

### Important Terminology, Definitions and Water Quality Measurement Units Listed in This Report

<b>AL</b> = Action Level	The concentration of a contaminant, which if exceeded, triggers treatment or other requirements that a water system must follow.
<b>TT</b> = Treatment Techniques	A required process intended to reduce the level of contaminant in drinking water.
<b>MCL</b> = 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 Goals as feasible using the best available treatment technology.
<b>MCLG</b> = Maximum Contaminant Level Goal	The level of a contaminant in drinking water below which there is no known or expected risk to health. Maximum Contaminant Level Goals allow for a margin of safety.
<b>MRDL</b> = Maximum Residual Disinfectant Level	The level a disinfectant added for water treatment that may not be exceeded at consumer's tap without adverse health effects.
<b>MRDLG</b> = Maximum Residual Disinfectant Level Goal	The level a disinfectant added for water treatment that may not be exceeded at consumer's tap without adverse health effects.
<b>MRR</b> = Minimum Removal Ratio	The calculated value derived for TOC percent removal.
<b>NTU</b> = Nephelometric Turbidity Units	A measure of clarity of water. Turbidity more than five NTU is just noticeable to the average person.
<b>ND</b> = Not Detected	Not Detected
<b>N/A</b> = No MCL or MCLG	No MCL or MCLG established
<b>pCi/l</b> = Pico Curies per liter	A measure of radioactivity in water.
<b>ppm</b> = Parts per million	A measure of the concentration of a substance equivalent to one (1) penny in \$10,000 dollars.
<b>ppb</b> = Parts per billion	Parts per billion. A measure of the concentration of a substance equivalent to one (1) penny in \$10,000,000 dollars.

### Potential Sources of Regulated Contaminants Listed in This Report

Substance	Potential Sources
Total Coliform Bacteria	Naturally present in the environment
Lead	Corrosion of household plumbing systems; Erosion of natural deposits
Chlorine	Water additive used for disinfection
Chloride	Naturally occurring in the environment
Copper	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Barium	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride	Erosion of natural deposits; Water additive which promotes strong dental enamel
Gross Beta Emitters	Decay of natural and man-made deposits
Gross Alpha Emitters	Erosion of natural deposits
Nitrate (as Nitrogen)	Runoff from fertilizer use; Leaching from septic tanks; sewage; Erosion of natural deposits
Radium 226, 228	Naturally present in the environment
Total Organic Carbon (TOC)	Naturally present in the environment
Total Trihalomethanes (TTHM)	By-product of drinking water disinfection
Trichloroethylene	Discharge from metal degreasing sites and other factories
Turbidity	Soil runoff
Haloacetic Acids (HAA)	By-product of drinking water disinfection

### Potential Sources of Unregulated Contaminants Listed in This Report

Sodium	Naturally occurring in the environment or run off from road salting
Sulfate	Naturally occurring in the environment
Dibromochloromethane	By-product of drinking water disinfection
Monochloroacetic Acid	By-product of drinking water disinfection
Radon	Naturally present in environment
Dichloroacetic Acid	By-product of drinking water disinfection
Bromodichloromethane	By-product of drinking water disinfection
Trichloroacetic Acid	By-product of drinking water disinfection
Chloroform	By-product of drinking water disinfection
Dibromoacetic Acid	By-product of drinking water disinfection

## How safe is my water?

To ensure that your tap water is of the highest quality, the U.S. Environmental Protection Agency (EPA) and the Connecticut Department of Public Health have established regulations that limit the amount of certain contaminants in drinking water provided by public-water systems. A review of 2008 water quality data shows that your drinking water is within the standards set by both regulatory agencies. In 2008, we tested your water for at least 50 different regulated contaminants. The contaminants that were detected are identified in this report. Those that were detected were present in amounts that are allowed by state and federal regulations established under the Federal Safe Drinking Water Act.

The Middletown Water Department is not required to test for all regulated contaminants every year. Prior monitoring data and state and federal regulations establish time tables for which contaminants need to be tested and when. We are also required by Federal Law to analyze for unregulated contaminants to determine whether they are present. This report shows that we tested for unregulated contaminants, and ten contaminants were detected. Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

This report gives a summary of the Middletown Water Department's water quality. Our goal is to help you understand what's coming out of your drinking water tap.

## Do I need to take special precautions?

All drinking water, including bottled water, can reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the 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 at (800) 426-4791.

People with severely weakened immune systems must be concerned about the water they drink because ingesting even slight amounts of waterborne parasites, bacteria, or viruses can cause serious health problems. Among those who should closely monitor water quality are persons with HIV/AIDS, chemotherapy patients, those who have undergone organ transplants, or anyone else with immune system problems. Consult your own physician if you have concerns. The EPA and Center for Disease Control provides guidelines on the appropriate means to lessen the risk of infection by microbial contaminants. Information is also available from the Safe Drinking Water Hotline at (800) 426-4791. Copper and lead contaminants may also pose a health risk. The risk comes from the corrosion of household plumbing systems and 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 doctors. 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 does the Middletown Water Department do to assure your drinking water complies with federal and state standards?

*The drinking water that reaches your tap goes through a multi-step multi-barrier treatment process.*

**RESERVOIRS & AQUIFERS:** Our source water protection program focuses on pollution prevention and watershed management. We protect over 1,400 acres of land in our water supply area and manage it carefully. We vigilantly monitor the quality of the water and all activity on the surrounding land, constantly watching for potential activities that could contaminate the reservoirs and aquifers that are used as the sources of your tap water. In addition, the City has created zoning requirements that establish an aquifer protection area for the well field. This zone restricts the activities that are allowed within this area.

**TREATMENT:** Aquifer water is naturally filtered underground and then filtered once more in our John S. Roth water treatment plant. Reservoir water is treated at our Charles B. Bacon water treatment plant. The treatment process is comprised of coagulation, flocculation, sedimentation, and filtration to remove impurities. Both reservoir and aquifer water are disinfected with chlorine to kill microbes that can cause illness. We also add fluoride to prevent dental decay and phosphate to minimize corrosion of pipes.

**DISTRIBUTION:** The treated or finished water is delivered to you through a 200-mile-long network of pipes, pumping stations, and storage tanks. We carefully maintain our extensive distribution system to insure that high quality water is available when you turn on your tap.



## How can contaminants get into my drinking water?

As water travels over the surface of land or through the ground, it can pick up substances such as natural occurring minerals and other materials that may come from animals and human activity. Both untreated and treated water may include the following kinds of contamination:

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

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

**MICROBIAL CONTAMINANTS** such as bacteria and viruses may come from the sewage-treatment plants, septic systems, agricultural livestock operations, wildlife or other natural sources.

**ORGANIC CHEMICAL COMPOUNDS**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, can come from gas stations, urban storm water runoff, or septic system. Trihalomethanes and haloacetic acids are disinfection by-products that result from the use of chlorine as a disinfectant in water treatment.

**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. It can build up 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 four picoCuries per liter of air (pCi/l) or higher, you need to take steps to reduce it. For additional information, contact the Middletown Health Department (344-3482), call your State radon program or contact EPA's Radon Hotline (800.SOS.RADON).

## Charles B. Bacon Water Treatment Plant (Higby Reservoirs)

*(Please see page 2 for Terminology and Abbreviations Used in These Charts)*

### Reservoir Region-wide Levels of Regulated Contaminants

Parameter	MCL	MCLG	Highest Level Detected During 2008
Turbidity	TT=0.3 NTU	0 NTU	<b>0.27 NTU</b> (Range .04 - .27) .06 Average
Turbidity	TT= Percent of samples <0.3 NTU	N/A	<b>100%</b>

Parameter	MCL	MCLG	Minimum Removal Ratio During 2008
Total Organic Carbon (TOC)	TT = 1 ratio min.	N/A	<b>1.2</b> February, 2008

Parameter	MRDL	MRDLG	Average Level and Range Detected During 2008
Chlorine	4 ppm	4 ppm	<b>1.52 ppm</b> (Range 0.83 - 2.40)

Parameter	MCL	MCLG	Highest Level and Range Detected During 2008
Fluoride	4 ppm	4 ppm	<b>1.58 ppm</b> (Range 0.81 - 1.58), .98 Average

Parameter	MCL	MCLG	Level Detected During 2008
Barium	2 ppm	2 ppm	<b>0.008 ppm</b>
Chloride	250 ppm	N/A	<b>24.6 ppm</b>
Nitrate (as Nitrogen)	10 ppm	10 ppm	<b>0.007 ppm</b>

Parameter	MCL	Units	Average Level and Range Detected During 2008
Total Trihalomethanes (TTHM)	100 ppb Average	ppb	<b>25.4 ppb Average</b> (Range 13.7* – 39.3*)
Total Haloacetic Acids (THAA)	60 ppb Average	ppb	<b>21.6 ppb Average</b> (Range 16.0* – 29.8*)

\* Individual sample and individual location.

### Reservoir Region Source-Specific Levels of Unregulated Contaminants

Parameter	MCL	Units	Level Detected During 2007
Sodium	Notification Level 28	ppm	<b>11.1 ppm</b>
Sulfate	N/A	ppm	<b>7.6 ppm</b>

## Reservoir Region Source-Specific Levels of Unregulated Contaminants (continued)

Parameter	MCL	UNITS	Highest Level and Range Detected During 2007
Bromodichloromethane	N/A	ppb	<b>6.7 ppb</b> (Range 3.0 - 6.7)
Chloroform	N/A	ppb	<b>31.9 ppb</b> (Range 10.7 - 31.9)
Dibromochloromethane	N/A	ppb	<b>6.7 ppb</b> (Range 0.6 - 6.7)
Monochloroacetic Acid	N/A	ppb	<b>1.3 ppb</b> (Range 0.5 - 1.3)
Dichloroacetic Acid	N/A	ppb	<b>15.4 ppb</b> (Range 8.3 - 15.4)
Trichloroacetic Acid	N/A	ppb	<b>13.1 ppb</b> (Range 7.2 - 13.1)

## John S. Roth Well field and Treatment Plant (River Road Well field)

(Please see page 2 for Terminology and Abbreviations Used in These Charts)

### Aquifer Service Region-Specific Levels of Regulated Contaminants

Parameter	MCL	MCLG	Highest Level and Range Detected During 2008
Turbidity	TT= 5 NTU	0	<b>0.24 NTU</b> (Range 0.04 – 0.24), 0.07 Average
Fluoride	4 ppm	4 ppm	<b>1.27 ppm</b> (Range 0.58 - 1.27), 0.96 Average

Parameter	MRDL	MRDLG	Average Level and Range Detected During 2008
Chlorine	4 ppm	4 ppm	<b>1.2 ppm</b> (Range 0.70 to 1.73)

Parameter	MCL	MCLG	Level Detected During 2008
Barium	2 ppm	2 ppm	<b>0.018 ppm</b>
Copper	AL=1.3 ppm	1.3 ppm	<b>0.01 ppm</b>
Chloride	250 ppm	N/A	<b>18.1 ppm</b>
Nitrate (as Nitrogen)	10 ppm	10 ppm	<b>0.467 ppm</b>

Parameter	MCL	Units	Average Level and Range Detected During 2008
Total Trihalomethanes (TTHM)	100 ppb Average	ppb	<b>12.8 ppb Average</b> (Range 6.6* - 23.8*)
Total Haloacetic Acids (THAA)	60 ppb Average	ppb	<b>9.6 ppb Average</b> (Range 5.6* - 14.2*)

### Aquifer Region Source-Specific Levels of Unregulated Contaminants

Parameter	MCL	Units	Level Detected During 2008
Sodium	Notification Level 28 ppm	ppm	<b>13.3 ppm</b>
Sulfate	N/A	ppm	<b>8.5 ppm</b>

Parameter	MCL	UNITS	Highest Level and Range Detected During 2008
Bromodichloromethane	N/A	ppb	<b>4.9 ppb</b> (Range 2.1 - 4.9)
Chloroform	N/A	ppb	<b>18.4 ppb</b> (Range 5.9 - 18.4)
Dibromochloromethane	N/A	ppb	<b>0.6 ppb</b> (Range ND - 0.6)
Dichloroacetic Acid	N/A	ppb	<b>8.7 ppb</b> (Range 3.8 - 8.7)
Trichloroacetic Acid	N/A	ppb	<b>5.5 ppb</b> (Range 1.8 - 5.5)

\* Individual sample and individual location.

### System-wide Levels of Regulated Contaminants for Reservoir and Aquifer Service Areas

Parameter	MCL	MCLG	Average Level and Range Detected During 2008
Total Trihalomethanes (TTHM)	80 ppb Average	N/A	<b>34.0 ppb</b> ( Range 27.0 – 46.0)
Total Haloacetic Acids (THAA)	60 ppb Average	N/A	<b>21.0 ppb</b> ( Range 15.0 – 30.0)

Parameter	MCL	MCLG	Highest Level and Range Detected During 2008
Total Coliform Bacteria	Presence of coliform bacteria not to exceed 5.00% of monthly samples	0%	<b>0%</b> (Range 0% - 0%)
Turbidity	TT= 5.0 NTU	0 NTU	<b>0.43 NTU High, 0.10 Average,</b> (Range 0.5* - 0.43*)

\* Individual sample and individual location.

Parameter	MCL	MCLG	MCLG 90th Percentile 2006
Lead	AL=15 ppb	0 ppb	<b>18.0 ppb</b> Sites above AL = 1 Analyzed <b>2006</b>
Copper	AL=1.3 ppm	1.3 ppm	<b>0.20 ppm</b> Sites above AL = 0 Analyzed <b>2006</b>

## System-wide Levels of Initial Distribution System Evaluation (IDSE) Contaminants for Reservoir and Aquifer Service Areas

In 2008 the MWD began the initial distribution system evaluation for stage II of the disinfection byproduct rule. Presented is the available data for 2008. Eight additional sample sites are being monitored for total trihalomethanes and total haloacetic acids. The new rule requires averaging the site, not the system.

Parameter	MCL	Units	Average Level and Range Detected During 2008
Total Trihalomethanes (TTHM)	80 ppb Average of site	ppb	<b>49.0 ppb Average</b> (Range 9.0* - 92.9*)
Total Haloacetic Acids (THAA)	60 ppb Average of site	ppb	<b>21.0 ppb Average</b> (Range 1.0* - 45.1*)

### Information on Cryptosporidium:

Cryptosporidium is a microscopic organism commonly found in the environment. Cryptosporidium can contaminate surface waters, including drinking water sources, via runoff from within the watershed. Ingestion of a small amount of Cryptosporidium from contaminated water can cause Cryptosporidiosis, a gastrointestinal illness that typically lasts 10 to 14 days.

The Middletown Water Department is currently in the midst of a two (2) year monitoring program for Cryptosporidium as required by the EPA's Long Term Enhanced Surface Water Treatment Rule (LT2). Samples of untreated source water from our Higby Reservoir are being collected monthly. To date, Cryptosporidium has not been detected in any of the samples that have been collected and analyzed under this program. If this trend continues throughout the program the MWD will be able to comply with the LT2 treatment requirements without the need to install any additional treatment processes.

### Water Conservation Tips (Information Provided by the EPA)

Water is a limited resource so it is vital that we all work together to maintain it and use it wisely. Here are a few tips you can follow to help conserve water:

- Check for leaky toilets (put a drop of food coloring in the tank, let it sit, if the water in the bowl turns color, you have a leak). A leaking faucet or toilet can dribble away thousands of gallons of water in a year.
- Consider replacing your 5-gallon per flush toilet with an efficient 1.6 gallon per flush unit. This will permanently cut your water consumption by 25%.
- Run only full loads in dishwashers and washing machines. Rinse all hand-washed dishes at once.
- Turn off the faucet while brushing teeth, or shaving.
- Store a jug of ice water in the refrigerator for a cold drink.
- Water lawn and plants in the early morning or evening hours to avoid excess evaporation. Don't water on a windy, rainy or very hot day.
- Water shrubs and gardens using a slow trickle around the roots. A slow soaking encourages deep root growth, reduces leaf burn or mildew and prevents water loss. Select low-water demanding plants that provide an attractive landscape without high water use.
- Apply mulch around flowers, shrubs and trees to reduce evaporation, promote plant growth and control weeds. Shrubs and ground covers require less maintenance, less water and provide year round greenery.
- Be sure that your hose has a shut-off nozzle. Hoses without a nozzle can spout 10 gallons more per minute.
- When washing your car, wet it quickly, turn off the spray, wash it with soapy water from the bucket, rinse quickly.
- Be sure sprinklers water only your lawn, not the pavement.
- Never use the hose to clean debris off your driveway or sidewalk. Use a broom.
- Rinse other items, such as bicycles or trash cans, on the lawn to give your grass and extra drink.

The Water Department continues to make Water Conservation Kits available to our customers. Each kit contains leak detector tablets, a toilet bladder for reducing usage from older toilets, faucet flow restrictors, and a low flow showerhead. There is no cost for the kit. They may be picked up at our offices at 82 Berlin Street, Mon-Fri 8:30am-4:30pm, limit two kits per residence.

## Middletown Water Department Consumer Confidence Report 2008

This report provides you with a summary of Middletown Water Department's public drinking water quality through calendar year 2008. This report was produced to give you a better understanding of where your water comes from, and how the water is protected, treated, and tested. As required by federal and state regulations, you will see detailed information describing what is in our water. Our goal is to help you understand more about the water and system that is delivering drinking water to your tap.

If you wish to participate in decisions that may affect the quality of your drinking water, the Common Council meets in the Council Chambers of the Municipal Building on the first Monday of the month at 7:00pm. Contact the Common Council Clerk at 860-344-3442 for dates and times. If you have further questions about your water service, or this report, please call Customer Service at 860-343-8085. Visit us online at <http://www.cityofmiddletown.com/Water-Sewer/main.htm> we welcome your interest in our city's public water system.

Sincerely,



Sebastian N. Giuliano  
Mayor, City of Middletown



John A. Giuliano  
Chairman, WPCA



Guy P. Russo  
Director, Water Dept.

**Middletown Water Department  
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