

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.

WATER QUALITY --- DATA TABLE --- 2016

Chemical Group	Units	MCL	MCLG	Highest Detected Level	Date	Avg.	Range	VL Health Advisory	Additional Information	Likely Source of Contaminant	Violation Yes or No
Inorganics:											
Nitrate as Nitrogen	ppm	10.0	10.0	0.06	1/6/2016	n/a	n/a	n/a		Runoff from fertilizer use;	No
Strontium	ug/L			89.00						Naturally Occuring	
Sodium	ppm	2.0	2.0	0.02	1/12/2015	n/a	n/a	n/a		Poisons, metal plating & anods	No
Cyanide	ppm	0.2	0.2	<0.01*	7/29/2013	n/a	n/a	n/a		processing chemicals, industrial	No
Hexavalent Chromium	ug/L			0.09						Naturally Occuring	
Zinc	ppm	5.0		0.12	2/3/2003	n/a	n/a	n/a	Added as a corrosion inhibitor	Naturally Occurring	No
Chloride	ug/L			520.00						Product of chlorination	
Fluoride	ppm	4.0	4.0	0.66	6/30/2016	0.73	0.59 - 0.86	n/a	Fluoride is added to promote dental	Erosion of natural deposits	No
									health / Prevention of tooth decay	discharge from fertilizer	
Manganese	ppm	0.05		0.01	4/19/2016	n/a	n/a	n/a			
Organics:											
Bromodichloromethane	ppb	n/a	n/a	5.40	10/14/2016	3.50	1.5 - 5.4	None	n/a	By-product of chlorination	No
Chloroform	ppb	n/a	n/a	54.20	10/14/2016	31.38	13.4 - 54.2	None	n/a	By-product of chlorination	No
Monochloroacetic Acid	ppb	n/a	n/a	5.00	10/14/2016	5.00	0.0 - 5.0	n/a	n/a	By-product of chlorination	No
Dichloroacetic Acid	ppb	n/a	n/a	23.80	1/25/2016	9.75	3.7 - 23.8	n/a	n/a	By-product of chlorination	No
Dibromoacetic Acid	ppb	n/a	n/a	3.00	1/25/2016	3.00	0.0 - 3.0	n/a	n/a	By-product of chlorination	No
Monobromoacetic	ppb	n/a	n/a	3.00	1/25/2016	3.00	0.0 - 3.0	n/a	n/a	By-product of chlorination	No
Trichloroacetic Acid	ppb	n/a	300.00	31.60	1/25/2016	12.00	6.1 - 31.6	n/a	n/a	By-product of chlorination	No
Total Trihalomethanes	ppb	80.00	0.00	60.60	10/14/2016	34.79	14.9 - 60.6	n/a	n/a	By-product of chlorination	No
Total Haloacetic Acids	ppb	60.00	n/a	55.20	1/25/2016	21.77	14.2 - 55.2	n/a	n/a	By-product of chlorination	No
Pathogens	**Date**	**#/100ml**	**Date**	**#/100ml**	**Date**	**#/100ml**					
E.coli/Total Coliform	10/16/2016	1/164.2	11/15/2016	0/42	12/13/2016	0/0			Naturally occurring sampled from Orange Reservoir prior to treatment		
Cryptosporidium	10/16/2016	0/Liter	11/15/2016	0/Liter	12/13/2016	0/Liter			Naturally occurring sampled from Orange Reservoir prior to treatment		
Giardia	10/16/2016	0.45/L	11/15/2016	0.76/Liter	12/13/2016	0/Liter			Naturally occurring sampled from Orange Reservoir prior to treatment		
Radionuclides:											
Gross Alpha	pci/L	15.0	n/a	0.384+/- 0.58	1/20/2015	n/a	n/a	n/a	n/a	Erosion of natural deposits	No
R228	pci/L	5.0	n/a	0.227+/- 0.425	1/22/2015	n/a	n/a	n/a	n/a	Erosion of natural deposits	No
R226	pci/L	5.0	n/a	0.152+/- 0.305	1/22/2015	n/a	n/a	n/a	n/a	Erosion of natural deposits	No

Chemical Group	Contaminant Detected	Action Level	90th Percentile	Sampling Date	# of Sites That Exceeded The Action Level	Total # of Sites Sampled		Likely Source of Detected Contaminant		Violation Yes or No
Lead & copper										
Action Levels	Copper	1.3 mg/L	0.620	June- Oct. 2015	0	31		Corrosion of household plumbing systems		No
	Lead	15 ppb	0.01 mg/L	June -Oct. 2015	2 - 648.088ppm	31		Corrosion of household plumbing systems		No

Contaminant Detected	Units	MCL	MCLG	Lowest Monthly % of Samples Meeting MCL	Highest Measurement Date	Average	Violation Yes or No		Additional Information	Likely Source of Contamiant
Turbidity	ntu	0.30	n/a	100.00	5/20/2016	0.050	No		Turbidity is a measure of cloudiness in the water. It is a good indicator of the quality of water.	Soil run-off
					0.05					

Disinfectant		MRDL	MRDLG	Finish Water Ave.
Chlorine	ppm	4.00	0.20	0.99

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. 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.

Highlights of 2016

Public Notice - Permit to Operate Issued December 17, 2013: The Water System is required to notify all users of the following compliance schedule contained in the Permit to Operate issued by the State of Vermont Agency of Natural Resources:

1. On or before September 1, 2014, if the Permittee shall: a. Modify all in-home booster pumping systems to meet the Secretary's design standards, including a properly located and sized air gap, and obtain the Secretary's approval for each in-home booster pumping system;

A time extension was requested from the Vermont Water Supply Division. The requested extension to May 31, 2015 was due to two in home booster systems that did not have adequate time to complete the required tank overflow piping.

All privately owned systems have complied. Annual inspections by Facility Operators will be conducted after the spring thaw.

2. The Facility produced 492.75 gallons. Production averaged 1.35 million gallons per day.