# Acton Water District

SUMMER 2011

## Water Words Notice

Once again, as we approach the period that we in the water industry call "Peak Demand" period, or summer to most of you, conservation and efficiency always come to the forefront of my mind. This is especially true as I watch our storage tank levels drop during a short hot spell. We have implemented many measures to assist our customers in conserving our most precious natural resource, water.

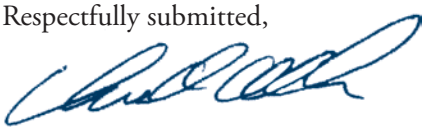
Last July, we saw the extreme of conservation, a full ban on outdoor water use. This is not a desirable situation for anyone, public water supplier, or user. Terms such as, "Capacity" and "Safe Yield" come to the forefront at these times of high demand. With building expansion in Acton, such is the increase in need for water. The system capacity has not expanded in a few years except for the advent of water efficiency. We are constantly monitoring how much water we can provide, both legally and physically. We scrutinize most new development, and, in an effort to be proactive, work with developers to implement conservation measures pre-construction. We must all do our part to conserve when, and where, we can. State regulations are only going to make the issue of conservation and water capacity even more important and you, as our customers, will be asked to be more mindful of how and when you use water.

A properly managed irrigation system, or lawn watering program, can effectively maintain a green, healthy lawn for much of the summer. We should expect our lawn to go dormant during the dog days of summer as most of us would like to do! Environmentally, conserving water is the right thing to do. It keeps water in the natural environment and reduces energy consumption associated with pumping and treating water. Outdoors is not the only place to conserve. There are many measures with which to conserve water indoors, as well. Each person can certainly have a positive impact, and no one should be saying that they cannot make a difference. Every drop helps!

An often forgotten component of the public water system is the previously mentioned storage tanks we have around Acton. These tanks are located in four high elevation areas of Town to provide pressure for our customers and storage capacity to fight a fire if needed. Maintaining these structures can be a challenge since they are not easily emptied and range in age from 22 to 95 years old. In May 2010 and March 2011, we contracted to have these important facilities cleaned and inspected by qualified firms. Accumulated sediment was removed and areas for concrete repairs or further inspection were identified.

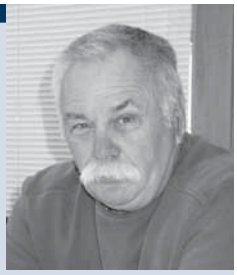
Additionally, we are committed to continuing our water main improvement program, and will be planning another upgrade commencing in the spring of 2012. Areas currently targeted are Hayward Road and Stow Street. Most likely, we will be presenting an article at a special meeting of the Water District in the fall of 2011 to appropriate funds for engineering.

Respectfully submitted,



Chris Allen
*District Manager*

**Robert W. Koch** retired from the Water District on February 15, 2011 after 30 dedicated years to the water takers of Acton. Bob was a hard working employee who saw the District change in many ways over the years, while providing an important historical perspective. He joined the Water District as a laborer in January 1981 and rose through the ranks until he attained the role of General Foreman. The Staff celebrated with Bob on his last day with a luncheon and sharing memories from over the years.



**Bob Koch on his last day at the Water District.**

# Outdoor Water Efficiency

During the summer months, Acton residents can use up to 50% more water than during the winter months. The largest outdoor water uses are irrigation and swimming pools. If you water your lawn, gardens, or landscaping make sure you do it in compliance with our seasonal water restriction and in the most water efficient ways possible. Just because it is your day to water does not mean your lawn or landscape needs it. Owners and managers of swimming pools should consider a pool cover to reduce evaporation of water during long hot spells or periods of non-use. During the summer of 2010, we saw many pool owners had very high bills due to the continuous filling that occurred during the long hot summer months. The following are a few tips on checking the efficiency of your watering practices:

- Check the system for leaks.
- Set sprinklers to only water your lawn and landscaping. An adjustment is needed if you are watering the roadway, driveway, house, or walkways!
- Check to see that your lawn is absorbing the water. Applying water too quickly will lead to pooling and increased evaporative losses.
- If your system is equipped with a rain sensor, it should be located away from overhangs and trees that may interfere with its proper operation.
- Adjust your watering schedule to reflect current conditions. Lawns only require one inch of water, including rain, per week. Precipitation can be measured with a simple rain gauge available at many garden centers and hardware stores.

Our seasonal water use restrictions are in effect from May 1 to October 1 of each year. These restrictions allow customers with even numbered addresses to use water outdoors on *Tuesday, Thursday, and Saturday.* Odd numbered addresses may use water outdoors on *Wednesday, Friday and Sunday.* No lawn watering is allowed between the hours of 7AM and 7PM, and no outdoor water use of any kind is allowed on Mondays. These restrictions apply to both new and established lawns. We encourage homeowners to plant new grass early in the spring or wait until October.

To avoid a total lawn watering ban, the District is requesting that everyone take measures to conserve water and avoid all non-essential uses during the upcoming summer months. Your efforts in conserving our important groundwater resources are critical. We think that you will find that limiting outdoor water use will not only save you time, energy, and money, but it is also better for the environment and your community. Thank you for your compliance.

# Mary Michelman
## Honored by the U.S. EPA

Acton lost a devoted volunteer and advocate for safe drinking water in the passing of Mary Michelman. She was a regular attendee of the Water District Commissioner's meetings and could often be found in the office of our Environmental Manager discussing the W.R. Grace Superfund site or other local water resource issues. She passed away on December17, 2010 after a recurrence of breast cancer for which she underwent treatment three years earlier. Friends, family, and those who were touched by Mary's life, honored her with a memorial service at Acton Town Hall on December 29, 2010.

On May 11, 2011 the United States Environmental Protection Agency honored Mary's role in environmental protection, education, and action with a posthumous Environmental Merit Lifetime Achievement Award. On hand to accept this well deserved honor was her husband Tom Michelman. A number of Mary's family and friends were in attendance at the ceremony held at Faneuil Hall in Boston. She was nominated by four employees of the EPA, local residents Matthew Liebman and Pamela Harting-Barrat and project managers for the W.R. Grace Superfund clean-up, Derrick Golden and Sarah White.

Since moving to Acton in the 1990's, Mary worked on many environmental projects in and around Acton. As previously stated, she worked tirelessly on the W.R. Grace Superfund project in South Acton as a citizen volunteer for Acton Citizens for Environmental Safety (ACES). She also coordinated efforts to establish an unwanted drug collection program in Acton, she lead the Acton Stream Teams, and advocated for full cleanup of multiple hazardous materials sites in Town, most recently the Caouette Farm property acquired by the Town of Acton. Her hard work and dedication will be missed and the residents of Acton are better off for having had Mary as a resident, friend, and colleague.

**Tom Michelman (right) accepted Mary's Lifetime Achievement Award from EPA New England Regional Administrator, Curt Spaulding (left).**

**Mary Michelman was an advocate for water resources and protection of public health.**

# Report on Water Quality

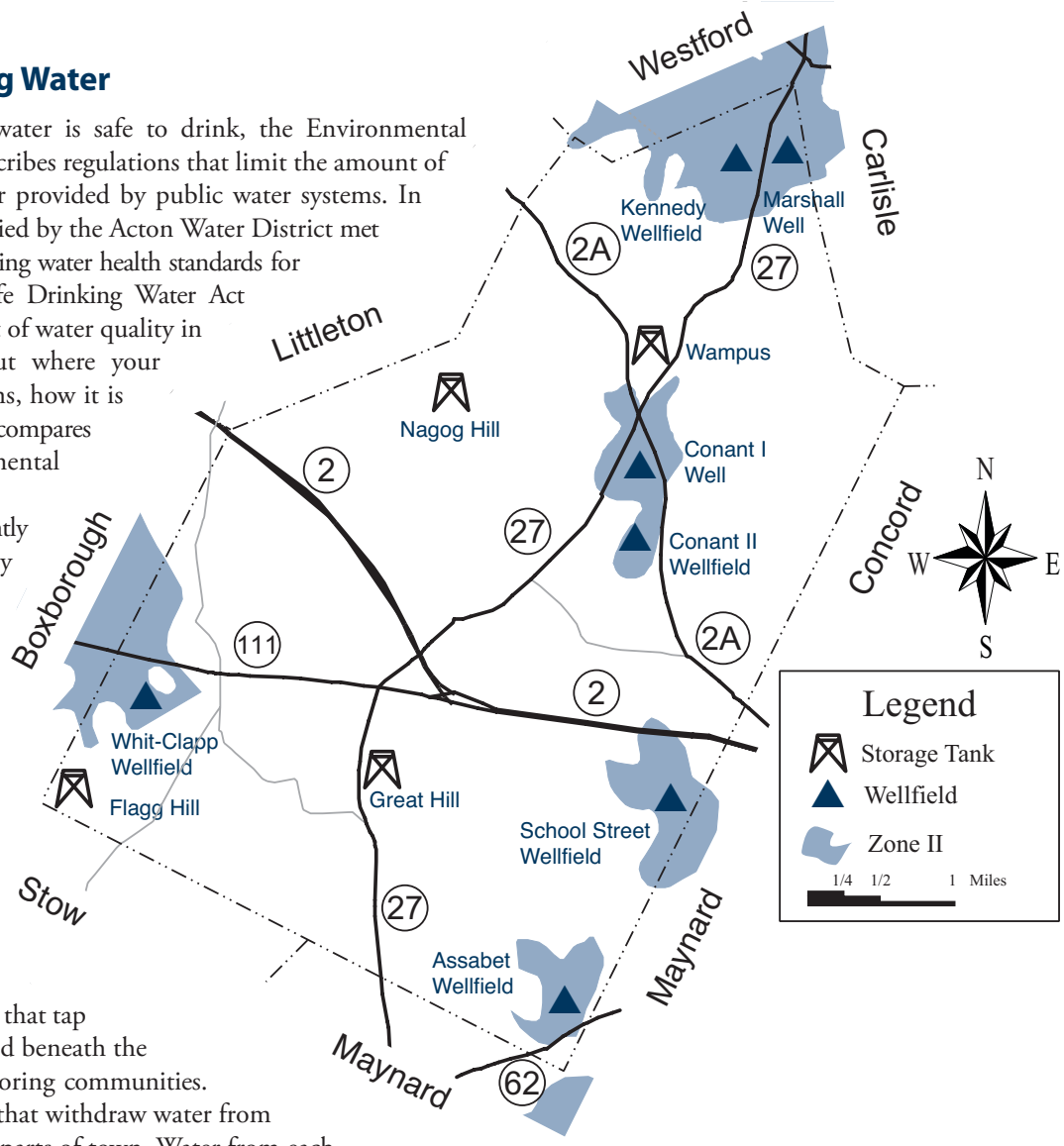
SUMMER 2011 PWS 2002000

## Acton Water District

### Testing for Your Drinking Water

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. In 2010, as in years past, water supplied by the Acton Water District met EPA, state, and our own local drinking water health standards for chemicals regulated under the Safe Drinking Water Act (SDWA). This report is a snapshot of water quality in 2010. Included are details about where your water comes from, what it contains, how it is treated and distributed, and how it compares to standards set by the Environmental Protection Agency.

The Acton Water District vigilantly safeguards your water supplies by employing multiple barriers for protection, including source water protection, distribution system protection, ongoing monitoring, and treatment. Last year, we collected more than 650 samples and tested them for over 100 different potential drinking water contaminants.




### The Source of Your Drinking Water

Your water comes from wells that tap the water held in the ground beneath the town of Acton and neighboring communities. The District has 22 different wells that withdraw water from seven wellfields located in various parts of town. Water from each well is pumped to treatment facilities located in each of the various wellfields, and then into the distribution system (a network of ~120 miles of water mains, four storage tanks, and over 1,100 fire hydrants) where it blends together and is delivered to homes, businesses, schools, and other public users. The map on this page shows the various storage tanks, wellfields and the critical, protective area (called Zone II) around each wellfield.

### Protection for Your Drinking Water

The Acton Water District employs three important "barriers" to maintain the highest possible quality of drinking water:

- A protective area called Zone II surrounds each of Acton's wells. Land use activities that could adversely affect water quality are restricted within the Zone II area.
- Each of Acton's wells is treated in order to remove impurities and improve the taste of the water. Water treatment specifics are listed below.
- The system of pipes that delivers water to your home is protected by a program that works to minimize "cross connections" between potable (intended for human consumption) and non-potable water. An example of a cross connection is a point where a drinking water pipe might connect to a fire suppression system or to an outside irrigation system.

## Why are Impurities in Your Drinking Water?

As water travels through the ground it dissolves naturally occurring minerals. It can also pick up substances resulting from animal or human activity. Contaminants that may be present in source water include:

- **Microbiological** contaminants (such as viruses and bacteria) that may come from septic systems, agriculture, and wildlife.
- **Inorganic** contaminants (such as salts and metals) may be naturally occurring or result from storm runoff, wastewater discharge, mining and farming.
- **Pesticides and herbicides** may come from a variety of sources such as agriculture, storm water runoff, and residential uses.
- **Organic chemical** contaminants are byproducts of industrial processes, 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.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some impurities. The presence of an impurity does not necessarily indicate that the water poses a health risk. The Acton Water District has compiled information on drinking water and health in our drinking water resource center. Please feel free to visit or call us for information, or call the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

## Treatment for Your Water

To meet local, state, and federal requirements, and to improve taste and appearance, the Acton Water District treats all of its water before it is supplied to our customers. The table below shows the treatment provided at each wellfield.

| Treatment | Conant I Well | Conant II Wellfield | Marshall Well | School Street Wellfield | Assabet Wellfield | Kennedy Wellfield | Clapp/Whitcomb Wellfield |
|---|---|---|---|---|---|---|---|
| Aeration *VOC removal* | | ♦ | ♦ | ♦ | ♦ | ♦ | ♦ |
| Chlorination *disinfection* | ♦ | ♦ | ♦ | ♦ | ♦ | ♦ | ♦ |
| Fluoridation *tooth decay protection* | ♦ | ♦ | ♦ | ♦ | ♦ | ♦ | ♦ |
| pH Adjustment *corrosion control* | ♦ | | ♦ | | | ♦ | |
| Carbon Filtration *taste/color control* | | | | | | | ♦ |
| Membrane Filtration *mineral/color removal* | | | ♦ | | | ♦ | |

# Source Water Assessment and Protection Report Available

The Source Water Assessment and Protection (SWAP) program requires states to assess the susceptibility of public water supplies to potential contamination. The Department of Environmental Protection (DEP) has completed its assessment on each of the Zone IIs for the Acton Water District's wells. A susceptibility ranking of "high" was assigned to each Zone II using the information compiled by the DEP. Copies of the SWAP report are available at the Acton Water District, Acton Public Library, Health Office, and online at *www.state.ma.us/dep/brp/dws*.

The Acton Water District has long recognized the susceptibility of its sources, and has worked closely with the town and state to maximize the protection of all of its Zone IIs. The Water District is in compliance with the DEP's Source Water Protection Regulations. For more information, please call Matthew Mostoller at the Acton Water District (978) 263-9107.

**For more information, additional copies, or comments on this report, contact:**

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PO Box 953, 693 Massachusetts Ave., Acton, MA 01720
Phone: 978-263-9107 • Fax: 978-264-0148
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# Water Quality Data Table

The data presented in the table below are from calendar year 2010. Only compounds that were detected in the water delivered to our customers are reported in this table. Because water from all wellfields is blended within the distribution system, these data represent the range of water quality in all wellfields.

| Substance (units) | Range of Detects | Level Allowed (MCL) | Goal (MCLG) | Typical Source | Exceeds MCL? |
|---|---|---|---|---|---|
| **Regulated Substances (MCL has been established)** | | | | | |
| Total Coliform | 0 -4 positive samples | < 2 samples positive/month | 0 | Naturally present in the environment | Yes |
| Trihalomethanes (ppb) | 0.0-17.0 average: 7.2 | 80 | No MCLG | Formed when natural organic material present in the water reacts with chlorine added as a disinfectant | No |
| Nitrate (ppm) | 0.05-2.9 | 10 | 10 | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits | No |
| Fluoride (ppm) | 0.0-2.0 | 4 | 4 | Erosion of natural deposits, water additive which promotes strong teeth | No |
| Perchlorate (ppb) | 0-0.36 | 2 | No MCLG | Rocket propellant, fireworks, munitions, flares, blasting agent | No |
| Chlorine (ppm) | 0.00 -0.34 0.06:highest running annual average | 4 (MRDL) | 4 (MRDLG) | Water additive used to control microbes | No |
| **Unregulated Substances (MCL has not been established)** | | | | | |
| Iron (ppm) | 0.0-0.76 | No MCL | No MCLG | Erosion of natural deposits | Unregulated contaminants have no established MCL |
| Manganese (ppm) | 0.0-0.21 | No MCL | No MCLG | Erosion of natural deposits | |
| Sodium (ppm) | 10.1-29 | No MCL | No MCLG | Erosion of natural deposits, road salting | |
| Chloroform (ppb) | 2.0-3.0 | No MCL | No MCLG | Formed when natural organic material present in the water reacts with chlorine added as a disinfectant | |
| Chlorodibromomethane (ppb) | 1.0-5.0 | No MCL | No MCLG | Formed when natural organic material present in the water reacts with chlorine added as a disinfectant | |
| Bromodichloromethane (ppb) | 2.0-3.0 | No MCL | No MCLG | Formed when natural organic material present in the water reacts with chlorine added as a disinfectant | |
| Bromoform (ppb) | 0-1.0 | No MCL | No MCLG | Formed when natural organic material present in the water reacts with chlorine added as a disinfectant | |
| **Lead & Copper (30 sites sampled during August & September, 2010. Next sampling during Summer 2013.)** | | | | | |
| Substance (units) | 90th percentile | # sites above Action Level | Action Level | Typical Source | Exceeds AL? |
| Lead (ppb) | 10.00 | 1 | 15 | Corrosion of household plumbing systems; Erosion of natural deposits | No |
| Copper (ppm) | 1 | 2 | 1.3 | Erosion of natural deposits; Leaching; Corrosion of household plumbing systems; from wood preservatives | No |

### TERMS AND ABBREVIATIONS

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

**MCL:** Maximum Contaminant Level: 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.

**MCLG:** Maximum Contaminant Level Goal: 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.

**MRDL:** Maximum Residual Disinfectant Level: The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**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 the use of disinfectants to control microbial contaminants.

**pCi/L:** picoCuries per liter

**ppm:** part per million by volume

**ppb:** part per billion by volume

**90th Percentile:** The concentration of a substance that falls at the top ninety percent of all values for that substance.

# Discussion of Data Table Detections

**TOTAL COLIFORM:** Coliform bacteria are naturally present in the environment and are generally not harmful themselves. They are tested as indicators of the presence of other, potentially harmful, bacteria which may cause symptoms including diarrhea, cramps and nausea and associated headaches and fatigue. During the months of April and October 2010, more than two of our distribution samples showed the presence of coliform bacteria. More than one sample positive for total coliform is considered a monthly MCL violation for total coliform. During each instance, the Water District increased the level of chlorination at the sites involved, conducted immediate resamples, and notified customers of a temporary violation in a notice printed in the *Beacon* newspaper and posted around town. Following each instance, resamples showed no coliform present, indicating that the problem had been abated.

**SODIUM:** Although sodium does not have a Maximum Contaminant Level, the Commonwealth of Massachusetts does have a guideline of 20 parts per million (ppm) for sensitive individuals, such as those on very salt-restricted diets. The Acton Water District notifies the Board of Health of all sodium results, and results of the most recent sodium tests are posted at: the Acton Public Health and Nursing Service offices; the Acton Water District Information Center and website; the Acton Public Library; and the Acton Senior Center. Sodium levels in drinking water vary considerably from well to well and month to month. For the most accurate data on sodium levels at your home, an individual tap sample would be necessary.

**LEAD AND COPPER:** 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 Acton Water District 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:** For short-term 10-day exposures, EPA advises that levels in drinking water be below 1 mg/L (100 ppb). Infants and children less than 3 years of age should consume drinking water with manganese levels below 0.3 mg/L (300 ppb), or preferably as low as possible. This recommendation is based on concerns about effects to the nervous system that are more likely to occur in younger children, and because formula-fed infants/children already receive adequate manganese as an added essential nutrient in their formula.

**1,4 – DIOXANE:** In November 2010 the Acton Water District collected samples for this compound in the raw and treated waters of the Assabet and School Street wells. This sampling was conducted due to the presence of this compound at the WR Grace Superfund site in South Acton. 1,4-dioxane is not a regulated contaminant, and the State of Massachusetts has not established an MCL or approved a laboratory process for analyzing this compound. Samples collected did not exhibit any concentration of this contaminant within the detection limits of the method used to analyze the sample. The Water District is following the potential regulation of this contaminant and the effect it may have on our water system. The Massachusetts DEP is evaluating the current guideline of 3.0 ppb for this compound and the United States EPA is proposing to require assessment monitoring nationwide between 2013 and 2105 to determine if an MCL or other regulatory action is appropriate.

**CHRISTOFFERSON WELL:** In November 2010 the Acton Water District was notified that one of its groundwater wells was being reclassified. The Massachusetts DEP required testing beginning in October 2008 to determine if nearby surface water was being drawn into our well. This will require us to treat the water from the Christofferson well to comply with federal Surface Water Treatment Rule standards. In the interim, we are required to notify our customers of this designation and provide enhanced disinfection at the School Street treatment facility. We have submitted a corrective action plan detailing our efforts to construct a new treatment facility with a proposed startup date of April 2014.

**VOLUNTARY MONITORING:** In addition to the monitoring required by the Safe Drinking Water Act, the Acton Water District voluntarily conducts hundreds of additional tests each year to ensure high quality water. For more information on our voluntary monitoring, please contact us.

**VULNERABILITY:** Some people may be particularly vulnerable to impurities in drinking water. 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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

# Do You Want to Be More Involved?

The Board of Water Commissioners meetings are scheduled on the second and fourth Monday of each month at 7:30 p.m., and all citizens of Acton are welcome to attend. If you wish to attend, please call us to confirm the next meeting date. Our Annual Meeting is held on the third Wednesday of March every year. All interested persons are welcome to attend. Updates on meeting schedules, special programs, and projects can be found at our website: *www.actonwater.com.*

# Cross Connections

A cross connection is any actual or potential connection between a distribution pipe of potable water supplied by the public water system and any waste pipe, soil pipe, sewer, drain or other unapproved source. If not properly protected or eliminated, a cross connection can cause health problems and spread disease.

There are two methods by which contamination can enter the drinking water, backpressure and back siphonage. Backpressure occurs when the pressure in the property exceeds the drinking water pressure. This can be caused by air conditioning units, boiler systems and other pressure building devices connected to the drinking water supply. Back siphonage occurs when the drinking water pressure drops off and a vacuum sucks the water from the building. This can be caused by the authorized or unauthorized use of a hydrant, water main breaks, and other heavy water demands.

**A typical hose bib as seen on most residential properties.**

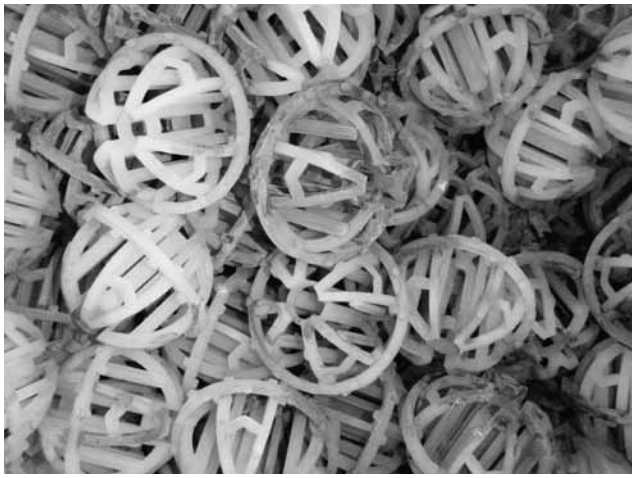
Cross Connections are classified by their degree of hazard and depending on that hazard level, dictates how it is protected. For high hazard conditions, such as a metal plating facility, it would require a device referred to as an "RPZ" or Reduced Pressure Zone Device that is tested semi-annually by the Acton Water District. A moderate hazard condition, such as a Fire Sprinkler line, requires a "DCVA" or Double Check Valve Assembly and this device is tested annually. A low degree of hazard would be a garden hose, devices like this require a hose bib vacuum breaker. There are degrees of hazard that fall between these categories such as an in-ground irrigation system, this degree of hazard is classified as low-moderate and requires an "AVB" or Atmospheric vacuum breaker.

There has never been a cross connection incident in Acton to our knowledge, but there have been several in the state of Massachusetts and even more in the country. Recently in Somerset Massachusetts, a landscape contractor illegally and improperly utilized a fire hydrant to fill a hydroseeding machine. This created a do not drink order for the users of that water system until adequate flushing could occur to make the water system safe again.

Everyone should be aware and do their part to prevent drinking from becoming contaminated by a cross connection. By surveying all industrial, commercial and institutional facilities for cross connections, the Water District ensures that the water supplied to the last free flowing tap in every home and office is of the highest quality. All residential homes with irrigation systems are supposed to be registered with us and required to have backflow protection. Please contact Bob Murch, our cross connection coordinator for more information.

# Conservation Rebates Available


The Water District is offering rebates to our residential customers that replace older, inefficient toilets and washing machines with new high efficiency models. If you have a leaking toilet, consider replacing it instead of repairing it. Choose a new washing machine to save water, energy, and your clothes. Most of the qualifying units allow your clothes to be "drier" before you put them in your clothes dryer, this means less heat and spinning to dry your laundry. The American Water Works Association estimates that almost half of all water consumed inside the home is used by toilets and washing machines. On average, we estimate that our customers who replaced a toilet would consume 13% less water and those replacing a washing machine would use 15% less water. Household savings will vary based on the number of individuals in the home and water use habits. Toilets that are certified by the U.S. EPA WaterSense℠ program are eligible for a $75 rebate per toilet. High efficiency clothes washers that meet the Consortium for Energy Efficiency's Tier 3 criteria are eligible for a $100 rebate. Qualifying models must be purchased between April 1 and November 1, 2011 with all paperwork submitted by November 15, 2011. Rebates will be issued as a credit on your water bill. Please visit our website for applications and links to qualifying units.



## What is it?

Please email your answers to *webgeek@actonwater.com*. Winners (and the correct answer) will be posted in the next *Water Words Notice.*

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is published twice a year
for all customers of the
Acton Water District

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## What was it?

Three readers (Joe Robb, James McDonough, and Kayti Sweeney) correctly identified the mystery photo in our Winter 2010–2011 Water Words as a Vermeer directional drilling rig. This drilling rig was used by our water main replacement contractor to install new water mains under the multiple culverts along Arlington Street. During the summer of 2010 and spring of 2011, the District contracted with Onyx Transportation of Acton to replace approximately 3,800 linear feet of water main and repave the road surface.