

# Water Quality

## Frequently Asked Questions



### Q: What is the source of my drinking water?

**ANSWER:** The water systems owned by the Prince William County Service Authority are described below.

The East System serves the areas of Woodbridge, Occoquan, Dumfries, Triangle and portions of the Hoadly Road area. The water for the East System is drawn from the Occoquan Reservoir and undergoes treatment at Fairfax Water's Frederick P. Griffith Water Treatment Plant.

The West System serves the Greater Manassas and Manassas South areas of Prince William County. Water for the West System is drawn from both the Potomac River and Lake Manassas. The water from the Potomac River is treated at Fairfax Water's James J. Corbalis, Jr. Water Treatment Plant in northern Fairfax County. Water from Lake Manassas is treated at the City of Manassas' water treatment plant.

The Hoadly Manor Water System is a small water system that serves the aforementioned subdivision along Hoadly Road and Websters Way in Woodbridge. The water for the Hoadly Manor System is drawn from the Occoquan Reservoir and purchased from Virginia American Water.

Customers in the Bull Run Mountain/Evergreen service area receive water from eight wells. Water from the wells is treated for corrosion control using sodium hydroxide to promote pipe longevity in the distribution system and household plumbing.

### Q: How "hard" is the Service Authority's water?

**ANSWER:**

- ◆ East and West Systems water is "moderately hard."  
(3.5 - 7.0 grains per gallon or 60 - 120 mg/L)
- ◆ Bull Run Mountain/Evergreen water is "hard."  
(7.0 - 10.5 grains per gallon or 120 - 180 mg/L)

For more information about water hardness, visit: <http://www.pwcsa.org/water-hardness-information>.

## Q: Is it safe to drink water containing fluoride?

**ANSWER:** The Service Authority purchases drinking water from Fairfax Water and the City of Manassas and distributes the water to its customers. Both water purveyors add fluoride to drinking water at or near 0.7 parts per million (ppm) in accordance with recommendations from federal and state public health agencies, including the Center for Disease Control (CDC).\*

To view Fairfax Water's fluoride data in their Water Quality Analytical Reports, visit <http://www.fcwa.org/water/water.htm>.

To view fluoride information in the City of Manassas' Water Quality Report, visit <http://www.manassascity.org/DocumentCenter/View/27831>.

Information about fluoride from the CDC may be viewed at <http://www.cdc.gov/fluoridation/>.

\*Sources:

- ◆ <http://www.fairfaxwater.org/water/fluoride.htm>
- ◆ <http://www.manassascity.org/documentcenter/view/30550>

## Q: Is it safe to drink water from a garden hose?

**ANSWER:** Substances used in vinyl garden hoses to keep them flexible can get into the water as it passes through the hose. These substances are not good for you or your pets. There are hoses made with "food grade" plastic that will not contaminate the water. Check your local hardware store for this type of hose.

## Q: How is bacteria that cause disease kept out of drinking water?

**ANSWER:** Chemicals called disinfectants are added to drinking water at the treatment plants. Chloramines, the combination of ammonia and chlorine, form a stable bond that keeps a disinfectant residual throughout the entire distribution system. During the spring months, the Service Authority and its water purveyors, Fairfax Water and the City of Manassas, perform an annual flushing with free chlorine instead of chloramines. Free chlorine is a strong disinfectant that aids in the disinfection of the flushed water mains.

## Q: Can water straight from the tap be used in home kidney dialysis machines?

**ANSWER:** Tap water must go through further treatment in order to be used in a dialysis machine. Because the water comes into close contact with a patient's blood, several substances like aluminum, fluoride and chloramines must be removed from the water before it can be used. In general, it is the responsibility of the medical director of the dialysis unit to ensure and monitor the quality of the water used in dialysate.

**Q:** Some of my faucet strainers are clogging with white particles. What causes this?

**ANSWER:** These white particles are very likely to be pieces of the dip tube from your hot water heater. Several brands of hot water heaters manufactured in the 1980s were made using a faulty dip tube that disintegrates over time. The dip tube carries the cold water from the top of the hot water heater to the bottom, where the cold water is heated. Over time, the dip tube disintegrates and the white particles are carried through the household pipes. If the particles are large enough they are caught in the strainers of the sink faucets or showerheads. Since it only affects hot water, these particles will only be found in places where hot water travels; so the toilet bowls and tanks, and automatic ice maker would not contain these particles if they are from the dip tube. If you are experiencing a problem of this nature, call the manufacturer of your hot water heater for further information.

**Q:** Who makes the rules and regulations for drinking water?

**ANSWER:** Regulations are made by both federal and state agencies. The Safe Drinking Water Act (SDWA) passed by Congress in 1974 and amended in 1986 and 1996 is governed by the United States Environmental Protection Agency (EPA) <http://www.epa.gov/safewater/standards.html>.

Within the EPA, the Office of Ground Water and Drinking Water administers the drinking water program under the Public Water Supply Supervision Program. Their functions include:

- ◆ Setting the maximum contaminant levels (MCLs) for contaminants in drinking water and setting other requirements to ensure that drinking water is safe.
- ◆ Delegating primary enforcement responsibilities to the states. Monitoring state activities to ensure that regulations are being met.
- ◆ Operating the program in states that have not accepted primary enforcement responsibility.
- ◆ Providing technical assistance to the states.

Provided for in the SDWA is the intent that states accept primary responsibility for enforcement of their drinking water programs (primacy). Under these provisions, each state must establish requirements for public water systems at least as stringent as those set by the EPA. In Virginia, the agency is the VDH.

In addition to the SDWA, the EPA has promulgated several specific rules to address various types of water contaminant problems. Some of these rules are: Surface Water Treatment Rule, Total Coliform Rule, and the Lead and Copper Rule.

## Q: Why does tap water sometimes look milky or opaque?

**ANSWER:** During the time of year when the water coming into the house is colder than the temperature inside the house, this phenomenon can occur. Cold water holds more oxygen than warm water does; consequently when the cold water from the water mains outside comes inside our warm homes and the water begins to warm, the oxygen has to escape. It does so through air bubbles which makes the water look milky. A visual example of this is to run water into a clear container and observe for a short time. If the water clears from the bottom to the top of the container, then the phenomenon described is occurring. The air bubbles are moving from the bottom to the top of the container to escape into the open atmosphere.

## Q: Can I store drinking water indefinitely and continue to be safe to drink?

**ANSWER:** The disinfectant in drinking water will eventually dissipate even in a closed container. If that container housed bacteria prior to filling up with the tap water, the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow bacterial growth.

## Q: Is it okay to use water from the hot water tap for drinking, cooking or making baby formula?

**ANSWER:** Hot water generally comes from a hot water heater that may contain impurities that should not be ingested. Some of these impurities might be metals from household plumbing that are concentrated in the heating process. Additionally, these impurities from the household plumbing are absorbed more rapidly in hot water than cold water, causing the amount of impurities to be higher in hot water.

## Q: Sometimes ice cubes made from the tap water or the melted water from ice cubes contains white particles. What are these particles, and where do they come from?

**ANSWER:** Ice cubes freeze from the outside in. Ice is formed from pure water (hydrogen and oxygen); therefore minerals such as calcium and magnesium normally found in the water sometimes end up as visible particulates in the core of the ice cube. The white particles are not toxic.

## Q: Coffee pots, irons, shower doors, glassware and cookware sometimes have a white residue. What is it?

**ANSWER:** The white residues are minerals that are found in the water such as calcium. Over time and repeated water use, there may be a build-up of the minerals on any item the water comes in contact with. There are commercial products that can be purchased to rid the surface of mineral build-up.

**Q:** Do I need to treat the tap water in any way before I place fish in an aquarium?

**ANSWER:** The chlorine in the water distributed by the Service Authority can be harmful to fish if not removed before placing in your aquarium. The Service Authority uses two types of chlorine: free chlorine from April to June as part of our annual flushing program and chloramines, which is a chlorine and ammonia mixture. Consult with your local pet store on methods to remove chlorine and chloramines.

**Q:** How is the water tested, and by whom?

**ANSWER:** The Service Authority's Water Quality Laboratory, a state certified laboratory, performs or manages the testing required by State and Federal regulations. In addition to regulatory testing, many other analyses are performed to monitor the water quality within the distribution system.

**Q:** What is the pink stuff in my toilet, shower or pet's dish?

**ANSWER:** The pink/orange stains in the toilet are most likely bacteria called *Serratia Marcescens*. This type of bacteria is most frequently observed in toilet bowls, on surfaces in shower stalls, inside dishwashers, on tiles, in sinks and in pet water dishes.

The bacteria will grow in any moist location where phosphorous containing materials or fatty substances accumulate. *Serratia* can grow in toilets where the water is left standing long enough for the chlorine residual disinfectant to dissipate. *Serratia* will not survive in chlorinated drinking water. To remove the bacteria in your toilets, clean them with bleach.

**Q:** Why does my water have a stronger chlorine smell in the spring?

**ANSWER:** During this period of time, normally April through June, a slight change is made in the water treatment process in an effort to facilitate an effective flushing program. Throughout the year, chloramine (ammonia and chlorine) is added to the water as the primary disinfectant. During the spring flushing program, chlorine is added in an uncombined state, commonly referred to as free chlorine. Free chlorine is a more aggressive disinfectant, and this temporary change in the water treatment process helps prevent bacteria from becoming overly resistant. Depending on your location within the distribution system and usage patterns, it could take up to a week for your drinking water to transition from combined to free chlorine at the beginning of April, or from free chlorine to combined chlorine at the beginning of July.

You may notice a chlorine taste and odor in your drinking water while free chlorine is utilized. If you are especially sensitive to the taste and odor of chlorine, try keeping an open container of drinking water in your refrigerator. This will enable the chlorine to dissipate, thus reducing the chlorine taste.

## Q: Has the Service Authority gathered information on emerging water quality issues?

**ANSWER:** Fairfax Water, the Service Authority's main water purveyor, has been following issues related to pharmaceuticals and personal care products in drinking water very closely and has developed a monitoring program. Fairfax Water also partners with many other entities to understand these emerging issues. For additional information on Fairfax Water's emerging water quality issues, please visit [http://www.fcwa.org/current/monitoring\\_program.htm](http://www.fcwa.org/current/monitoring_program.htm).

## Q: Who controls my water quality?

**ANSWER:** The EPA sets national standards to protect public health. These standards are enforced in our state by the VDH. On a monthly or annual basis, we submit water quality test results to VDH assuring them we are providing water that meets all safe drinking water standards. In addition, if there were ever a serious water quality problem, we would notify VDH immediately, as well as our customer, and work collaboratively with VDH to take prudent and corrective action.

## Q: Can I get sick from my tap water?

**ANSWER:** The Service Authority consistently tests and monitors the water to make sure that it meets EPA's safe drinking water standards. People do not typically become sick from drinking tap water. If you feel ill after drinking tap water, please consult your healthcare provider.

## Q: What are disinfection byproducts?

**ANSWER:** When chlorine reacts with natural matter such as decaying plant material in water, disinfection byproducts (DBPs) are formed. Two DBPs which are regulated by the EPA and VDH include Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5).

The EPA has set a limit on TTHM at 80ppb and HAA5 at 60ppb as a running annual average. The Service Authority is required to take samples every three months from our chlorinated systems.

The use of chlorine to make water safe has been around for a long time. Chlorine is easy to use, relatively inexpensive, and readily available. In countries with poor sanitation, the use of chlorine can save lives.

## Q: Are there bacteria in my water?

**ANSWER:** Water, air, food and our environments are not sterile. In fact, our immune systems need a certain degree of contact with germs to develop their defense mechanisms.

The Service Authority tests the biological quality of tap water to make sure it is sanitary and meets bacteriological safe drinking water standards. We add chlorine to disinfect it and make sure bacteria do not grow in it and become a problem.

As a result of our effective treatment processes and our use of chlorine, we do not suffer from the diseases that many people suffer from around the world.

## Q: What is that musty or earthy odor in my water?

**ANSWER:** A slight earthy/musty odor in the tap water can occur in the fall, especially after a hot, dry summer. Algae are prevalent in all surface waters and can be especially abundant during the warm summer months. As weather becomes colder and the water temperature decreases, the algae will begin to die off and release two nontoxic compounds that can cause an earthy or musty smell. We can smell these compounds in very minute quantities.

## Q: My tap water has a metallic taste.

**ANSWER:** Sometimes with older plumbing, a lingering metallic aftertaste can arise from the corrosion of plumbing materials, such as copper and iron.

The corrosion of plumbing materials can be enhanced by stagnant water conditions (such as when a house is closed up for long periods of time and no one uses the water) or by hot water or faulty plumbing. Metallic tastes can also occur when new plumbing or fixtures are installed and the metallic materials have not settled down.

Both the Service Authority water suppliers, Fairfax Water and the City of Manassas, add a corrosion inhibitor to help prevent metals from leaching into your drinking water. If your water tastes metallic, run the cold water for a few minutes to get fresh water into your home plumbing.

## Q: My tap water has a rotten egg or sulfur smell.

**ANSWER:** A rotten egg or sulfur smell usually indicates bacteria growing in your drain or hot water heater. Disinfect the drain with a household-cleaning agent such as bleach. Next, run the cold water for awhile. Fill a cup of cold water from the sink where you notice the odor, take the cup to another room and determine if you smell the odor. If you still detect the odor, it may be in the water heater. Most manufacturers recommend flushing their hot water heaters annually. Please check your manufacturer's owner's manual.

## Q: My bath water appears blue.

**ANSWER:** While relatively small quantities of water appear to be colorless, water's tint becomes a deeper blue as the thickness of the observed sample increases. The blue hue of water is an intrinsic property and is caused by the selective absorption and scattering of white light. Impurities dissolved or suspended in water may give water different colored appearances.

## Q: My clothes and towels smell sour after they are washed.

**ANSWER:** If your clothes or towels smell after they are laundered, the washing machine must be investigated as a possible source of the odor. If the washing machine is imparting an odor to the clothing or towels, it will be more noticeable when the laundry is wet. Once the laundry is dry, the odor subsides substantially but returns when the items become wet again. There are two possible causes of odors imparted to laundry in a washing machine.

- ◆ Clothes generally start to smell "sour" when they remain wet too long.
- ◆ Any portion of the washing machine that may collect lint, dirt and moisture may, over time, become a source of odor that is imparted to the clothing. See manufacturer's owner's manual to minimize odor.

## Q: What are the black specs in my tap water?

**ANSWER:** Perhaps the most common cause of black specs in tap water is from the deterioration of rubber materials used in plumbing fixtures that degrade when in contact with the chlorine and chloramines in the tap water. Gaskets and o-rings can degrade over time and the pieces can collect in toilet tanks and around faucets.

If the specs can be smudged between your fingers, then it is likely a deteriorating rubber material. If it does not smudge between your fingers, then it is likely sediment of manganese. For sediment or manganese, contact our Customer Service Department so we can flush the water distribution mains servicing your home. Be sure to flush the lines in your home once the mains are flushed.

Newly constructed or renovated buildings can experience similar problems with particles. Sometimes plumbers disturb a plumbing system as they do their work. Flushing new systems can really work well as a remedy.



## Q: Is bottled water safer to drink than tap water?

**ANSWER:** There are numerous brands of bottled water. Bottled waters have labels that tell you where the water comes from. We cannot recommend any particular brands.

The main reason people might prefer bottled water is because it does not contain chlorine, and it therefore does not have the chlorine flavor that tap water has. However, bottled water can sit around for a long time on store shelves before it is sold.

Bottled water is not necessarily safer to drink than your tap water. The standards EPA sets for the drinking water we provide are much stricter than the standards set by the Food and Drug Administration for bottled water. Consumers who choose to purchase bottled water should carefully read its label to understand what they are buying, whether it be for the taste, or a certain method of treatment. More information on bottled water is available from the International Bottled Water Association.

## Q: Should I purchase a home water treatment unit?

**ANSWER:** Home treatment units may be effective at improving a particular taste or odor issue; however, they do not provide an increased measure of safety. In fact, if the treatment system is not maintained properly, bacteria can grow in the unit and contaminate the water. If you choose to purchase a home water treatment unit, carefully read its product information to understand what you are buying. Be certain to follow the manufacturer's instructions for operation and maintenance and change the filter on a regular basis. Home treatment devices should also be certified (for example, should display an NSF seal). For more information, refer to EPA's Home Filtration Fact Sheet, located at Virginia Department of Health's website: <http://www.vdh.virginia.gov/drinkingwater/consume>.

If you have questions about your water quality, please contact our Regulatory Affairs Officer at (703) 335-7976 or by email at [water\\_quality@pwcsa.org](mailto:water_quality@pwcsa.org).



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