



Dear Valued Customer:

At Connecticut Water we know that water touches everything we care about. Our team of 200 dedicated, highly trained professionals is committed to providing you with a reliable supply of high quality water and responsive service. We know the most important thing we do each and every day is to provide clean, safe drinking water so families can trust the water we provide will contribute to their good health. The importance of what our water professionals do every day is more evident these days with the recent media coverage of the water quality crisis in Flint, Michigan. We know customers may have questions and we want to assure you that we take a number of steps in our water treatment and testing so you can have confidence in your water quality.

You should know lead is rarely found in surface water (lakes, streams) and groundwater (aquifers, wells). Connecticut Water conducts extensive water quality testing at our sources and within our distribution system and no lead has been detected. The primary way lead can enter drinking water is when it comes in contact with lead service lines or household plumbing (pipes, faucets) made from lead.

A critical step in reducing the risk of lead leaching from customers' service line or internal plumbing is to adjust the pH in the water system. We have a comprehensive corrosion control program that provides treatment based on the source water quality. Further, we fully comply with the EPA requirements regarding sampling for lead in drinking water and have provided documentation to the Connecticut Department of Public Health to demonstrate our results.

Connecticut Water's 2016 Annual Water Quality Report includes the results of more than 170,000 samples, or about 400 tests per day, tested at state certified laboratories for more than 120 potential contaminants and water quality parameters. Our water quality testing data is regularly reviewed for changes or trends and any customer water quality complaint is escalated for review by our water quality team. We are pleased to report the water quality results in your system meet state and federal drinking water standards.

We strive to make this report easy to read to help you understand more about your drinking water – where it comes from, what is done to protect and treat it, and what is in it. Within these pages are details about the drinking water quality test results, the source(s) of the drinking water supply, and information about the Connecticut Department of Public Health (DPH) Source Water Assessment and Protection program, which is used to evaluate potential sources of contamination that may be near public water supply sources.

Connecticut Water is committed to the stewardship of its water resources, land and the environment and to its protection and conservation for current and future generations. We have a comprehensive source protection program for our water supplies, aquifers and watershed areas. We own and protect approximately 6,000 acres of land that is maintained as protected open space. In addition, our source protection staff review and comment on local land development proposals that could affect water quality at our sources of supply. We regularly inspect more than 3,200 properties within our surface water supply watersheds.

Delivering safe drinking water to our customers and communities is our highest priority. Our Connecticut Water team appreciates the trust you put in us every day when you turn on the tap. We are committed to honoring that trust and delivering you a world-class product at less than a penny a gallon. If you have any questions or comments about your drinking water or this report, please call our Customer Service staff at 1-800-286-5700 or send an e-mail to publicaffairs@ctwater.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "Eric W. Thornburg".

Eric W. Thornburg
President and CEO

2016 Water Quality Report

Redwood Farms System

Public Water System ID # CT0770041



Connecticut Water is pleased to present a summary of the quality of the water provided to you during the past year. This report was prepared under the requirements of the Federal Safe Drinking Water Act to report annually the details of where your water comes from, what it contains, and the risks that our water testing and treatment are designed to prevent. This year, the federal law allows water providers to make reports available online as the accepted form of notification. In our effort to reduce costs and environmental impacts of printing, we will provide the information online and will mail the report to customers who request it. Connecticut Water will notify all customers through bill inserts, news releases, our [Web site](#), [Facebook](#) and [Twitter](#) that water quality reports for all systems are available online or upon request.

If you have any questions about this report, please call our customer service team at 1-800-286-5700 or e-mail us at publicaffairs@ctwater.com.

Water Source: The Redwood Farms System serves customers in the town of Manchester. Water for the Redwood Farms System comes from bedrock groundwater wells.

Sources of tap water and bottled water include reservoirs, ponds, wells, and springs. As water travels over the surface of the land or through the ground, it can dissolve naturally occurring minerals and in some cases, radioactive material, and pick up substances resulting from the presence of animals or from human activity, including:

- Viruses and bacteria, which may come from septic systems, livestock, or wildlife.
- Salts and metals, which can be natural or may result from storm water runoff and farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, or farming.
- Organic chemicals, which originate from industrial processes, gas stations, storm runoff, and septic systems.
- Radioactive substances, which can be naturally occurring.

To ensure safe tap water, the U.S. Environmental Protection Agency (EPA) prescribes limits on these substances in water provided by public water systems.

Source Water Assessment: The Source Water Assessment and Protection (SWAP) program assesses the susceptibility of public water supplies to potential contamination by microbial and chemical contaminants. The susceptibility ranking was assigned using information collected during assessment by the Department of Public Health (DPH).

The following table summarizes the SWAP assessments for the Redwood Farms System. The assessments are not an indication of water quality from our water sources. The completed SWAP reports can be found at

<http://tinyurl.com/cwc-swapreport>

Town	Water Supply Source	Type	Overall Susceptibility
Manchester	Well 1	Groundwater	High
Manchester	Well 2	Groundwater	High

Protecting Water Sources: Many people don't know that most contaminants enter rivers, lakes, and reservoirs from storm water runoff of streets, golf courses, athletic fields, construction sites, farms, and neighborhoods like yours. You can help reduce polluted runoff using the following guidelines:



- Restrict the use of lawn chemicals, especially before heavy rains.
- Dispose of pet or animal waste properly so that it does not wash into a nearby stream or storm drain.
- Have septic tanks inspected every two years, and cleaned as needed. Make septic system repairs as soon as possible.
- Do not pour used motor oil on the ground or into storm drains. Contact your town for proper disposal of household chemicals.
- Report muddy runoff from construction sites to your town's zoning or wetland officials.

Connecticut Water regularly inspects more than 3,200 properties within its public water supply watershed areas throughout the state. Our Field Service inspectors protect your drinking water by inspecting properties and ensuring they meet the regulations set by the Connecticut DPH. They look for and report conditions such as failing septic systems, drainage discharge, livestock, soil erosion and sedimentation leaking heating oil tanks, fertilizer and pesticide use or illegal dumping that could affect water quality.

Educational Information about Lead and Copper: Connecticut Water believes it is important to provide you with information about the sources of lead and copper in drinking water and the health effects associated with them. The primary source of lead and copper in tap water is household plumbing, and plumbing can vary from house to house within the same neighborhood. For information on the levels of lead and copper detected in your drinking water system, please refer to the table in this water quality report.

If you are concerned about elevated lead or copper levels, you may wish to have your water tested. Running your tap for 30 seconds to two minutes before use will significantly reduce the levels of lead and copper in the water. Additional information is available from the U.S. Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

What is Radon: There is currently no federal drinking water standard for radon and it is not clear whether radon that is ingested (i.e. taken through the mouth) contributes to cancer or other adverse health conditions. EPA is considering a standard of no more than 4,000 pCi/L in water, though the final EPA standard may be different. As more information becomes available, Connecticut Water will take appropriate measures as may be necessary.

Radon is a colorless, tasteless, naturally occurring radioactive gas that may be present in rock, soil, groundwater and air. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can enter homes from tap water during showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will, in most cases, be a very small portion of the total radon in indoor air. Approximately only 1 part in 10,000 of radon in water will move into the air through these normal household activities.

Special Considerations: 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/Center of Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).



Water Quality Data – Redwood Farms System

The results of the tests conducted on distribution water samples for regulated compounds are summarized in the table below. While most monitoring was conducted in 2016, certain substances are monitored less than once per year because the concentrations are expected not to change frequently. If levels were tested prior to 2016, the year is identified in parentheses. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. The “Highest Level Detected” column represents the highest concentration detected throughout the monitoring period.

DISINFECTANT RESIDUAL								
Analyte	Unit	MRDL	MRDLG	Range of Detection		Sample Year	Met Drinking Water Standards	Typical Source
				Low	High			
Chlorine	ppm	4	4	ND	1.05	2016	Yes	Water additive used to control microbes

INORGANIC CHEMICALS								
Analyte	Unit	MCL	MCLG	Range of Detection		Sample Year	Met Drinking Water Standards	Typical Source
				Low	High			
Barium	ppm	2	2	0.155	0.155	2016	Yes	Erosion of natural deposits
Chloride	ppm	250	NA	68.6	80	2016	Yes	Erosion of natural deposits
Nickel	ppb	100	100	ND	ND	2016	Yes	Erosion of natural deposits
Nitrate	ppm	10	10	0.99	1.25	2016	Yes	Runoff from fertilizer
Sodium	ppm	NL=>28	NA	29.4	37.6	2016	Yes*	Erosion of natural deposits
Sulfate	ppm	NA	250	69.3	73.2	2016	Yes	Erosion of natural deposits

* Sodium Notification

During routine water quality testing in the Redwood Farms System, the results of one water quality sample indicated a sodium level of 37.6 ppm. The State of Connecticut has established a notification level of greater than 28 ppm for sodium in drinking water. Further, Section 19-13-B102 of the State Public Health Code requires us to provide a notice to you if the sodium content exceeds 28 ppm. The reason for the notification is so that consumers on low or restricted sodium diets may take into account their sodium intake from the drinking water. If you have been placed on a sodium-restricted diet, please inform your physician that based on 2016 testing, your water contains 37.6 ppm of sodium.

Nitrate:

Connecticut Water Company's Redwood Farms System is in compliance with the EPA's standard of less than 10 ppm for nitrate in drinking water. However, you should know that a nitrate level in drinking water above 10 ppm is a health risk for infants less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you may want to ask for advice from your health care provider.

RADIONUCLIDES								
Analyte	Unit	MCL	MCLG	Range of Detection		Sample Year	Met Drinking Water Standards	Typical Source
				Low	High			
Uranium	ppb	30	0	2.9	2.9	2014	Yes	Erosion of natural deposits
Radon	pCi/L	NA	NA	1,068	1,068	2014	Yes	Erosion of natural deposits

What is Radon:

There is currently no federal drinking water standard for radon and it is not clear whether radon that is ingested (i.e. taken through the mouth) contributes to cancer or other adverse health conditions. EPA is considering a standard of no more than 4,000 pCi/L in water, though the final EPA standard may be different. As more information becomes available, Connecticut Water will take appropriate measures as may be necessary.

Radon is a colorless, tasteless, naturally occurring radioactive gas that may be present in rock, soil, groundwater and air. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can enter homes from tap water during showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will, in most cases, be a very small portion of the total radon in indoor air. Approximately only 1 part in 10,000 of radon in water will move into the air through these normal household activities.

If you are concerned about radon in your home, you may wish to test the air. Testing is inexpensive and easy. For additional information, call DPH at 860-509-7367 or EPA's Radon Hotline at 1-800-SOS-RADON.

MICROBIOLOGICAL							
Analyte	MCL	MCLG	Detected in Water System		Sample Year	Met Drinking Water Standards	Typical Source
Total Coliforms	>1 sample per monitoring period	0	Present		2016	No	Naturally present in environment
E. coli		0	Absent		2016	Yes	
Turbidity	TT >5 NTU	0	ND	1.41	2016	Yes	Soil runoff

Total Coliform MCL Violation

This public water system had violations of the drinking water standard for total coliform during routine water quality monitoring this past year. The incidents were not emergencies and did not require customers to take any precautions such as boiling water before consuming, but you have a right to know what happened and what we did to correct these situations.

The results of required water quality tests during the months of January, February and March of 2016 indicated the presence of total coliform bacteria. The standard for a system this size is that no more than 1 sample per monitoring period show the presence of total coliform bacteria. The EPA sets drinking water standards and has determined that the presence of total coliform is a concern. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. No harmful bacteria were detected in the water during these monitoring periods. Connecticut Water Company, in consultation with the Connecticut Department of Public Health, initiated permanent chlorine disinfection to mitigate the potential for future occurrences. Coliform bacteria have not been detected since chlorine has been added to the system.

LEAD AND COPPER									
Analyte	Unit	MCL	MCLG	Range of Detection		90 th %ile value	Sample Year	Met Drinking Water Standards	Typical Source
				Low	High				
Lead	ppb	AL = 15	0	ND	5	4	2016	Yes	Corrosion of household plumbing systems
Copper	ppm	AL = 1.3	1.3	0.101	0.227	0.214	2016	Yes	Corrosion of household plumbing systems

Educational Information about Lead and Copper:

Connecticut Water believes it is important to provide you with information about the sources of lead and copper in drinking water and the health effects associated with them. The primary source of lead and copper in tap water is household plumbing, and plumbing can vary from house to house within the same neighborhood. For information on the levels of lead and copper detected in your drinking water system, please refer to the table above.

What is lead:

Major sources of lead in drinking water are corrosion of household plumbing systems and erosion of natural deposits. Health Effects: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink water containing lead in excess of the action level over many years could develop kidney problems or high blood pressure.

What is copper:

Major sources of copper in drinking water are corrosion of household plumbing systems, erosion of natural deposits, and leaching from wood preservatives. Health Effects: Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount 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. Anyone with Wilson's Disease should consult their personal doctor.

If you are concerned about elevated lead or copper levels, you may wish to have your water tested. Running your tap for 30 seconds to two minutes before use will significantly reduce the levels of lead and copper in the water. Additional information is available from the U.S. Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

DISINFECTION BYPRODUCTS									
Analyte	Unit	MCL	MCLG	Range of Detection		LRAA	Sample Year	Met Drinking Water Standards	Typical Source
				Low	High				
Total Trihalomethanes	ppb	80	NA	12.6	14.3	14.3	2016	Yes	By-product of drinking water disinfection
Haloacetic Acids	ppb	60	NA	ND	3.4	3.4	2016	Yes	By-product of drinking water disinfection

TERMS AND ABBREVIATIONS

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

LRAA = Locational Running Annual Average: The average of sample analytical results for samples taken at a particular monitoring location during the previous 4 calendar quarters. The LRAA is used for direct comparison to the MCL.

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 = Maximum residual disinfectant Level Goal: 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 contamination.

NA = Not Applicable

ND = Not Detected

NL = Notification Level: There is no MCL for sodium. However, the Connecticut Department of Public Health requires that customers be notified if sodium levels exceed 28 ppm.

NTU = Nephelometric Turbidity Unit: A measure of water clarity.

ppm = parts per million, or milligrams per liter (mg/L)

ppb = parts per billion, or micrograms per liter (µg/L)

pCi/L = picocuries per liter (a measure of radioactivity)

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

90th percentile = 90th percentile value: The calculated value that is equal to or greater than 90 percent of the individual sample concentrations for the water system. The 90th percentile value is used for direct comparison to the AL.

Special Considerations:

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/Center of Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Infrastructure Investment

As part of our commitment to maintaining water quality and service, Connecticut Water Company has invested more than \$250 million in infrastructure over the past 10 years, or more than \$2,700 per customer. We are planning to invest another \$46.7 million in 2017. These expenditures have funded upgrades in areas such as water quality and treatment, storage and distribution, pipeline replacement and information technology. Since 2007, the company has replaced more than 80 miles of old water mains across the state, some over 100 years old, through the Water Infrastructure and Conservation Adjustment (WICA) program.

Families and communities see the benefit of these investments through:

- clean, safe drinking water that contributes to good health;
- an increase in the volume of water supplied to the nearby hydrant for public safety;
- a reliable supply of water for economic development and job creation; and
- new equipment and programs that result in greater water conservation, which is good for the environment.

We are investing in our systems so that they can continue to meet the needs of customers today and those of future generations.



Conserving Water Indoors and Outdoors:

Conserving water helps to ensure that we have an adequate supply of water for public health and safety, and reduces demands on the state's water resources. The typical residential customer uses 15,000 gallons of water per quarter or 60,000 per year. You can play a role in conserving water by becoming conscious of the amount of water your household is using. Conserving can lower your water bill, and depending on the community where you live, may reduce your sewer bill.

Here are some things you can do to conserve:

- Repair leaking toilets - check for toilet leaks by putting a drop of food coloring in the tank. If the food coloring seeps into the bowl without flushing, there is a leak.
- Consider installing a low-flow 1.6 gallon per flush toilet.
- Don't use toilets as a wastebasket.
- Fix leaking fixtures.
- Run full loads in the dishwasher.
- Set the water level in the washing machine to match the amount of clothes being washed.
- Water lawns and gardens in the early morning.
- Use mulch around plants and shrubs.
- Use a bucket rather than a running hose to wash cars.

Additional water conservation ideas and a link to a water saver calculator can be found on the conservation section of our [web site](http://www.ctwater.com) at www.ctwater.com.

