

Annual
WATER
QUALITY
REPORT

Reporting Year 2012



Presented By _____
Town of Westerly

PWS ID#: RI 1559512

There When You Need Us

We are once again proud to present our annual water quality report, covering all testing performed between January 1 and December 31, 2012. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available to assist you should you ever have any questions or concerns about your water.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. The Town Council meets the first and third Monday of each month, beginning at 7 p.m., at Town Hall, 45 Broad St., Westerly, RI.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, which may come from a variety of sources, such as agriculture, urban stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Lead in Home Plumbing

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. We are 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 www.epa.gov/safewater/lead.

Where Does My Water Come From?

The Westerly Water Department obtains its water from eleven gravel-packed wells located at six well fields within the Pawcatuck River Aquifer region. The well fields are located on White Rock Road, Old Carriage Road, and Pound Road in the Town of Westerly. The total system production capability is 6.93 million gallons per day.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Paul Corina, Utilities Superintendent, (401) 348-2561.

Water Conservation

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

About Our Violation

We routinely monitor for total coliform bacteria in the distribution system by collecting fifty two (52) samples per month. In the month of May 2012 three (3) samples showed the presence of coliform bacteria, representing 5.8% of the samples collected. The standard is no more than 5% of the samples per month may do so. All well system and repeat/follow-up samples were bacteria free. In response, the water department flushed the distribution system and increased the MIOX disinfectant dosage slightly per the Department of Health's recommendation.

On May 25, 2012, we failed to collect valid repeat samples for each of two (2) Total Coliform results. In addition, we did not collect one (1) of two (2) required sets of well samples to confirm the presence or absence of E. coli in the well. The repeat samples were invalid due to incorrect bottles. All required well and distribution samples taken after May 25, 2012, were negative for any type of bacteria. There was incorrect interpretation of language in the rules for testing. Sampling procedures have been corrected to meet all Health Department criteria.

Water Treatment Process

Westerly's groundwater source is very good right out of the ground. The only treatment required prior to distribution is pH adjustment and polyphosphate addition for corrosion control, along with mixed oxidants (MIOX) including chlorine for disinfection to protect against bacterial contaminants.



What is the typical per-day water usage?

While usage varies from community to community and person to person, on average, Americans use 183 gallons of water a day for cooking, washing, flushing, and watering purposes. The average family turns on the tap between 70 and 100 times daily. About 74% of home water usage occurs in the bathroom, about 21% in the laundry room, and about 5% in the kitchen.

Why do water pipes tend to break in winter?

Liquids generally contract when frozen and become more dense; however, the unique qualities of water cause it to expand by up to 9% when it freezes. That is why water pipes burst when temperatures reach the freezing mark.

How much water is used to create the food we eat each year?

The average American consumes 1,500 pounds of food each year; 1,000 gallons of water are required to grow and process each pound of that food. Thus, 1.5 million gallons of water is invested in the food eaten annually by just one person! This 200,000-plus cubic feet of water per person is enough to cover a football field four feet deep.

Is it okay to use hot water from the tap for cooking and drinking?

No, ALWAYS use cold water. Hot water is more likely to contain rust, copper, and lead from household plumbing and water heaters. These harmful substances can dissolve into hot water faster than they do into cold water, especially when the faucet has not been used for an extended period of time.

What type of container is best for storing water?

Consumer Reports has consistently advised that glass or BPA-free plastics such as polyethylene are the safest choices. To be on the safe side, do not use any container with markings on the recycle symbol showing 7 PC (which is the code for BPA). You could also consider using stainless steel or aluminum containers that have BPA-free liners.

How much water is used in the shower?

A 10-minute shower can take 25 to 50 gallons of water. High-flow shower heads allow a flow of 6 to 10 gallons a minute. Low-flow shower heads can cut the rate in half without reducing pressure.



You may not be aware of it, but every time you pour fat, oil, or grease (FOG) down your sink (e.g., bacon grease), you are contributing to a costly problem in the sewer collection system. FOG coats the inner walls of the plumbing in your house as well as the walls of underground piping throughout the community. Over time, these greasy materials build up and form blockages in pipes, which can lead to wastewater backing up into parks, yards, streets, and storm drains. These backups allow FOG to contaminate local waters, including drinking water. Exposure to untreated wastewater is a public health hazard. FOG discharged into septic systems and drain fields can also cause malfunctions, resulting in more frequent tank pump-outs and other expenses.

Communities spend billions of dollars every year to unplug or replace grease-blocked pipes, repair pump stations, and clean up costly and illegal wastewater spills. Here are some tips that you and your family can follow to help maintain a well-run system now and in the future:

NEVER:

- Pour fats, oil, or grease down the house or storm drains.
- Dispose of food scraps by flushing them.
- Use the toilet as a waste basket.

ALWAYS:

- Scrape and collect fat, oil, and grease into a waste container such as an empty coffee can, and dispose of it with your garbage.
- Place food scraps in waste containers or garbage bags for disposal with solid wastes.
- Place a wastebasket in each bathroom for solid wastes like disposable diapers, creams and lotions, and personal hygiene products including nonbiodegradable wipes.

Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

| REGULATED SUBSTANCES | | | | | | | |
|--|-----------------|------------------------------------|-----------------|--------------------|-------------------|-----------|---|
| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | MCL [MRDL] | MCLG [MRDLG] | AMOUNT DETECTED | RANGE LOW-HIGH | VIOLATION | TYPICAL SOURCE |
| Alpha Emitters (pCi/L) | 2008 | 15 | 0 | 4.7 | ND–4.7 | No | Erosion of natural deposits |
| Barium (ppm) | 2011 | 2 | 2 | 0.033 | 0.011–0.06 | No | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits |
| Benzo(a)pyrene [PAH] (ppt) | 2008 | 200 | 0 | 5.8 | ND–64 | No | Leaching from linings of water storage tanks and distribution lines |
| Beta/Photon Emitters ¹ (pCi/L) | 2008 | 50 | 0 | 12.4 | ND–12.4 | No | Decay of natural and man-made deposits |
| Chlorine (ppm) | 2012 | [4] | [4] | 0.64 | 0.04–1.36 | No | Water additive used to control microbes |
| Combined Radium (pCi/L) | 2008 | 5 | 0 | 1.7 | ND–1.7 | No | Erosion of natural deposits |
| Fluoride (ppm) | 2011 | 4 | 4 | 0.02 | ND–0.18 | No | Erosion of natural deposits |
| Haloacetic Acids [HAA]–Stage 1 (ppb) | 2012 | 60 | NA | 8.25 | 7.3–9.2 | No | By-product of drinking water disinfection |
| Nitrate (ppm) | 2011 | 10 | 10 | 1.1 | 0.15–2.4 | No | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| TTHMs [Total Trihalomethanes]–Stage 1 (ppb) | 2012 | 80 | NA | 30.25 | 26.6–33.9 | No | By-product of drinking water disinfection |
| Total Coliform Bacteria (% positive samples) | 2012 | 5% of monthly samples are positive | 0 | 5.8 | NA | Yes | Naturally present in the environment |

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | AL | MCLG | AMOUNT DETECTED (90TH%TILE) | SITES ABOVE AL/ TOTAL SITES | VIOLATION | TYPICAL SOURCE |
|--------------------------------|-----------------|-----|------|-----------------------------------|-----------------------------------|-----------|--|
| Copper ² (ppm) | 2012 | 1.3 | 1.3 | 0.136 | 0/61 | No | Corrosion of household plumbing systems; Erosion of natural deposits |
| Lead ³ (ppb) | 2012 | 15 | 0 | 5 | 3/61 | No | Corrosion of household plumbing systems; Erosion of natural deposits |

SECONDARY SUBSTANCES

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | SMCL | MCLG | AMOUNT DETECTED | RANGE LOW-HIGH | VIOLATION | TYPICAL SOURCE |
|--------------------------------|-----------------|------|------|--------------------|-------------------|-----------|--|
| Sulfate (ppm) | 2011 | 250 | NA | 8.75 | 6.2–11 | No | Runoff/leaching from natural deposits; Industrial wastes |

Definitions

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

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology. Secondary MCLs (SMCLs) are set to regulate the aesthetics (taste and odor) of water.

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 contaminants.

NA: Not applicable.

ND (Not Detected): Indicates that the substance was not found by laboratory analysis.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

UNREGULATED SUBSTANCES

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | AMOUNT DETECTED | RANGE LOW-HIGH | TYPICAL SOURCE |
|--------------------------------|-----------------|--------------------|-------------------|---|
| Sodium (ppm) | 2012 | 19.29 | 5.65–37 | Road salt and corrosion of natural deposits |

¹The MCL for beta particles is 4 mrem/year. The U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

²A second set of 60 samples was collected in 2012 with a 90th percentile of 0.057 ppm and 0 sites above the AL for copper.

³A second set of 60 samples was collected in 2012 with a 90th percentile of 10 ppb and 2 sites above the AL for lead.