

# 2010 Water Quality Report

For Customers in  
the Mystic System



**AQUARION**

## A Message from the President & CEO



Charles V. Firlotte,  
President and CEO

Aquarion Water Company is again proud to provide you with our latest Water Quality Report, showing how the water we supplied to you in 2010 met or surpassed the stringent quality standards set by state and federal authorities.

These results were achieved during a particularly challenging year, when a severe drought in July led to record demands on supply in some of our systems. Customers responded by voluntarily reducing lawn watering, car washing and other usage. That helped us maintain water pressure and quality, and we are extremely grateful to the thousands of customers who voluntarily cooperated with the temporary conservation measures we initiated.

Fortunately, in our area, the dry conditions we experienced last summer are rare. Normally, we're able to meet the demand for an abundant, quality water supply through constant maintenance and upgrades throughout our network of dams, reservoirs, wells, storage tanks, treatment plants, pumping stations and water mains.

### ***Our commitment to you***

In fact, Aquarion's commitment to quality goes beyond assuring you of the safety and purity of every drop of water from your tap. It also includes our many programs to promote a healthy environment in, around and well beyond our various water sources – whether that involves protecting the land around our reservoirs, helping migrating eels safely navigate past our treatment equipment or supporting local environmental education programs.

In addition, we recently announced the Aquarion Environmental Champion Awards, a program designed to honor individuals young and old as well as businesses and non-profit organizations whose voluntary efforts are making a real difference to Connecticut's environment. More information on this and other water quality efforts can be found on our website, [aquarionwater.com](http://aquarionwater.com).

I'd like to close by noting an honor that you helped Aquarion receive. In 2010, for the fourth year in a row, a survey conducted by the Connecticut Department of Public Utility Control showed Aquarion as having the highest customer satisfaction levels among all utilities in the state – water, electric, natural gas, telecommunications and cable television.

We're delighted with this distinction. And we pledge to do all we can to continue earning your trust in the quality of the water we supply and every other aspect of our operations.

Sincerely,

Charles V. Firlotte, President and CEO

### ***In This Report***

|                                  |   |
|----------------------------------|---|
| Table of Test Results            | 3 |
| Protecting Water Quality         | 4 |
| Your Health Is Our Priority      | 5 |
| Where Does Your Water Come From? | 6 |

## **FREE** Admission Tickets

Exclusive Offers  
For Aquarion  
Customers



Stamford Museum  
& Nature Center



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INSTITUTE FOR  
EXPLORATION



Hockey Team

*Be sure to take advantage of these special 2-for-1 ticket offers that Aquarion has arranged for its customers at great Connecticut attractions. Just head for [aquarionwater.com](http://aquarionwater.com), print out the free admission tickets you'll find there, and then enjoy a fun time courtesy of Aquarion and our statewide community partners!*

# The Results Are In

## Treated Water Table

Your water has been tested for more than 100 compounds that are important to public health. Only 15 of these were detected, all of which were below the amounts allowed by state and federal law. Most of these compounds are either

naturally occurring or introduced as treatment to improve water quality. Monitoring frequency varies from daily to once every nine years per EPA regulation, depending on the parameter. Our testing encompasses the full range of

regulated radiological, inorganic, and organic compounds and microbiological and physical parameters. Results shown below are for detected compounds only.

| Substance                         | Highest Allowed by Law |                               | Compliance | Test Date | Mystic System Detected Level |               |
|-----------------------------------|------------------------|-------------------------------|------------|-----------|------------------------------|---------------|
|                                   | MCLG                   | MCL                           |            |           | Average                      | Range         |
| <b>Inorganic Compounds</b>        |                        |                               |            |           |                              |               |
| Barium                            | 2 ppm                  | 2 ppm                         | YES        | 2010      | 0.021                        | 0.018 – 0.032 |
| Copper                            | 1.3 ppm                | AL = 1.3 ppm                  | YES        | 2008      | 0.24*                        |               |
| Fluoride                          | 4.0 ppm                | 4.0 ppm                       | YES        | 2010      | 1.13                         | 0.60 – 1.63   |
| Lead                              | 0 ppb                  | AL = 15 ppb                   | YES        | 2008      | 1**                          |               |
| Nitrate                           | 10 ppm                 | 10 ppm                        | YES        | 2010      | 0.096                        | 0.015 – 0.332 |
| <b>Microbials</b>                 |                        |                               |            |           |                              |               |
| Turbidity                         | N/A                    | TT = 1 NTU max                | YES        | 2010      | 0.08+                        | 0.05 – 0.76   |
| Turbidity                         | N/A                    | TT = 95% of samples < 0.3 NTU | YES        | 2010      | 99.4%                        |               |
| <b>Disinfectant</b>               |                        |                               |            |           |                              |               |
| Chlorine                          | MRDLG 4 ppm            | MRDL 4 ppm                    | YES        | 2010      | 1.02                         | 0.05 – 1.68   |
| <b>Organic Compounds</b>          |                        |                               |            |           |                              |               |
| Total Organic Carbon (TOC)        | N/A                    | TT = Removal Ratio > 1#       | YES        | 2010      | 1.6                          | 1.2 – 1.7     |
| Total Trihalomethanes             | N/A                    | 80 ppb                        | YES        | 2010      | 40***                        | 8 – 92        |
| Total Haloacetic Acids            | N/A                    | 60 ppb                        | YES        | 2010      | 37***                        | 11 – 89       |
| <b>State-Required Testing</b>     |                        |                               |            |           |                              |               |
| <b>Physical Characteristics ^</b> |                        |                               |            |           |                              |               |
| Color                             | N/A                    | 15 CU                         | YES        | 2010      | 1                            | 0 – 9         |
| pH                                | N/A                    | 6.4 – 10.0 units              | YES        | 2010      | 7.4                          | 6.8 – 9.9     |
| Turbidity                         | N/A                    | 5 NTU                         | YES        | 2010      | 0.12                         | 0.05 – 2.5    |
| <b>Inorganic Compounds</b>        |                        |                               |            |           |                              |               |
| Chloride                          | N/A                    | 250 ppm                       | YES        | 2010      | 14.1                         | 13.4 – 16.3   |
| Sodium                            | N/A                    | NL = 28 ppm                   | N/A        | 2010      | 21.0                         | 14.9 – 31.3   |
| Sulfate                           | N/A                    | SMCL = 250 ppm                | N/A        | 2010      | 20.8                         | 18.6 – 27.1   |

### Footnotes and Definitions for table on left

- > Greater than
- < Less than
- AL Action Level
- CU Color Units
- MCL Maximum Contaminant Level
- MCLG Maximum Contaminant Level Goal
- MRDL Maximum Residual Disinfectant Level
- MRDLG Maximum Residual Disinfectant Level Goal
- N/A Not Applicable
- NL State of Connecticut customer notification level
- NTU Nephelometric Turbidity Units, a measure of the presence of particles. Low NTUs is an indicator of high-quality water.
- ppb parts per billion, or micrograms per liter (ug/L)
- ppm parts per million, or milligrams per liter (mg/L)
- SMCL Secondary Maximum Contaminant Level
- TT Treatment Technique
- \* 90th percentile value in copper monitoring. Result is representative of customer sampling stagnant water. No locations exceeded the action level for copper.
- \*\* 90th percentile value in lead monitoring. Result is representative of customer sampling stagnant water. No locations exceeded the action level for lead. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels in your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and run your tap for 30 seconds to 2 minutes before using your water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).
- \*\*\* Reported value is the highest annual average of quarterly measurements for disinfection by-products in the distribution system. Values in the range are individual measurements.
- + Reported value is the highest monthly average for turbidity reported from the surface water treatment plant effluent. Values in the range are individual measurements.
- # The monthly TOC removal ratio is calculated as the ratio between the actual TOC removed and the TOC rule removal requirements. This number should be greater than 1.0.
- ^ Measured at representative locations within the distribution system.

# Digest of Water Quality Information

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

**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.

**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.

**MRDL:** 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.

**Treatment Technique:** A required process intended to reduce the level of a contaminant in drinking water.

## HEALTH EFFECTS

**Sodium:** If you have been placed on a sodium-restricted diet, please inform your physician that our water may contain as much as 31.3 ppm of sodium.

## SOURCES OF CONTAMINANTS

**Barium:** Erosion of natural deposits.

**Copper:** Corrosion of household plumbing systems.

**Fluoride:** Water additive that promotes strong teeth; Erosion of natural deposits.

**Lead:** Corrosion of household plumbing systems.

**Nitrate:** Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

**Turbidity:** Sediment particles; Naturally occurring iron and manganese; Soil runoff.

**Chlorine:** Water additive used to control microbes.

**Total Organic Carbon:** Naturally present in the environment.

**Total Trihalomethanes:** By-product of drinking water chlorination.

**Total Haloacetic Acids:** By-product of drinking water chlorination.

**Color:** Natural organic matter such as decaying leaves; Naturally occurring iron and manganese.

**pH:** Naturally occurring; Water treatment processes.

**Chloride:** Naturally present in the environment.

**Sodium:** Water treatment processes; Use of road salt; Naturally present in the environment.

**Sulfate:** Naturally present in the environment.

## Protecting your water at home: Lawn irrigation systems

Your irrigation system helps keep the lawn healthy and beautiful, but did you know it also could contaminate your family's drinking water? Chemicals and microbes on the lawn could flow back through your home's plumbing and even into the neighborhood water mains under low-pressure conditions. These conditions can occur when hydrants are in use for firefighting, and when water mains break.

To prevent this backflow contamination, the state Department of Public Health requires that we inspect your irrigation system to ensure that an appropriate backflow prevention device is in place. The state DPH also requires that these devices be tested annually to ensure proper performance. Please call us at 203-337-5871 to schedule your annual inspection and test.

## Source Water Assessment Report

The state Department of Public Health (DPH) has found that the public drinking water sources in the Mystic System have a low susceptibility to potential contamination sources. To read the DPH report, visit [ct.gov/dph](http://ct.gov/dph).

## What is Aquarion doing to protect your drinking water?

Aquarion Water Company's commitment to providing the highest quality water is

evidenced by our regular inspection of homes, businesses, farms, and other sites that could pollute water supplies, and by our review of new land-development projects for impact on water quality. We use the best water treatment and filtration technology and continue to invest in our water system's infrastructure to improve the security and the quality of your water.

## Protecting water at the source

Even small quantities of pollutants may be enough to contaminate a drinking water supply. Examples of pollutants that may wash into surface water or seep into ground water include:

- ▶ Microbial contaminants from septic systems, agriculture and livestock operations, and wildlife;
- ▶ Inorganic contaminants such as salts and metals that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, or farming;
- ▶ Pesticides and herbicides from sources such as agriculture, urban storm water runoff, and residential uses;
- ▶ Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes; and
- ▶ Radioactive contaminants that can be naturally occurring.

## You can help

- ▶ Ensure that your septic system is working correctly.
- ▶ Use chemicals and pesticides wisely.
- ▶ Dispose of waste chemicals and used motor oil properly.
- ▶ Report illegal dumping, chemical spills, or other polluting activities to the CT DEP's 24-hour hotline **(860-424-3338)**, Aquarion Water **(203-452-3500)**, or your local police.

## Use water wisely

Our water supply is sufficient to meet your needs, but we still encourage you to conserve this precious natural resource for the good of our environment. There are plenty of simple steps you can take to cut back your water consumption: fix faucet and toilet leaks; turn off the water while shaving or brushing your teeth; run full loads in your dishwasher and clothes washer; water your lawn in early morning; and use a broom to clean debris from your driveway instead of a hose.



# QUALITY

# Your Health Is Our Priority

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)**.

Here is some additional information of interest about Aquarion's drinking water. Copper, Lead, Cryptosporidium and Disinfection By-Products are regulated under the Safe Drinking Water Act, and your drinking water meets the standards set by these regulations. Pharmaceuticals and Radon currently are not regulated, but Aquarion is investigating their potential presence for informational purposes.

## ***Pharmaceuticals in the environment***

The U.S. Environmental Protection Agency (EPA) and other scientific sources have released water quality studies in the past few years that show the presence of pharmaceuticals, or prescription drugs, in our nation's water bodies. Recent reports have documented that some pharmaceuticals are present at low levels in some public drinking water supplies. This situation occurs when wastewater is released into water bodies that are used as or feed into drinking water supplies. The risk to Connecticut residents is minimized, however, because state law prohibits the discharge of wastewater into drinking water sources.

The EPA uses a well-defined process to determine whether a specific chemical or microbe found in drinking water should be regulated. Under this process, the EPA has considered more than 280 pharmaceutical compounds. In its most recent Contaminant Candidate List (September, 2009), the EPA has added 10 pharmaceutical compounds that will be considered for possible regulation. To date, according to the EPA, scientists have found no direct evidence of adverse human health effects from pharmaceuticals in the environment at levels they have detected. Aquarion scientists will continue to monitor developments with federal and state health agencies on this matter and plan to begin testing for pharmaceuticals in 2011. For more information, visit our website at [aquarionwater.com](http://aquarionwater.com) or the EPA and state websites listed on the back cover of this report.

## ***Copper and Lead***

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short period of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor. Major sources of copper in drinking water include corrosion of household plumbing systems, erosion of natural deposits, and leaching from wood preservatives.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water comes primarily from materials and components associated with service lines and home plumbing. Aquarion Water Company 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 [epa.gov/safewater/lead](http://epa.gov/safewater/lead).

## ***Cryptosporidium***

The EPA requires public water systems that use surface water sources to monitor for Cryptosporidium. This is a microbial pathogen found in lakes and rivers throughout the U.S. that can cause gastrointestinal illness if consumed. Aquarion continues to monitor its water sources, and no Cryptosporidium was detected in the Mystic area reservoirs in 2010.

## ***Immuno-compromised persons***

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 infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care

providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the **Safe Drinking Water Hotline (800-426-4791)**.

## ***Disinfection By-Products***

Disinfection by-products (DBPs) are chemicals formed during the disinfection process, when naturally occurring organic matter reacts with chlorine, which is added to water to eliminate bacteria and other microorganisms. Currently there are limits on two types of DBPs known as Total Trihalomethanes (TTHM) and Total Haloacetic Acids (THAA). Some people who drink water containing DBPs that exceed these limits over many years may experience problems with their livers, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

New DBP regulations that change how compliance with the standards is determined will become effective in the next few years. The intent is to increase protection against the potential health risks associated with DBPs. Aquarion Water Company continues to evaluate its systems to ensure compliance with DBP regulations.

## ***Radon***

Radon is a radioactive gas that is found naturally underground and can enter drinking water wells and the air in buildings. Compared to radon entering the home through soil, radon in tap water will, in most cases, be a small portion of the total radon in indoor air. Breathing air containing radon can lead to lung cancer. Drinking water containing elevated radon levels may cause increased risk of stomach cancer.

Most of the water supplied to the Mystic System is surface water, which contains little or no radon. The radon level found in the Mystic System well water supply was 12 picocuries per liter (pCi/L). This level would contribute approximately 0.001 pCi/L of radon to home air, compared to the EPA's health guideline of 4.0 pCi/L for home air.

The EPA and Aquarion Water Company recommend that all homes be tested for radon in the air. For more information about radon, call the EPA's Safe Drinking Water Hotline or visit the EPA website at [epa.gov/safewater/radon.html](http://epa.gov/safewater/radon.html).

# Your 2010 Water Quality Report

Customers with questions about water quality can call us at **203-445-7341** or **800-832-2373**; send an e-mail to [waterquality@aquarionwater.com](mailto:waterquality@aquarionwater.com); or visit [aquarionwater.com](http://aquarionwater.com).

For other questions, or to report discolored water or other service problems, call **203-445-7310** or **800-732-9678**.

Connecticut Department of Public Health  
Drinking Water Section:

**860-509-7333** or [ct.gov/dph](http://ct.gov/dph)

U.S. Environmental Protection Agency's  
Safe Drinking Water Hotline:

**800-426-4791** or [epa.gov/safewater](http://epa.gov/safewater)

**PWS ID#: CT1370011**  
The Mystic System



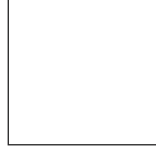
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Water Company

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Go To  
[aquarionwater.com](http://aquarionwater.com)  
For Info And Easy Sign-Up!

## Where Does Your Water Come From?

Your water is collected in reservoirs and wells, treated, and delivered to you through an extensive underground piping system. The Mystic System supply, which serves about 10,600 people, is drawn from the Palmer and Dean's Mill reservoirs and the Lantern Hill Well. The reservoirs supply approximately 74% of the 1.3 million gallons of water per day that customers use on average. Company-wide, an average of 16.6% of the demand is water drawn for firefighting, water main cleaning, water main breaks and leaks, and unauthorized use.

### **How is your water treated?**

The reservoir water is filtered at the Dean's Mill Water Treatment Plant in Stonington. The well water is filtered naturally underground. All water for the Mystic System is disinfected, fluoridated, and further treated to protect the water supply piping system.

# AQUARION