2015
Consumers' Annual Report on **Water Quality**

Regional Water Authority
Tapping the Possibilities™

The South Central Connecticut Regional Water Authority is proud of the life-sustaining drinking water we supply and honored to provide this report to you.

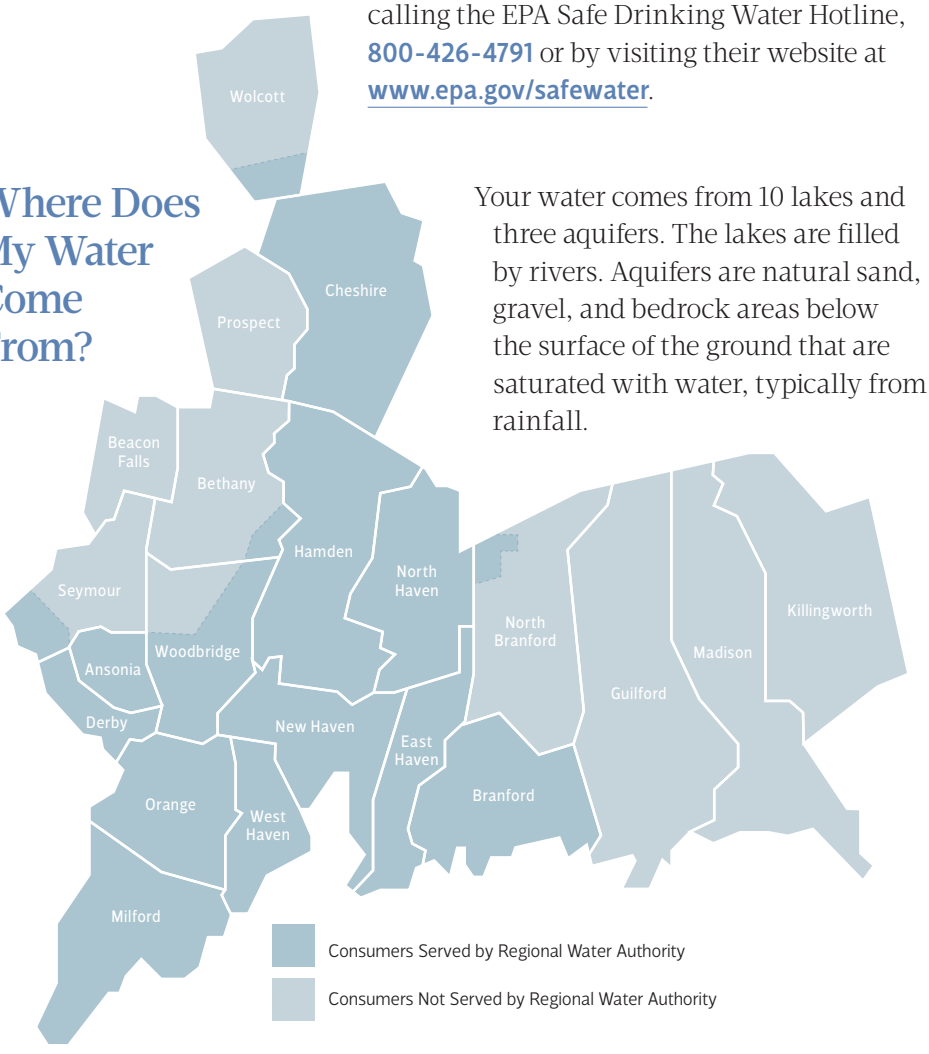
The 2015 Consumers' Annual Report on Water Quality shows where your water comes from, and the steps we take to protect your health and safety with our water treatment processes and water quality monitoring and testing.

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. We perform over 120,000 laboratory tests every year looking for more than 70 different contaminants; the tables in the report list only the contaminants we found.

Your water supply meets or surpasses all drinking water quality standards set by the U.S. Environmental Protection Agency (EPA) and the Connecticut Department of Public Health (CTDPH). You can find more information about contaminants and potential health effects by calling the EPA Safe Drinking Water Hotline, **800-426-4791** or by visiting their website at **www.epa.gov/safewater**.

Where Does My Water Come From?

Your water comes from 10 lakes and three aquifers. The lakes are filled by rivers. Aquifers are natural sand, gravel, and bedrock areas below the surface of the ground that are saturated with water, typically from rainfall.



Over 80 percent of the tap water in our water district comes from lakes located in Hamden, Woodbridge, East Haven, Bethany, Guilford, Madison, Killingworth, Branford, and North Branford. The rest of the tap water comes from the Quinnipiac and Mill River aquifers located in Cheshire and Hamden, as well as the Housatonic River aquifer in Derby and Seymour. The map shows the areas served.

Our distribution system is interconnected. Water from two or more sources may be delivered to some neighborhoods. This blending of water not only permits us to meet your water demands, especially during a heat wave, but readily ensures that water is available to fight a fire or other emergency.

The charts on the other side of this report show the water quality test results for the treated water that originates from the lakes and aquifers. Please note that the water coming from your tap could be from lakes, aquifers, or a combination of both during various times of the year.

Protecting Your Water

Before water ever reaches your tap, it goes through a multiple-step process. This approach focuses on watershed and aquifer management to protect the quality of our drinking water sources, treatment of the water prior to consumption, maintaining the distribution system that delivers the water to your tap, and monitoring the quality of the water to ensure that you receive the highest-quality water possible.

Lakes and Aquifers: Our source water protection program focuses on pollution prevention and watershed management. We protect over 27,000 acres of land in the region and manage it carefully. We monitor the quality of the water and all activity on the surrounding land, watching for potential contamination of the lakes and aquifers that are the sources of your tap water.

Treatment: Aquifer water is naturally filtered underground. Lake water is filtered at our filtration plants. We use chlorine to kill microbes that might cause illness, and we add fluoride to prevent dental cavities and phosphate to minimize corrosion of pipes.

Distribution: The treated or finished water is delivered to you through a 1,700-mile-long network of pipes, pumping stations and storage tanks. We carefully maintain this extensive network to ensure that high-quality water is available whenever you turn on your tap.

Monitoring: Our water testing is stringent. Last year we performed more than 120,000 tests on over 15,000 water samples taken from numerous locations throughout the water distribution system, within our water treatment plants, and in the lakes and aquifers where the water is stored prior to treatment. These samples are brought back to our state- and nationally-certified laboratory for microbiological testing as well as organic and inorganic chemical testing. The laboratory uses analytical devices as simple as pH meters or as complex as gas chromatographs and mass spectrometers. The results of these tests are compared to more than 175 state and federal standards and

are reported to the Connecticut Department of Public Health on a monthly, quarterly, and annual basis, ensuring that only the highest-quality drinking water is provided to our consumers.

Source Water Assessment Information

A Source Water Assessment lists possible contaminants that might affect the quality of your water sources. The Connecticut Department of Public Health, Drinking Water Division completed an assessment of the RWA's sources of water. You can find the most recent assessment of the RWA's water on the Department of Public Health's website: http://www.dir.ct.gov/dph/Water/SWAP/Community/CT0930011.pdf.

Additional Information

Sources of drinking water (both tap and bottled) include rivers, lakes, streams, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in the source water due to these activities include the following:

Inorganic compounds, such as salt and metals, can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

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

Organic chemical compounds, including synthetic and volatile organic chemicals that are byproducts of industrial processes and petroleum production, can come from gas stations, urban stormwater runoff, or septic systems. Some of these compounds, such as trihalomethanes and haloacetic acids, are disinfection byproducts that result from the use of chlorine as a disinfectant in water treatment, which reacts with naturally occurring materials in water.

Radioactive contaminants can be naturally occurring or may be the result of oil and gas production.

Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the United States. Radon can move up through the ground and into a home through cracks and holes in the foundation. The gas can accumulate to high levels in all types of homes. Radon can also get into indoor air when released from tap water during showers, washing dishes, and other household activities. In most cases, however, radon entering the home through tap water is a small source of all the radon in indoor air. Radon is a carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air. Testing is inexpensive and easy. If the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher, you need

to take steps to reduce it. For additional information, call the Connecticut Department of Public Health or call EPA's Radon Hotline (**800-SOS-RADON**).

Microbial contaminants, such as bacteria, viruses, and cryptosporidium, may come from sewage treatment plants, septic systems, agricultural livestock operations, wildlife, or natural sources.

In order to ensure that tap water is safe to drink, the EPA and the CTDPH prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. For more information, log onto the CTDPH website at: **www.ct.gov/dph/**.

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 from their health care providers about drinking water. The EPA and Center for Disease Control guidelines on ways to lessen the risk from contaminants are available from the Safe Drinking Water Hotline (**800-426-4791**).

Important Health Information

LEAD AND COPPER TESTING

The EPA developed the Lead and Copper Rule (LCR) to protect public health by minimizing lead and copper levels in drinking water. The most common source of lead and copper in drinking water is corrosion of plumbing materials. Plumbing materials that can be made with lead and copper include pipes, solder, fixtures, and faucets. The LCR established an action level of 15 ppb (parts per billion) for lead and 1.3 ppm (parts per million) for copper based on the 90th percentile level of tap water samples. This means that no more than 10 percent of the samples can be above either action level. The Maximum Contaminant Level Goal (MCLG) for copper is 1.3 ppm; the MCLG for lead is zero. The test frequency for lead and copper is determined by state and federal regulatory agencies with sampling conducted at the consumer's tap.

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 South Central Connecticut Regional Water Authority (RWA) is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components that might be present in homes and businesses. 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.

The major sources of copper in drinking water are the corrosion of household plumbing systems and the erosion of natural deposits. 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. People with Wilson's disease should consult their personal doctor. To minimize exposure to copper, please follow the flushing instructions for lead, outlined above.

SODIUM

Sodium is an essential nutrient in your diet. It helps maintain the right balance of fluids in your body and transmit nerve impulses to your muscles. One sample of water in 2015 temporarily was at Connecticut's sodium notification level of 28 milligrams per liter. Sodium in drinking water normally presents no health risks, as about 99 percent of your daily salt intake is from food and only about one percent is from water. For comparison, whole milk has a sodium content of 530 milligrams per liter. However, elevated sodium in water may be considered a health concern for those on a salt-restricted diet. If you have been placed on a sodium-restricted diet, please inform your physician that our water can contain as much as 28 milligrams per liter of sodium.

RESULTS OF CRYPTOSPORIDIUM MONITORING

Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Although filtration removes cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Our monitoring indicated that no organisms were detected in either the untreated source water or in the finished treated water ready for consumption.

The pages of this report contain a map (page 1) and important terms, definitions and abbreviations (page 10) referred to in this report.

Please refer to them as you review the information and charts (pages 7-10) in this Water Quality Report.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

This report contains important information about your drinking water. Translate it or speak with someone who understands it.

Using Water Efficiently

Water is a precious resource. It is important to use it wisely. While the normal amount of rainfall we receive is sufficient to meet our needs, we encourage consumers to use water wisely in the following ways:

EPA WaterSense PARTNER

Fix dripping faucets and leaky toilets.

Run the dishwasher and washing machine only when full.

Turn the water off when you brush your teeth or shave.

Install water-efficient appliances. Look for the WaterSense label.

To avoid evaporation, water your lawn in the early morning or later in the evening.

If you have a swimming pool, cover it and cut water loss through evaporation by 90 percent.

Clean your sidewalk or driveway with a broom instead of a hose and save up to 80 gallons of water.

Apply mulch around flowers, shrubs, vegetables and trees to reduce evaporation, promote plant growth and control weeds.

For more tips, go to **www.rwater.com** or visit **www.epa.gov/WaterSense**.

About the Authority

The Regional Water Authority, a five-person board, functions as a board of directors. It oversees the adoption of annual operating and capital budgets and provides strategic direction. The duties of the 21-member Representative Policy Board are to appoint the five members to serve on the Authority and to approve land sales, rate increases, bond sales and any capital project with a cost in excess of $2 million.

The Authority normally meets on the third Thursday of each month at 12:30 p.m., and the Representative Policy Board normally meets on the third Thursday at 6:30 p.m. at our headquarters at 90 Sargent Drive in New Haven.

Please call to confirm meeting time.

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Regional Water Authority

Regulated Contaminants Found in Lakes and Aquifers

Substance	MCL	MCLG	Highest Level Detected	Potential Sources of Contaminant	Met Regulatory Standards
Total Coliform Bacteria	Presence of coliform bacteria not to exceed 5.00% of monthly samples	0%	**0.48%** *(March)*	Naturally present in the environment	**YES**
Turbidity (lakes)	TT = 95% of samples ≤ 0.3 NTU[e]	N/A	**0.21 NTU**	Soil runoff	**YES**

Substance	MRDL	MRDLG	Average Level and Range Detected	Potential Sources of Contaminant	Met Regulatory Standards
Chlorine	4 ppm	4 ppm	**1.7 ppm** *Range 0.8–2.6*	Water additive used to control microbes	**YES**

Substance	MCL	MCLG	Average Level and Range Detected	Potential Sources of Contaminant	Met Regulatory Standards
Barium	2 ppm	2 ppm	**0.072 ppm** *Range 0.000–0.284*	Discharge of drilling waste; discharge from metal refineries; erosion of natural deposits	**YES**
Chloride	250 ppm	N/A	**30 ppm** *Range 10–61*	Naturally present in the environment	**YES**
Combined Radium	5 pCi/L	0	**BDL pCi/L** *ND–1.5 Quinnipiac River & Mill River Aquifers analyzed in 2013; Housatonic River Aquifer analyzed in 2006*[g]	Erosion of natural deposits	**YES**
Fluoride	4 ppm	4 ppm	**0.95 ppm** *Range 0.21–1.51*	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories	**YES**
Gross Alpha	15 pCi/L	0	**ND pCi/L** *Analyzed in 2013*[d]	Erosion of natural deposits	**YES**
Microbial Pathogens[h]	TT=100 percent of 4 log removal based on chlorine residual	N/A	**100%**	Naturally present in the environment	**YES**
Nitrate (as nitrogen)	10 ppm	10 ppm	**0.863 ppm** *Range 0.008–2.920*	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits	**YES**

Regulated Contaminants Found in Lakes and Aquifers (CONTINUED)

Substance	MCL	MCLG	Average Level and Range Detected	Potential Sources of Contaminant	Met Regulatory Standards
Total Haloacetic Acids (THAA)	60 ppb Average	N/A	**30 ppb** *Range 15–40*[a]	By–product of drinking water chlorination	**YES**
Total Organic Carbon (TOC)	TT=Removal Ratio ≥ 1[f]	N/A	**1.42** *Range 1.00–2.66*	Naturally present in the environment	**YES**
Total Trihalomethanes (TTHM)	80 ppb Average	N/A	**38 ppb** *Range 22–77*[a]	By–product of drinking water chlorination	**YES**
Turbidity (aquifers)	TT=5 NTU	N/A	**0.07 NTU** *Range ND–1.30*	Soil runoff	**YES**

Substance	MCL	MCLG	90th Percentile[b]	Potential Sources of Contaminant	Met Regulatory Standards
Lead	AL = 15 ppb[c]	0	**2 ppb** *Analyzed 2014*[d] *No. of sites above AL = 0*	Corrosion of household plumbing systems; erosion of natural deposits	**YES**
Copper	AL = 1.3 ppm[c]	1.3	**0.44 ppm** *Analyzed 2014*[d] *No. of sites above AL = 0*	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	**YES**

Unregulated Contaminants Found in Lakes and Aquifers

Substance	MCL	Average Level and Range Detected	Potential Sources of Contaminant	Met Regulatory Standards
Bromodichloromethane	N/A	**5 ppb** *Range 3–17*	By–product of drinking water chlorination	N/A
Chloroform	N/A	**31 ppb** *Range 18–56*	By–product of drinking water chlorination	N/A
Dibromochloromethane	N/A	**1 ppb** *Range ND–4*	By–product of drinking water chlorination	N/A
Dibromoacetic Acid	N/A	**BDL ppb** *Range ND–1*	By–product of drinking water chlorination	N/A
Dichloroacetic Acid	N/A	**11 ppb** *Range 5–16*	By–product of drinking water chlorination	N/A
Monochloroacetic Acid	N/A	**1 ppb** *Range ND–42*	By–product of drinking water chlorination	N/A
Trichloroacetic Acid	N/A	**17 ppb** *Range 9–22*	By–product of drinking water chlorination	N/A

Unregulated Contaminants Found in Lakes and Aquifers (CONTINUED)

Substance	Notification Level	Average Level and Range Detected	Potential Sources of Contaminant	Met Regulatory Standards
Radon	N/A	**590 pCi/l** *Range ND–1,880*	Naturally present in the environment	N/A
Sodium	28 ppm	**19 ppm** *Range 8–28* (g)	Naturally present in the environment; sources such as road salt storage and application, industrial wastes, sewage, and fertilizers are usually the cause of elevated levels in drinking water supplies	N/A

NOTES

(a) *Individual sample and individual location*

(b) *Calculated value derived from the analysis performed on high-priority customers*

(c) *Action level is based on the calculated 90th percentile*

(d) *Test frequency as determined by state and federal regulatory agencies*

(e) *95% of samples within a given month*

(f) *Ratio is a value derived from monthly TOC percent removal calculation*

(g) *Test frequency and location are determined by state and federal regulatory agencies*

(h) *Treatment that reliably achieves at least 99.99 percent (4-log) treatment of viruses using inactivation*

Unregulated Contaminants for the Unregulated Contaminant Monitoring Rule (UCMR) List 3

Unregulated contaminants are those that don't yet have a drinking water standard set by the U.S. Environmental Protection Agency (EPA). Under the 1996 amendments to the federal Safe Drinking Water Act, the EPA is required to issue a new list of up to 30 unregulated contaminants every five years for which public water systems must monitor. The purpose of monitoring these contaminants is to help the EPA decide whether the contaminants should have a standard. The RWA tested for these contaminants in 2014.

During 2014, the Regional Water Authority participated in the third phase of the Unregulated Contaminant Monitoring Rule (UCMR3). Unregulated contaminants are those for which the EPA has not established drinking water standards. Monitoring assists the EPA in determining the occurrence of these compounds and whether or not regulation is warranted. Detections are summarized in the following table, along with typical sources. For general information on UCMR3, visit http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3 or contact EPA's Safe Drinking Water Hotline at 800-426-4791.

Parameter	MCL	Average Level and Range Detected	Potential Sources of Contaminant
1,4 Dioxane	N/A	**1.57** *Range ND - 11 Analyzed 2014*	Used as a solvent or solvent stabilizer in manufacture and processing of paper, cotton, textile products, automotive coolant, cosmetics, and shampoos.
Chlorate	N/A	**252 ppb** *Range ND–1,990 Analyzed 2014*	Byproduct of the drinking water disinfection process; A number of compounds can react to release chlorate ion in water, including some in herbicides, fireworks and other explosives.
Chromium	N/A	**0.38 ppb** *Range ND–1.10 Analyzed 2014*	Naturally-occurring element; Can come from industrial activities that use chromate-containing pigments, spray paints, coatings, chrome plating baths, and metal (such as stainless steel) cutting or welding.

Unregulated Contaminants for the Unregulated Contaminant Monitoring Rule (UCMR) List 3 (CONTINUED)

Parameter	MCL	Average Level and Range Detected	Potential Sources of Contaminant
Hexavalent Chromium	N/A	**0.25 ppb** *Range ND–0.78 Analyzed 2014*	Naturally-occurring element, used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation.
Strontium	N/A	**70.1 ppb** *Range 20.5–123.0 Analyzed 2014*	Naturally-occurring element; other sources include air contamination from milling processes, coal burning, and phosphate fertilizers.
Vanadium	N/A	**0.67 ppb** *Range ND–1.58 Analyzed 2014*	Naturally-occurring metal found in many different minerals and in fossil fuel deposits. The primary industrial use of vanadium is in the strengthening of steel.

Technology, Definitions, and Water Quality Measurement Units Listed in This Report

AL | Action Level	*The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.*
BDL | Below Detection Level	*Calculated value resulting in below detection level.*
MCL | Maximum Contaminant Level	*The highest level of a contaminant allowed in drinking water. Maximum Contaminant Levels are set as close to the Maximum Contaminant Level Goal 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 not known or expected risk to health. Maximum Contaminant Level Goals allow for a margin of safety.*
MRDL | Maximum Residual Disinfectant Level	*The level of disinfectant added for water treatment that may not be exceeded at consumer's tap without adverse health effects.*
MRDLG | Maximum Residual Disinfectant Level Goal	*A non-enforceable health goal. It does not reflect the benefits of adding the chemical for the control of waterborne microbial contaminants.*
ug/L | Micrograms per Liter	*A unit of concentration for dissolved substances based on their weights.*
N/A | Not Applicable	*Not applicable or required.*
ND | Not Detected	*Not detected.*
NTU | Nephelometric Turbidity Units	*A measure of clarity of water. Turbidity more than five NTU is just noticeable to the average person.*
ppb | Parts per Billion	*A measure of the concentration of a substance roughly equivalent to one inch in 15,750 miles or one minute in 2,000 years.*
ppm | Parts per Million	*A measure of the concentration of a substance roughly equivalent to one inch in 16 miles or one second in 11.5 days.*
pCi/L | PicoCuries per Liter	*A measure of radioactivity in water.*
TT | Treatment Technique	*A required process intended to reduce the level of contaminant in drinking water.*