# 2020 Consumer Confidence Report

**For**

# Municipal Well

## Carver, Massachusetts

**PWS # 4052061**

**Based on Water Quality Analysis Done In 2019**

This report is a snapshot of your drinking water quality in 2019. This document is required of all water systems and is updated & distributed annually. It summarizes all the water quality testing that was done on your water supply in 2019, as well as the details about your water sources and distribution water system. Please take time to review this report and save it as a reference.

## PUBLIC WATER SYSTEM INFORMATION

**Water System Improvements**

Your water system is routinely inspected by the Massachusetts Department of Environmental Protection (MassDEP), who inspects this system for its technical, financial, and managerial capacity to provide safe drinking water. Your water system is operated by *Small Water Systems Services, LLC (SWSS)* a MA certified, contract operations firm.

**Opportunities for Public Participation**

If you would like to participate in discussions regarding your water quality, you may attend meetings or educational events. *The Board of Selectmen meets every other Tuesday, contact The Carver Town Hall for more information, 508-866-3400.*

## YOUR DRINKING WATER SOURCE

**Where Does My Drinking Water Come From?**

The water from the Carver Municipal Well (Well 01G) supplies the Carver Municipal Complex. It is an eight inch well drilled to 250ft located 250 feet northeast of the library parking lot. There are 2 wells (02G and 03G) that are used for emergency purposes only. There is a pump house located 250ft southwest of the well containing a treatment system (for sequestering Iron and Manganese) and a water storage tank.

**Is My Water Treated?**

Sequestration (for iron & manganese)

Iron and manganese are often present in groundwater at levels that can discolor the water or cause it to take on unpleasant odors or tastes. Even though the water may still be safe to drink, treatment is often desirable. Treatment consists of adding hexametaphosphate to the water. This results in a chemical reaction, known as sequestration, which prevents the iron and manganese from forming nuisance particles. All chemicals used for sequestration are approved for water treatment by one of the following organizations: National Sanitation Foundation (Now known as NSF International or UL, both accredited by the American National Standards Institute (ANSI). Chemicals must also meet standards established by the American Water Works Association (AWWA).

NOTE: The treatment system is currently under review by an Engineering Firm in order to upgrade the system to provide more effective removal of iron and manganese.

**How Are These Sources Protected?**

MassDEP has prepared a Source Water Assessment Program (SWAP) Report for the water supply source(s) serving this water system. The SWAP Report assesses the susceptibility of public water supplies.

**What is My System's Ranking?**

A susceptibility ranking of moderate was assigned to this system using the information collected during the assessment by MassDEP.

**Where Can I See the SWAP Report?**

The complete SWAP report is available online at https://www.mass.gov/service-details/the-source-water-assessment-protection-swap-program . For more information, contact The Carver Town Hall on 108 Main Street in Caver.

**What Can Be Done to Improve Protection?**

Residents can help protect sources by:

- Practicing good septic system maintenance
- Supporting water supply protection initiatives at the next town meeting
- Taking hazardous household chemicals to hazardous materials collection days
- Contacting the water department or Board of Health to volunteer for monitoring or education outreach to schools
- Limiting pesticide and fertilizer use, etc.

## SUBSTANCES FOUND IN TAP WATER

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals, and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

**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 stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, and farming.

**Pesticides and herbicides** -which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

**Organic chemical contaminants** -including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

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

In order to ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

All 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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on lowering the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Municipal Wells of Carver, MA 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.

## IMPORTANT DEFINITIONS

**Maximum Contaminant Level (MCL)** – The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**Maximum 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 (AL)** – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

**90$^{th}$ Percentile** – Out of every 10 homes sampled, 9 were at or below this level.

**Secondary Maximum Contaminant Level (SMCL)** – These standards are developed to protect the aesthetic qualities of drinking water and are not health based.

**Massachusetts Office of Research and Standards Guideline (ORSG)** – This is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.

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

**Running Annual Average (RAA)** – The average of four consecutive quarter of data.

**Maximum Residual Disinfectant Level (MRDL) --** The highest level of a disinfectant (chlorine, chloramines, chlorine dioxide) allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG)** -- The level of a drinking water disinfectant (chlorine, chloramines, chlorine dioxide) below which there is no known expected risk to health.
MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Ppm = parts per million, or milligrams per liter (mg/l) ppb = parts per billion, or micrograms per liter (ug/l)
Ppt = parts per trillion, or nanograms per liter pCi/l = picocuries per liter (a measure of radioactivity)
NTU = Nephelometric Turbidity Units ND = Not Detected N/A = Not Applicable
mrem/year = millimrems per year (a measure of radiation absorbed by the body)

## WATER QUALITY TESTING RESULTS

**What Does This Data Represent?**
The water quality information presented in the table is from the most recent round of testing done in accordance with the regulations. All data shown was collected during the last calendar year unless otherwise noted in the table.

MassDEP has reduced the monitoring requirements for inorganic contaminants, synthetic organic contaminants and perchlorate because the source is not at risk of contamination. The last sample collected on 7/16/19 for these contaminants, including perchlorates at 0.17 ppb, were all found to meet applicable US EPA and MassDEP standards.

| | Date(s) Collected | 90TH percentile | Action Level | MCLG | # of sites sampled | # of sites above Action Level | Possible Source of Contamination |
|---|---|---|---|---|---|---|---|
| Lead (ppb) | 7/16/19 | 2.5 | 15 | 0 | 5 | 0 | Corrosion of household plumbing systems; Erosion of natural deposits |
| Copper (ppm) | 7/16/19 | 0.915 | 1.3 | 1.3 | 5 | 0 | Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives |

| Bacteria | MCL / TT | MCLG | Value | Date | Violation (Y/N) | Possible Sources |
|---|---|---|---|---|---|---|
| Total Coliform Bacteria | 0 | 0 | -- | -- | N | Human and animal fecal waste |

| Regulated Contaminants | Date(s) Collected | Result | MCL | MCLG | Violation (Y/N) | Possible Sources |
|---|---|---|---|---|---|---|
| Total Trihalomethane (ppb) | 9/10/19 | 13.3 | 80 | N/A | No | Byproduct of drinking water disinfection. |

Unregulated contaminants are those for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future regulation is warranted.

| Unregulated Contaminants | Date(s) Collected | Result or Range Detected | Average Detected | SMCL | ORSG | Possible Source |
|---|---|---|---|---|---|---|
| Chlorodibromomethane | 7/16/19 | 0.56 | -- | N/A | N/A | Found in chlorinated drinking-water as a consequence of the reaction between chlorine |
| Bromodichloromethane | 9/10/19 | 4.37 | 1.3 | N/A | N/A | Trihalomethane; by-product of drinking water chlorination |
| Chloroform (ppb) | 9/10/19 | 2.91 | 1.9 | N/A | 70 | By-product of drinking water chlorination (In non-chlorinated sources it may be naturally occurring) |
| Dibromodichloromethane | 9/10/19 | 4.58 | 0.95 | N/A | N/A | Trihalomethane; By-product of drinking water chlorination |

| | | | | | | |
|---|---|---|---|---|---|---|
| Bromoform | 9/10/19 | 1.35 | -- | N/A | N/A | Trihalomethane; by- product of drinking water chlorination |
| Ethylbenzene (ppb)* | 8/21/18 & 11/13/18 | ND – 0.7 | 0.35 | 700 | 700 | Leaks and spills from gasoline and petroleum storage tanks |
| Xylenes (ppm)* | 8/21/18 & 11/13/18 | ND – 8.6 | 4.3 | 10 | 10 | Leaks and spills from gasoline and petroleum storage tanks; discharge from petroleum factories; discharge from chemical factories |
| Sodium (ppm) | 8/21/18 | 14.5 | -- | N/A | 20 | Discharge from the use and improper storage of sodium-containing de-icing compounds or in water-softening agents |
| * All VOC's reported did have detections on 8/21/18 and were resampled again on 11/13/18. All resamples were ND and not violations. | | | | | | |
| **Secondary Contaminants** | **Date(s) Collected** | **Result or Range Detected** | **Average Detected** | **SMCL** | **ORSG** | **Possible Source** |
| Aluminum (ppb) | 7/16/19 | 17 | - | | 200 | Residue from water treatment process: erosion of natural deposits |
| Chloride (ppm) | 7/16/19 | 34 | -- | 250 | 250 | Runoff and leaching from natural deposits; seawater influence |
| Manganese* (ppb) | 4/16/19, 7/16/19 10/23/19 | ND - 62 | -- | 50 | Health Advisory of 300 | Natural sources as well as discharges from industrial uses |
| * EPA has established a lifetime Health Advisory (HA) for manganese of 0.3 mg/L and an acute HA at 1.0 mg/L (Add health language listed below if detect is over 300 ppb ) | | | | | | |
| Sulfate (ppm) | 7/16/19 | 6.0 | -- | 250 | N/A | Runoff and leaching from natural deposits; industrial wastes |
| Total Dissolved Solids (ppm) | 7/16/19 | 130 | -- | 500 | N/A | Erosion of natural deposits. |

## COMPLIANCE WITH DRINKING WATER REGS

**Does My Drinking Water Meet Current Health Standards?**

We are committed to providing you with the best water quality available. We are proud to report that last year your drinking water met all applicable health standards regulated by the state and federal government.

## EDUCATIONAL INFORMATON

**Do I Need to Be Concerned about Certain Contaminants Detected in My Water?**

While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Manganese is a naturally occurring mineral found in rocks, soil and groundwater, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but can have undesirable effects on certain sensitive populations at elevated concentrations. The United States Environmental Protection Agency (EPA) and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 ug/L (micrograms per liter), or 50 parts per billion, and health advisory levels. In addition, EPA and MassDEP have also established public health advisory levels. **Drinking water may naturally have manganese and, when concentrations are greater than 50 µg/L, the water may be discolored and taste bad. Over a lifetime, EPA recommends that people drink water with manganese levels less than 300 µg/L and over the short term, EPA recommends that people limit their consumption of water with levels over 1000 ug/L, primarily due to concerns about possible neurological effects. Children up to 1 year of age should not be given water with manganese concentrations over 300 ug/L, nor should formula for infants be made with that water for longer than 10 days.** See: http://www.epa.gov/safewater/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf.

Sodium sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the sodium levels where exposures are being carefully controlled.

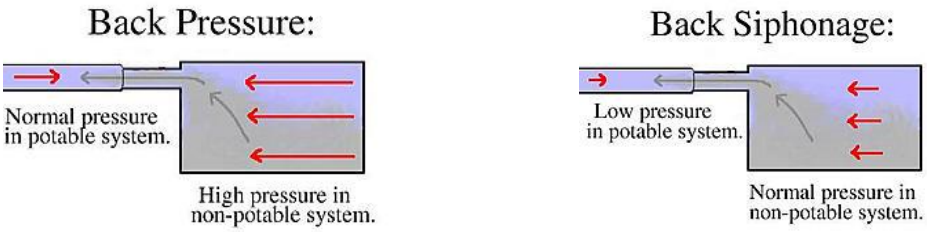
**Cross-Connection Control and Backflow Prevention**

The Municipal Wells of Carver, MA makes every effort to ensure that the water delivered to your home and business is clean, safe and free of contamination. Our staff works very hard to protect the quality of the water delivered to our customers from the time the water is extracted via deep wells from underground aquifers or withdrawal point from a surface water

source, throughout the entire treatment and distribution system. But what happens when the water reaches your home or business? Is there still a need to protect the water quality from contamination caused by a cross-connection? If so, how?

**What is a cross-connection?**
A cross-connection occurs whenever the drinking water supply is or could be in contact with potential sources of pollution or contamination. Cross-connections exist in piping arrangements or equipment that allows the drinking water to come in contact with non-potable liquids, solids, or gases (hazardous to humans) in event of a backflow.

**What is a backflow?**
Backflow is the undesired reverse of the water flow in the drinking water distribution lines. This backward flow of water can occur when the pressure created by equipment or a system such as a boiler or air-conditioning is higher than the water pressure inside the water distribution line (back pressure), or when the pressure in the distribution line drops due to routine occurrences such as water main breaks or heavy water demand causing the water to flow backward inside the water distribution system (back siphonage). Backflow is a problem that many water consumers are unaware of, a problem that each and every water customer has a responsibility to help prevent.




**What can I do to help prevent a cross-connection?**
Without the proper protection something as simple as a garden hose has the potential to contaminate or pollute the drinking water lines in your house. In fact over half of the country's cross-connection incidents involve unprotected garden hoses. There are very simple steps that you as a drinking water user can take to prevent such hazards, they are:

- NEVER submerge a hose in soapy water buckets, pet watering containers, pool, tubs, sinks, drains, or chemicals.
- NEVER attached a hose to a garden sprayer without the proper backflow preventer.
- Buy and install a hose bibb vacuum breaker in any threaded water fixture. The installation can be as easy as attaching a garden hose to a spigot. This inexpensive device is available at most hardware stores and home-improvement centers.
- Identify and be aware of potential cross-connections to your water line.
- Buy appliances and equipment with backflow preventers.
- Buy and install backflow prevention devices or assemblies for all high and moderate hazard connections.

## ADDITIONAL INFORMATION

*Small Water Systems Services, LLC* has been contracted on an annual basis to provide licensed water operator coverage for the water system serving Carver Municipal Buildings. It is our responsibility to maintain the system's compliance with all drinking water operation requirements. We monitor your drinking water, routinely evaluating the water quality entering your distribution system and inspecting the systems regularly. For more information, call your operators at *SWSS* at 978-486-1008.