

## ***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***

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 2018**



**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 476-6985.

## 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 2018

1. The Water system was required to sample for Unregulated Contaminants as specified by the Environmental Protection Agency's Unregulated Contaminant Monitoring 4 rule. Total Organic Carbon was measured at 3 mg/L and Bromide was recorded at 0.005 mg/L. The reporting limit for TOC is 0.5 mg/L and bromide is 0.005 mg/L. Total Organic Carbon is a non-specific indicator of water quality. Many other contaminants were tested for with them being under the reported detection limit. We can supply the testing list and if interested please call the Water department office at (802) 476-0250. We occasionally receive requests for the following chemical constituents: Alkalinity 53 mg/L, Hardness 67 mg/L, Calcium 24 mg/L, and magnesium 1.6 mg/L

2. The Facility produced 452.6 million gallons. Production averaged 1.24 million gallons per day

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## WATER QUALITY -- DATA TABLE -- 2018

Chemical Group	Units	MCL	MCLG	Highest Detected Level	Date	Avg.	Range	VI Health Advisory	Additional Information	Likely Source of Contaminant	Violation Yes or No
<b>Organics:</b>											
Bromochloroethane	ppb	na	na	4.50	10/19/2018	2.56	1.3 - 4.5	None	na	By-product of chlorination	No
Chloroform	ppb	na	na	40.70	7/17/2018	24.43	10.0 - 40.7	None	na	By-product of chlorination	No
Monochloroacetic Acid	ppb	na	na	5.00	1/23/2018	5.00	0.0 - 5.0	na	na	By-product of chlorination	No
Dichloroacetic Acid	ppb	na	na	15.30	7/17/2018	10.18	3.6 - 15.3	na	na	By-product of chlorination	No
Trichloroacetic Acid	ppb	na	na	3.00	1/23/2018	3.00	0.0 - 3.0	na	na	By-product of chlorination	No
Trichloroethylene	ppb	na	na	300.00	4/17/2018	12.43	8.1 - 17	na	na	By-product of chlorination	No
Total Trihalomethane	ppb	80.00	0.00	43.90	7/17/2018	21.00	10.1 - 43.9	na	na	By-product of chlorination	No
Total Haloacetic Acids	ppb	61.00	na	21.70	7/17/2018	22.62	14.1 - 31.7	na	na	By-product of chlorination	No
<b>Pathogens</b>											
E.coli Total Coliform	monthly	na	na	5	2018	0	0 - 5	0.52	Naturally occurring sampled from Orange Reservoir prior to treatment		No
Cryptosporidium	monthly	na	na	0.00	2018	0.00	0.00	0.00	Naturally occurring sampled from Orange Reservoir prior to treatment		No
Giardia	monthly	na	na	4.14	2018	0.30	0 - 4.14	0.414	Naturally occurring sampled from Orange Reservoir prior to treatment		No
<b>Radionuclides:</b>											
Gross Alpha	ppc/L	15.0	na	0.3844 - 0.50	1/20/2018	na	na	na	na	Erosion of natural deposits	No
R226	ppc/L	5.0	na	0.3274 - 0.425	1/22/2018	na	na	na	na	Erosion of natural deposits	No
R228	ppc/L	5.0	na	0.1597 - 0.309	1/22/2018	na	na	na	na	Erosion of natural deposits	No
<b>Chemical Group</b>											
Lead & Copper Action Levels	Copper	1.3	0.015	0.02	June, Sept. 2018	0	0	31	Comparison 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 Contaminant	Violation Yes or No	
Turbidity	ntu	0.30	na	100.00	7/6/2018	0.040	No	Turbidity is a measure of cloudiness in the water. It is a good indicator of the quality of water.	Soil run-off	No	
Disinfectant Chlorine	ppm	4.00	0.20	0.95							

Key maintenance activities include: The installation of 5 new 2,000 gallon underground propane storage tanks, Rebuilt Facility water pump #2. Replaced 6,000 gallon fiberglass sodium hypochlorite tank with 3 - 1,800 gallon high density polyethylene tanks, replaced polyaluminum chloride chemical feed pump, replaced sodium hydroxide chemical feed pump, annual maintenance for 2 stand-by propane generators.

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. MCLGs 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.