

WAREHAM FIRE DISTRICT
WATER DEPARTMENT
2550 CRANBERRY HIGHWAY
WAREHAM, MA 02571



2014 CONSUMER CONFIDENCE REPORT

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

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

Maximum Contaminant (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.

Secondary Maximum Contaminant Level (SMCL): Standards for SMCL are established based on aesthetic considerations, State DEP recommended annual sampling but not required.

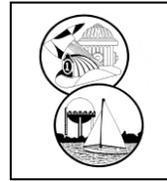
Radon is a radioactive gas that you cannot see, taste, or smell. Radon can move up through the ground and into a home through cracks in the foundation. Radon can build up to high levels in all types of homes. Radon can also be released from tap water when showering, washing dishes, or doing other household activities. Compared to radon entering the home through soil, radon from tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air-containing radon can lead to lung cancer. Drinking water containing radon may also cause increase risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 Pico curies per liter of air (pCi/l) or higher. There are simple ways to fix a radon problem that are not too costly. For additional information, call your State radon program or call EPA's Radon Hotline (800.SOS.RADON).

Glen Charlie Road Glass Fused Water Storage Tank



Board of Water Commissioners
Edward J. Tamagini, III, Chair
John B. English, III, Vice-Chair
Ted Hatch, Clerk

2014 Consumer Confidence Report
Wareham Fire District Water Department
Wareham, MA
PWSID MA4310000



The Wareham Fire District Water Department is pleased to present to you our Annual Drinking Water Quality Consumer Confidence Report (CCR). This report is designed to inform you about your drinking water. Through this report, we hope to ensure you that we are providing a safe and dependable supply of drinking water. We are committed to ensuring the quality of your water.



WATER SOURCE - Wareham's water originates from seven gravel packed wells within the Plymouth-Carver sole source aquifer. Each well is drilled to a depth of 60-90 feet. The wells are located in isolated areas of Maple Springs and Seawood Springs. We work hard to protect these wells from potential contamination. You can be assured that the Board of Water Commissioners considers protection of the well fields as their top priority. As such, in 2013 the Board of Water Commissioners with matching grant water supply protection funds purchased 35 acres of land north of the Maple Springs wellfield, with an abutting 35 acre parcel purchased in 2014. District owned land now adds up to almost 350 acres permanently protected. The District continues to exceed the minimum monitoring requirements set by the Massachusetts Department of Environmental Protection (DEP). For example, we annually conduct additional monitoring for pesticides and herbicides used in the cranberry industry that are not currently regulated.

The Department of Environmental Protection has prepared a Source Water Assessment Program (SWAP) Report for the Wareham Fire District. It can be obtained from the DEP website: www.state.ma.us/dep/brp/dws/files/swap/reports/4310000.pdf The SWAP Report notes the highest potential source of contamination threat comes from improper pesticide storage or use and illegal clandestine dumping of trash that may contain hazardous materials or waste. The SWAP Report commends the Wareham Fire District for taking an active role in promoting source protection measures in the Water Supply Protection Areas through: the acquisition of undeveloped lands within the Zone II recharge area, supporting residential growth management within the Zone II and conducting an independent study of pesticide and herbicide impacts on the groundwater in the Zone II.

The water system includes 7 groundwater wells, 2 corrosion control facilities, 3 storage towers, 1,267 hydrants and approximately 170 miles of water main. For corrosion control and pH adjustment we add lime (calcium hydroxide) to increase the lower raw water pH to between 7.0 and 8.0 in the finished treated water you receive. For disinfectant we add chlorine (sodium hypochlorite) at the corrosion control facilities for control of potentially harmful bacteria such as E-Coli and fecal coliform.



The Wareham Fire District Water Department is located at 2550 Cranberry Highway, Wareham, MA. Acting Water Superintendent Andrew Cunningham can be reached at telephone number (508) 295-0450 or email address acunningham@warehamfiredistrict.org. The Wareham Fire District Board of Water Commissioners meets on the first and third Monday of the month at 5:30 p.m., unless otherwise posted. Visit us at www.warehamfiredistrict.org.

District Highlights:

The Water Department adopted a new tariff in 2012. In order to avoid “rate shock” the Board voted to increase the water rate by 3% annually through 2020. With the 2014 base rate of \$84.41 per 4000 cubic feet (30,000 gallons), the Wareham Fire District continues to have one of the lowest base rates in the Commonwealth.

The Inter-municipal Agreement between the District and the Town of Rochester permitted the sale of water and fire protection to the commercial properties fronting Route 28/58 and Kings Highway. This agreement was reached only after the Board of Water Commissioners determined there was ample supply of water for our community. The first expansion of water occurred with the installation of approximately 2,400 feet of water main and hydrants for use at the new “Zero to Waste” facility on Cranberry Highway. The District already supplies water to 30 residential properties in Rochester.

The older of the two, the Maple Springs wellfield continues to experience water quality issues. Of significance is the upward trend of manganese (Mn) specifically in one of the four wells (Well#4) with levels in the raw water measured at 0.12 ppm in 2006, 0.4 ppm in 2012 and as high as 0.77 ppm in April of 2014. Manganese, while naturally occurring in ground water, is not necessarily a health risk. It does cause aesthetic problems, most notably severe discoloration (brown/black) of the water. The District has aggressively explored mitigation options with our engineers. The first step is to sequester the manganese along with blending flow from wells with lower or non-detectable levels of manganese. Sequestering will bond the manganese in solution; in essence “hide” it. The long term and “Best Management Practice” approach will be to remove the manganese by filtration. A new 3 MGD filtration treatment plant is under design and due to be on line in 2017. The new treatment plant will actually “remove” the manganese and other contaminants from the raw water before being sent out to the distribution system.

The new Maple Park Well Site received final approval from Mass DEP, construction of the well and pipeline is due to be completed in 2015. The District expects to proceed with the construction of the new well and the associated new treatment plant now targeted for treatment of both the older four Maple Springs wells along with the new Maple Park well.

Water Department staff transferred 32 service connections and two hydrants along 1,100 feet of Depot Street water main. Connections were taken off the older 1936 8” cast iron main and transferred to the newer 1979 12” ductile iron main. Also transferred were the adjacent side street connections to Chapel Lane, Knowles Ave, Tyler Ave and Minot Ave. as well as the commercial properties along Depot Street. This in-house accomplishment is a multiyear project targeted to improve water pressure, improve fire protection and enhance water quality by removal of the older dual water main along Depot Street and Great Neck Road down to Crooked River Road.

We continued with our annual Uni-directional hydrant flushing program. This program optimizes the removal of sediment and potential for bacterial growth within water mains throughout the distribution system.

The District continues to fund its voluntary Wellhead Protection Monitoring Program. Sampling is conducted each year in both the spring and fall to monitor for potential contaminants associated with cranberry grower operations, as well as other contaminants. With now 10 years of data, observed detections indicate low levels of certain pesticides but they remain well below any health guidance values and pose no unacceptable health risk either individually or collectively.

IMPORTANT INFORMATION – The 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 storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming. Pesticides and herbicides, which may come from a variety of sources such as agricultural, urban storm water runoff, and residential uses. Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, can come from gas stations, urban storm water 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 tap water is safe to drink, the DEP and EPA prescribes regulations that limit the amount of certain contaminants in public water systems. The Food and Drug Administration (FDA) and the Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water. 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 at 800.426.4791**.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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 at 800.426.4791.

MCL’s are set at very stringent levels. To understand the possible health effects described for regulated constituents, a person would have to drink two liters of water every day at the MCL level for a lifetime to have a one-in-ten thousand chance of having the described health effect.

Lead in drinking water: “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 Wareham Fire District Water Department is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap 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>.”

Manganese in drinking water: “Manganese is a naturally occurring mineral found in rocks, soil, 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.”

Bacteria in drinking water: *Coliforms are bacteria, which are normally present in the environment and are used as an indicator that other, more potentially harmful, bacteria may be present.*

Fecal Coliforms and E-coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause diarrhea, cramps, nausea, headaches or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

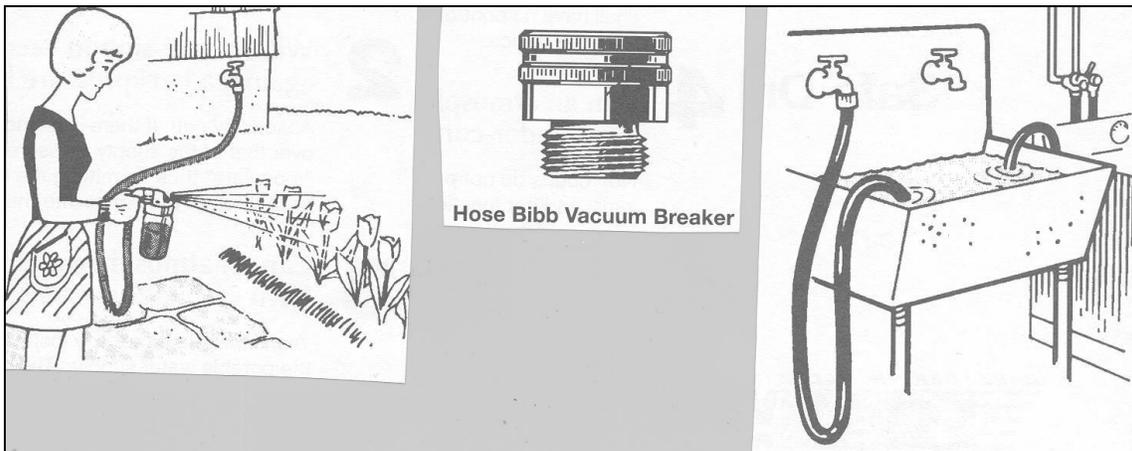


Annual Springtime Uni-Directional Hydrant Flushing Program

Cross Connection Control Program: Another way to protect the water supply is prevention of cross connections and backflows from service connections. As of July 2002, all new and retrofit water services require backflow protection. Backflows can occur whenever a potable water line is connected to fire protection, lawn irrigation, heating and air conditioning, or other equipment

and piping. For instance, you're going to spray fertilizer on your lawn, you hook up your hose to the sprayer that contains the fertilizer. If the water pressure in the water main in the street drops at the same time you turn on the hose, the fertilizer may be sucked back into the drinking water pipes through the hose. Drops in pressure of water mains are most likely to occur due to either physical water main breaks or use of hydrants for fighting fires. Other examples of a potential cross connection are a garden hose attached to a service sink with the end of the hose submerged in a tub full of detergent, left submerged in a swimming pool or submerged in an open cesspool.

A free brochure titled "**50 Cross-Connection Questions, Answers, & Illustrations Relating To Backflow Prevention Products and Protection of Safe Drinking Water Supply**" is available for pick up at the Water Department office. For more information on preventing backflows, contact the Water Department or the Town of Wareham Plumbing Inspector.



The following list is a summary of the Backflow Cross-Connection Program for 2014:

- There are 262 facilities in the District (193 Commercial, 26 Industrial, 30 Municipal, and 13 Institutional).
- 8 new facilities were surveyed for backflow cross connections in 2014. Re-surveys are performed on existing sites based on their associated risk factors or change of use.
- There are now a total of 183 Reduced Pressure Backflow Preventor (RPBP) devices and 227 Double Check Valve Assembly (DCVA) devices, for a combined total of 410 testable backflow devices registered in the District.

**ODD/EVEN LAWN SPRINKLER RESTRICTIONS IN EFFECT
MAY 1ST THROUGH SEPTEMBER 30TH - HELP CONSERVE!**

The Wareham Fire District Water Department works hard to provide quality water to every tap. We ask you to help us protect and conserve our water sources. For our residential customers we offer free water conservation kits. There is a limit to one kit per address. To obtain one, please come by the water department office.

WATER QUALITY SAMPLING TEST RESULTS - Wareham Fire District routinely monitors your drinking water according to Federal and State laws. The following table shows any detection resulting from our monitoring for the period of January 1 to December 31, 2014*.

(*If no tests were required for a given contaminant in 2013, the law requires the most recent test results be included here. However, no test results over 5 years old are allowed).

Contaminant	Violation YES or NO	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants (Raw Water – Groundwater Rule)						
E-Coli/Fecal Coliform	NO	Absent	Present or Absent	Absent	None	Class of bacteria which only inhabit the intestines of warm-blooded animals

Contaminant	Violation YES or NO	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants (Distribution System – Total Coliform Rule)						
Total Coliform (Count of 1at the Bourne Hill Tank Only May 2014)	NO	ABSENT – Count of 1	% of monthly samples that are positive	Absent	Present in 5% or greater of samples	Naturally present in the environment, possible lack of disinfectant residual
E-Coli/Fecal Coliform	NO	ABSENT	Present or Absent	Absent	None	Class of bacteria which only inhabit the intestines of warm-blooded animals
Lead and Copper (Sampled every 3 years – Due again in 2015)						
Copper 3 rd . Qtr. 2012	NO	90th Percentile = 0.49	ppm (Parts per Million)	1.3	Action Level = 1.3 Not Exceeded	Corrosion of household plumbing; Erosion of natural deposits; Leaching from wood preservatives
Lead 3 rd . Qtr. 2012	NO	90th Percentile = 0.002	ppm	0.015	Action Level = 0.015 Not Exceeded	Corrosion of household plumbing systems; Erosion of natural deposits
Volatile Organic Contaminants and other Analytes (The list of Regulated VOC’s tested in October 2012 all Non Detected or below any MCL)						
Tetrachloroethylene (PCE) January 2014	NO	ND – 0.8	ppb (Parts per Billion)	0	5	Discharge from factories and dry cleaners and asbestos cement lined pipes
Perchlorate July 2014	NO	ND – 0.6	ppb	0	2	Component of propellants in rockets, missiles and fireworks
Nitrate January 2014	NO	ND – 0.36	ppm	NA	10	Runoff from lawn fertilizer or domestic septic system leachate

WATER QUALITY SAMPLING TEST RESULTS (CONTINUED):

Stage II Disinfection By-Products

Total Trihalomethanes Quarterly 2014	NO	0.6 – 19.8	ppb	0	80	Compounds formed in the chlorination process when combined with organic matter, suspected of causing cancer
Haloacetic Acids Quarterly 2014	NO	ND – 1.7	ppb	0	60	Compounds formed in the chlorination process when combined with organic matter, suspected of causing cancer

Secondary Contaminants (Aesthetic compounds, Non-health related)

Secondary Contaminant	Average Detected (Detection Range)	Unit Measurement	SMCL	Health Advisory	Likely Source of Contamination
Potassium February 2014	0.77 (0.76 – 0.79)	ppm	None		Mineral present naturally in the soil
Iron February 2014	.09 (0.02 - 0.15)	ppm	0.3		Mineral present naturally in the soil
Manganese February 2014	0.27 (ND – 0.53)	ppm	0.05	0.03	Mineral present naturally in the soil
Chloride February 2014	11.5 (10.9 – 12.1)	ppm	250		Leaching of marine sedimentary deposits pollution from seawater, brine, industrial and domestic waste (sewage).
Calcium February 2014	19.65 (7.69 – 31.6)	ppm	None		Mineral present naturally in the soil
Magnesium February 2014	1.82 (1.46 – 2.18)	ppm	None		Mineral present naturally in the soil

Voluntary Testing For Un-regulated Pesticides Used in Cranberry Growing Industry

2,6-Dichlorobenzamide (BAM) Fall 2011 and Spring 2012	Range = ND - 0.26	ppb	Mass Office of Research and Standards Guidelines: 30 ppb children 110 ppb adults
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Setting the Well Screen on the New Maple Park Well

