

# TOWN OF SHARON WATER QUALITY REPORT FOR 2012

POSTAL PATRON  
SHARON, MA 02067

PRESORTED STD.  
U.S. POSTAGE  
**PAID**  
SHARON, MA  
PERMIT NO. 13

OFFICIAL NOTICE  
Department of Public Works  
Town of Sharon



## TOWN OF SHARON

# WATER QUALITY REPORT FOR 2012

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

### To Our Customers

Over the past several years, I have heard first-hand from customers that they value and appreciate this annual update. Consequently, I am pleased to present you with this year's Annual Water Quality Report, providing you with information on where your water comes from, what we are doing to modernize our system, what is found in the water, what we do to ensure high-quality water for now and in the future, and tips on efficient use of water.

Providing high-quality drinking water for public health is the single most important aspect of our work. The Sharon Water Department (Public Water Supply No. 4266000) recognizes that our operations are integrally connected to broader water resource management interests. As a result, a significant component of this effort is protection of the natural resources that contribute to your water supply. Most Town residents remain unaware that the Water Department is the sixth largest individual landowner in the Town behind only, in order of land ownership, the Conservation Commission, the Massachusetts Audubon Society, the Commonwealth of Massachusetts, Town of Sharon (which includes School Department property) and Trustees of Reservations.

Sharon's water system was originally established in the 1890's. The system includes six production wells capable of providing a peak of 3.12 million gallons per day and approximately 120 miles of water main. The system currently serves 17,500 customers or approximately 98% of the Town.

As many of you know, the Water Department has continued our aggressive program of replacing century old cast iron and break prone asbestos-cement water mains. We understand the frustration resulting from traffic delays and rough pavement that many have experienced and thank you for your continued patience.

The present mandatory summertime outdoor water use restrictions in place to comply with State residential water use restrictions, aggressive leak detection and repair and the appliance rebate program have together reduced yearly consumption roughly 20% from a peak of 617 million gallons to 482 million gallons last year. For those of you making wise water choices a priority, we thank you for your efforts, and for those of you not yet practicing water conservation, now is a great time to start.

The Town of Sharon Water Department has long been an advocate of wise water use and continues to provide outreach and incentives through coordination with the Neponset River Watershed Association in order to further our education outreach with Sharon schools and other public groups.

I hope you take the opportunity to read through the information on the following pages. As always, we appreciate your feedback and input, so please contact us if you have any questions or comments regarding this Report of our water system.

Respectfully,

Eric R. Hooper, P.E.  
Superintendent of Public Works  
Town of Sharon

### 2012 PROJECT HIGHLIGHTS

Replacement of the asbestos-cement water main under Massapoag Avenue has continued with the section between the Community Center and Morse Street completed in 2010, the section between Morse Street and Lakeview completed in 2011 and the section between Lakeview Street and the access road to the Massapoag Avenue Storage Tank completed during the summer of 2012. The final section of main replacement under Massapoag Avenue, adjacent to the lake, is scheduled for this upcoming summer.

Also scheduled for the summer of 2013 is the replacement of the 1890's vintage cast iron water main under Glendale/Glenview as the initial phase to upgrade very old mains in the center of Town.

Several significant leaks were repaired during the course of 2012, including house service leaks measured to be on the order of 30 gallons per minute and broken water main leaks.



## SHARON'S WATER SYSTEM

Our water system includes six groundwater supply wells and pumping stations, four water storage tanks, and approximately 120 miles of water main. Our groundwater sources are of good quality and require minimal treatment. Our water is disinfected and treated for corrosion control to reduce the amounts of lead and copper in our water. Fluoride is added to our water to promote strong teeth and prevent tooth decay/cavities.

## POTENTIAL SOURCES OF CONTAMINATION

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, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

**Inorganic contaminants**, such as salts and metals, can be naturally-occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, and farming.

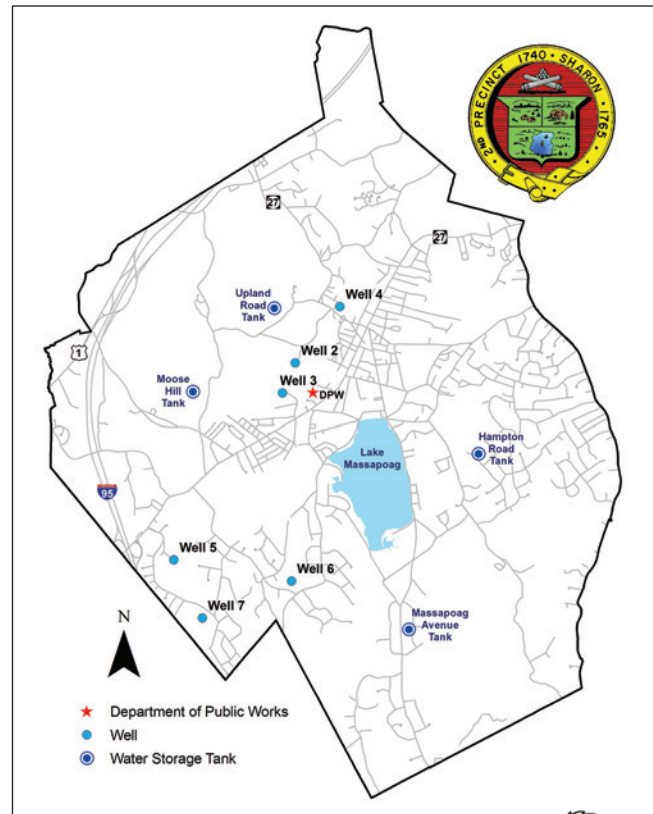
**Pesticides and herbicides** may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

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

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

## QUALITY CONTROL

To ensure that tap water is safe to drink, the Department and Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. The presence of contaminants does not necessarily indicate that water poses a health risk. Food and Drug Administration (FDA) and the Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for public health. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791.)



## HELP TO PROTECT OUR WATER SUPPLY!

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program (SWAP) Report for our water supply sources. The SWAP report assesses the susceptibility of public water supplies. A copy of the SWAP report is available at the Department of Public Works office. Our SWAP report has indicated that our groundwater is highly susceptible to contamination from residential activities adjacent to the wells; residential land uses; accidental spills from local roadways, Route 95 and the railroad; hazardous materials storage; existing contamination sites; and agricultural activities.

As a consumer, you have an impact on the quality of our water supply sources, and therefore, the quality of the water you drink. The land around our groundwater wells is mainly forested and residential with lesser amounts zoned as commercial. When rain falls or snow melts, the seemingly small amounts of chemicals and other pollutants around your property may be transferred by groundwater or overland flows to the wells.



## KEEPING OUR WATER CLEAN

### How Stormwater Runoff Affects Our Water Supply

**Stormwater Runoff** is generated when precipitation from rain and snowmelt flows over land or impervious surfaces (paved streets, parking lots, and building rooftops), and does not percolate into the ground. As the runoff flows over the land or impervious surfaces, it accumulates chemicals, debris, dog waste, and other pollutants that adversely affect water quality.

#### The Problem of Polluted Runoff

Excess rainwater is carried away from streets, parking lots, sidewalks and even lawns via a network of underground storm drains. In most cases, Sharon's storm drains lead to the nearest stream, pond, or wetland where the polluted runoff gets discharged into the environment with little or no treatment.

Polluted runoff makes our streams and ponds unsightly; creates an unhealthy situation for kids, pets, fishing, boating and wildlife; and can impact our drinking water quality. **Contaminants in stormwater runoff are a major cause of water pollution in Sharon.**

#### DOG WASTE CAN HARM YOUR HEALTH

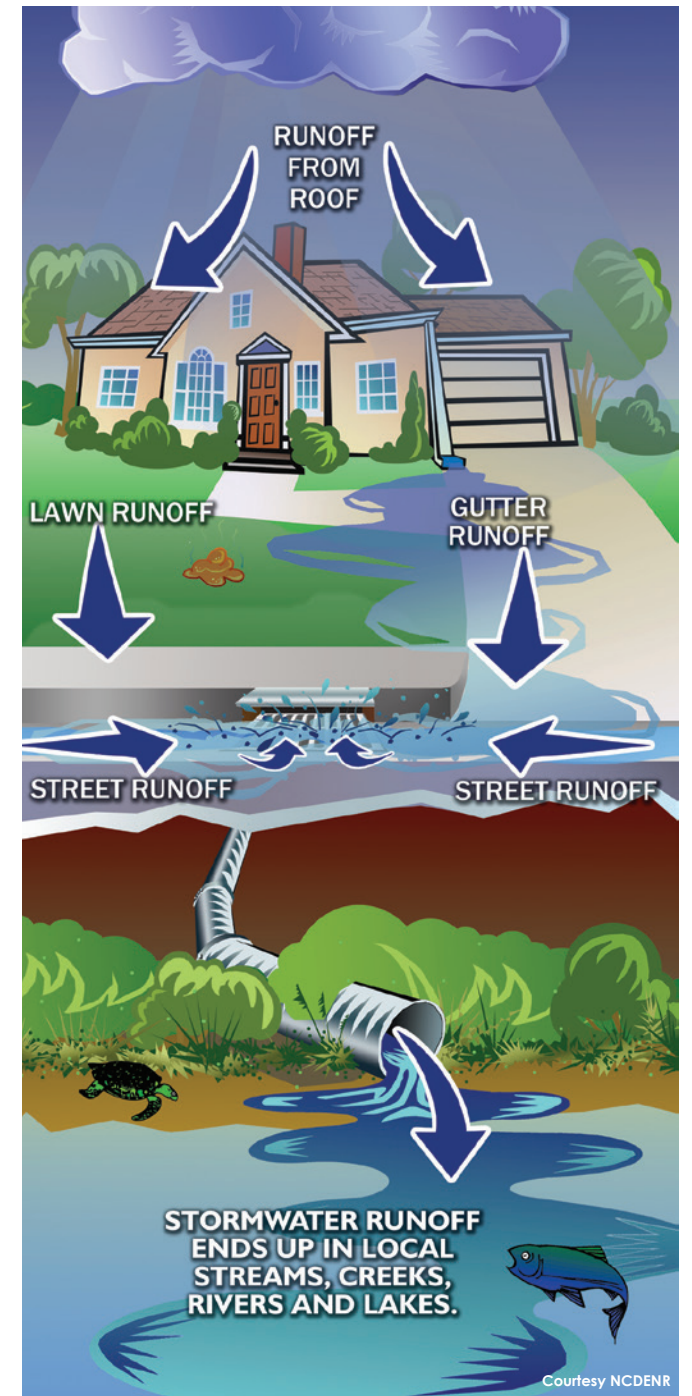



The most responsible thing that pet owners can do for their family, community, and environment is pick up after their pets, and dispose of waste in the trash.

Unlike other water contaminants, such as fertilizer and motor oil, dog waste carries parasites and bacteria— **heartworm, hookworm, roundworm, tapeworm, parvovirus, giardia, salmonella, and E. coli**—which can be transmitted to humans and make them sick. When dog waste decomposes, it releases nutrients which cause excessive growth of algae and weeds—making water bodies murky, green, smelly, and unusable for swimming and fishing.

#### WHAT CAN YOU DO?

- **Pick up after your dog!** Carry a plastic bag with you on every walk with your dog and **throw the waste into a trash can.**
- **Use lawn chemicals sparingly.** Choose phosphate-free fertilizers and sweep up any spills on paved areas. Don't over fertilize.
- **Dispose of household chemicals properly.** Avoid spilling chemicals or paint onto paved areas or soil. Never dump anything down the storm drain!
- **Redirect downspouts away from pavement.** Allow runoff from your roof to soak into your lawn.
- **Wash your car on the lawn.** Let soap run off into the grass, rather than down the street and into a storm drain.





**The Sharon Board of Health PROHIBITS dogs, horses and other pets at Veteran's Memorial Park and Beach, and the Community Center Beach, from APRIL 15 THROUGH OCTOBER 15.**



## SHARON WATER CONSERVATION PROGRAM

**T**he Water Department continues to partner with the **Neponset River Watershed Association** to run the Sharon Water Conservation Program.

Rebate programs, school programs, and town events are inspiring water efficiency throughout town. Residents are saving money and energy, improving our ecosystem, and maintaining our water independence. Thank you to those who are doing their part!

### ON-GOING INCENTIVE PROGRAMS



#### Clothes Washer & Toilet Rebates

Get a rebate for half the cost of a toilet, **up to \$200**. The toilet being replaced must be a **3.5 gallon per flush (or higher)** and must be replaced with a WaterSense labeled model of **1.28 gpf or less**. *Toilets must be installed by a licensed plumber and inspected by the Sharon plumbing inspector.*

Get **\$200** for installation of a clothes washer with an Energy Star water factor of **4.5 or less**. Look for washers at: [www.energystar.gov](http://www.energystar.gov)



**Rebate terms & conditions apply.** Please call the Water Department at 781-784-1525, prior to purchase, to confirm rebate eligibility. More rebate information can be found at: [www.sharonwater.com](http://www.sharonwater.com)

#### Free Water Efficient Showerheads & Faucet Aerators

Visit the Water Department during regular business hours to pick up 1.5gpm showerheads, and 1.5 or 1.0 gpm faucet aerators. (Mon.-Wed. 8am-5pm, Th. 8am-8pm, Fri. 8am-12:30pm)

#### Drought Tolerant Grass Seed

The Water Department sells **drought tolerant fescue grass seed** to Sharon residents for \$25 per 20 lb. bag, two bags per household.

In addition to being drought tolerant, fescue grasses are insect resistant and will survive in sunny or shady areas. They are easier to maintain than other grass types because they **require less water and fertilizer**. An added benefit is that fescues are slow growing grasses, so they require less frequent mowing.

#### Rain Barrels



A simple and *inexpensive* way to conserve water outdoors is to use **rain barrels** for lawn and garden use.

A rain barrel **collects rain water run-off** from a roof and stores it for use during dry weather. Rain barrels can be used with your existing down spouts, a down spout diverter, or by positioning your barrel under a roof valley. Rainwater contains no fluorides or chlorine and is perfect for watering the garden. A one-inch rainfall on a 1,000 square foot roof typically yields **600 gallons** of water.



### COMMUNITY OUTREACH School Programs

In the fall, third graders at Cottage, East, and Heights Elementary Schools were taught about their town's water resources, infrastructure, personal usage, conservation, and stormwater pollution.



At the the high school, students in Ms. Roberto's Photography Class were "contracted" by the Water Conservation Program to produce posters promoting the WaterSense Fix a Leak Week Program. Original photography and artist's statements were incorporated into informational posters, which were displayed at the Sharon Public Library, Town Hall, and High School.



#### Fix a Leak Week

In March, the WaterSense **"Fix a Leak Week"** Program reminded residents to check for water leaks around their homes. According to WaterSense, an American home wastes, on average, more than **10,000 gallons** of water every year due to running toilets, dripping faucets, and other household leaks. For information on fixing leaks, go to: [www.epa.gov/watersense](http://www.epa.gov/watersense)

#### Earth Day

In April, High St., Sharon was shut down for a town wide Earth Day Festival, featuring a variety of conservation minded exhibitors, including the Sharon Water Conservation Program, which distributed dozens of water efficient showerheads and aerators to Sharon residents.



#### Moose Hill Native Plant Sale



In June, the Water Conservation Program tabled at the Moose Hill Plant Sale to promote rain barrels, drought tolerant grass seed, and native plants.



## DRINKING WATER AND PEOPLE WITH WEAKENED IMMUNE SYSTEMS

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 people, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Center for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

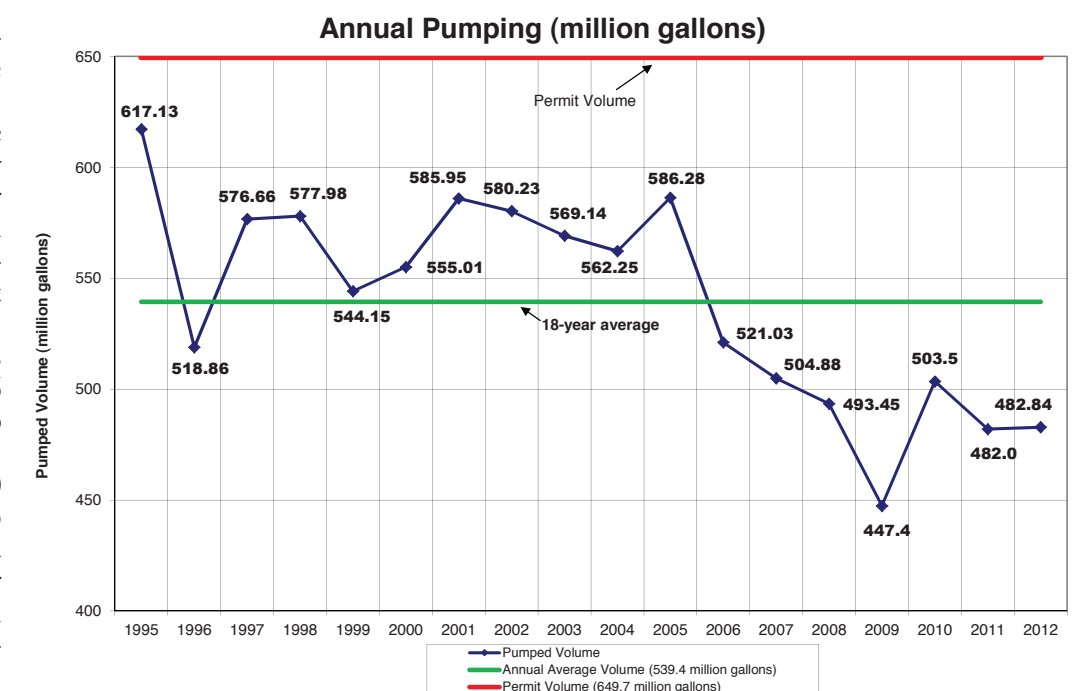
## CROSS CONNECTIONS

A cross connection is a connection between a drinking water pipe and a polluted source. The pollution can come from your own home. 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 drops (say because of fire hydrant use in the town) when the hose is connected to the fertilizer, the fertilizer may be sucked back into the drinking water pipes through the hose. Using an attachment on your hose called a backflow prevention device can prevent this problem. The Sharon Water Department

recommends the installation of backflow prevention devices, such as a low cost hose bib vacuum breaker, for all inside and outside hose connections. You can purchase this at a hardware store or plumbing supply store. This is a great way for you to help protect the water in your home as well as the drinking water system in your town. For additional information on cross connections and on the status of your water system's cross connection program, please contact Eric Hooper at the Sharon Department of Public Works at 781-784-1525.

## WATER USAGE

The Annual Pumping graph shows the total volume of water pumped from the Town's six groundwater supply wells for each year from 1995 through 2012. The six wells are used to supply drinking water to meet the demands of the Town's water customers. The Town is permitted by the State to pump no more than 650 million gallons of water each year. During the eighteen year period, the annual average volume of water pumped was 539 million gallons, approximately 110 million gallons below the permitted volume. From 1995 through 2000, the pumped volume fluctuated above and below the seventeen year average. However, since 2001, due in part to incrementally more restrictive outdoor water use regulations and diligent efforts by the Water Department to prevent or locate and repair leaks, the pumped volume has steadily declined from 586 million gallons in 2001 to 483 million gallons in 2012. The years 2005 and 2010 were exceptions due to significant leaks that proved difficult to locate using our acoustical leak detection equipment or were on private property.



**WATER QUALITY SUMMARY** Listed below are 14 contaminants detected in Sharon’s drinking water in 2012. Not listed are over 100 other contaminants for which we tested but did not detect. The complete list of contaminants that we test for is available at the Department of Public Works office and at the Sharon Public Library.

SAMPLES COLLECTED FROM OUR WATER SUPPLY

Substance (Contaminant)	Units	Highest Level Detected	Range of Detection	Highest Level Allowed (EPA's MCLs)	Ideal Goals (EPA's MCLGs)	Sources of Contaminant
PRIMARY CHEMICALS						
Alpha Emitters	pCi/L	1.0	ND - 1	15	0	Erosion of natural deposits
Combined Radium	pCi/L	1.86	0.13 - 1.86	5	0	Erosion of natural deposits
Fluoride <sup>1</sup>	ppm	1.20	0.98 - 1.20	4	4	Water additive which promotes strong teeth; Erosion of natural deposits
Nitrate	ppm	4.93	2.89 - 4.93	10	10	Runoff from fertilizer use; Leaching from septic tanks
Perchlorate <sup>2</sup>	ppb	0.33	0.06 - 0.33	2.0	N/A	Oxygen additive in solid fuel propellant for rockets, missiles, and fireworks
SECONDARY CHEMICALS						
Manganese <sup>3</sup>	ppb	201(Avg)	5 - 874	NR	NR	Erosion of natural deposits
Sulfate <sup>4</sup>	ppm	15.1	7.1 - 15.1	NR	NR	Naturally present in the environment
UNREGULATED CHEMICALS						
Sodium <sup>5,6</sup>	ppm	82.9	20.4 - 82.9	NR	NR	Naturally present in the environment
Turbidity <sup>5,7</sup>	NTU	14.0	ND - 14.0	NR	NR	Soil runoff; suspended material in water

SAMPLES COLLECTED FROM YOUR FAUCETS

Substance (Contaminant)	Units	Highest Running Annual Average	Range of Detection	Highest Level Allowed (EPA's MCLs)	Ideal Goals (EPA's MCLGs)	Sources of Contaminant
PRIMARY CHEMICALS						
Total Trihalomethanes	ppb	11.22	1.8 - 16.6	80	N/A	By-product of drinking water chlorination
Haloacetic Acids	ppb	0.82	ND - 1.9	60	N/A	By-product of drinking water chlorination
Chlorine	ppm	0.50	0.02 - 1.14	4 (MRDL)	4 (MRDLG)	Water additive used to control microbes
Copper <sup>8</sup> (0 samples exceeded the action level)	ppm	0.28	0 - 0.36	1.3	1.3	Corrosion of household plumbing systems
Lead <sup>8</sup> (1 sample exceeded the action level)	ppb	4.0	0 - 20	15	0	Corrosion of household plumbing systems

DEFINITIONS

**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.

**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 Residual Disinfection Level (MRDL)** – The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of disinfectants is necessary for control of microbial contaminants (ex. chlorine, chloramines, chlorine dioxide).

**Maximum Residual Disinfection Level Goal (MRDLG)** – The level of drinking water disinfectant below which there is no known expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**Action Level** – The concentration of a contaminant, which, if exceeded, triggers a treatment or other requirements that a water system must follow. The action level for lead and copper is the 90<sup>th</sup> percentile of all samples taken at one time.

**ND** – Substance not detected in the sample.

**NR** – Not regulated.

**NTU** – Nephelometric turbidity units.

**pCi/L** – Picocuries per liter; unit is a measure of the radioactivity in water.

**ppb** – One part per billion; one part per billion is equivalent to \$1 in \$1,000,000,000.

**ppm** – One part per million; one part per million is equivalent to \$1 in \$1,000,000.

Notes:

<sup>1</sup> Fluoride occurs naturally in all water supplies in trace amounts. Fluoride is added to the Sharon water supply to adjust the fluoride level to about one ppm so that it is optimal for better oral health. At this level, it is safe, odorless, colorless, and tasteless.

<sup>2</sup> Massachusetts has set a maximum contaminant level of 2.0 ppb for perchlorate.

<sup>3</sup> Massachusetts has set a secondary maximum contaminant level of 50 ppb, and a health advisory level of 300 ppb for manganese.

<sup>4</sup> Massachusetts has set a secondary maximum contaminant level of 250 ppm for sulfate. This level was established to protect the aesthetic quality of drinking water and is not health based.

<sup>5</sup> Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulations are warranted.

<sup>6</sup> The Massachusetts Office of Research and Standards has set a guideline concentration of 20 ppm for sodium.

<sup>7</sup> Turbidity is a measure of cloudiness of the water. We monitor it because it is a good indicator of water quality.

<sup>8</sup> Lead and copper compliance is based on the 90th percentile value, which is the highest level found in 9 out of every 10 homes sampled. This number is compared to the action level for each contaminant. The 90th percentile for lead and copper did not exceed the action level.

**MANGANESE** 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. Additional information on manganese in drinking water is available at: [http://www.epa.gov/safewater/ccl/pdfs/reg\\_determine1/support\\_cc1\\_magnese\\_dwreport.pdf](http://www.epa.gov/safewater/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf).

**LEAD** 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 Sharon Department of Public Works 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>.