

# Water Color, Taste and Odor

Common concerns with drinking water are grouped into three categories.

- Color
- Taste/Odor
- Particles in the water

If the issue with your water is not described in the following information, please contact your local utility and we will personally address your concerns or you may contact your local health department.

## Color Problems

### **Brown, Red, Orange or Yellow Water**

Brown, red, orange, or yellow water is usually caused by rust. The different colors can be attributed to varying chemical oxidation states of the iron (rust) and by varying concentrations of the rust in the water. There are two major sources that can cause water to be rusty: The city water main, or the water pipes in your building.

Rusty water occurs from sediment in the pipes or rust from the inside walls of the water mains. The rust can be disturbed and temporarily suspended in water with unusual water flows from water main breaks or maintenance or by flushing of a fire hydrant. This discolored water is not a health threat. When the water is discolored it is recommended to either not wash laundry or to use a rust stain remover or regular detergent but not chlorine bleach as it will react with the iron to form a permanent stain.

The other major cause of brown, red, orange or yellow colored water is rusty pipes in your home or building. If old, rusty pipes are discoloring your water, consult a licensed, experienced plumbing contractor. Water that is being discolored by rusty pipes is not a health hazard, it is an indication that the pipes are corroding and will eventually leak.

The first step in solving a brown or yellow water problem is to distinguish if the problem is located in your building or if it is in the city water supply. The following are some common characteristics of a water main disturbance:

The water was clear but suddenly became discolored

Only the cold water is discolored

The water is discolored at all of the water faucets in your home and does not clear or improve after the water has been run for several minutes.

Some common characteristics of a corrosion problem within your home:

*The water is discolored every morning or the first time a faucet is used after several hours or days of disuse.*

*The water clears after it has run for a few minutes.*

*The discoloration is only at one or more faucets, but not all of the faucets in your home.*

*The discoloration is only in the hot water.*

## **Milky White or Cloudy Water**

Milky white water, also commonly described as cloudy, hazy, soapy, or foamy, is almost always caused by air in the water. To see if the white color in the water is due to air, fill a clear glass with the discolored water and set it on the counter. Observe the glass of water for 2 or 3 minutes. If the white color is air, the water will begin to clear at the bottom of the glass first and then gradually clear all the way to the top. This is a natural phenomenon and is caused by dissolved air in the water that is released when the faucet is opened. When you relieve the pressure by opening the faucet and filling your glass with water, the air is now free to escape from the water, giving it a milky appearance for a few minutes. If your water is cloudy or milky white in appearance and does not clear in a glass after 5 minutes, contact your local utility and we will investigate the situation further.

## **Green Water**

The most common cause of green water is copper plumbing corrosion. If this is happening, the water will usually have a bluish-green tint and/or will leave a bluish-green stain on porcelain if the water drips from a faucet. Copper corrosion can also be caused by your electrical system being grounded to your water pipes, especially if you have a mixture of pipe material (e.g, some copper and some galvanized steel). Green water may also be present in homes with copper plumbing that is less than two years old. The presence of copper can be confirmed through analysis. For more information on copper and its relation to water, visit the EPA website.

Green water can also be caused by dezincification of poor-quality bronze alloys found in valves, water pumps, and pump parts. This problem usually occurs only in high-rise buildings and large industrial properties where water is pumped into storage tanks.

During warm weather, green water may be caused by green algae in water supplies served by reservoirs, such as Beaver Lake. Algae are single-celled plants that readily grow in bodies of fresh water. Algae is not a health threat and reservoirs can be managed and monitored prevent or lessen the effect of algae. Algae are also addressed in the treatment process through filtering and/or chemical addition.

## **Blue Water**

Having blue water is rare and the cause may be due to extreme copper plumbing corrosion. The causes listed above under the "Green Water" heading, will also apply to blue water.

## **Taste and Odor Problems**

### **Chlorines, Bleachy, or Chemical Taste/Odor**

There are two common causes for these types of taste and odor problems.

- The addition of chlorine to the water by the public water supplier, or
- The interaction of chlorine with a build-up of organic material in your plumbing system.

The first step to identifying and solving the problem is to determine if the problem exists in the public water supply or in your plumbing. Like color issues, if the problem occurs in only one or more, but not all of the faucets in your home, the cause is in your plumbing system. If the problem is in the water supply, it will be present in all of the faucets or fixtures in your home. If the problem goes away after running the water for several minutes, the cause is somewhere in your plumbing system. If the problem persists after flushing your system, contact your local utility for further investigation.

## **Sulfurous, Decayed, or Sewage-like Taste/Odor**

The two most common causes of these problems include:

- Bacteria growing in your drain, or
- Bacteria growing in your water heater

By far the most common cause of this type of problem is the drain. Over time, organic matter (such as soap, hair, and food waste) can accumulate on the walls of the drain and bacteria can grow on these organic deposits. The bacteria can produce a gas that smells like rotten eggs or sewage. There is nothing wrong with the water; you just need to disinfect the drain.

Another cause of rotten egg or sewage smell in the water is bacteria growing in the water heater. This is most likely to occur if the hot water has been unused for a long period of time, if the water heater has been turned off for a while, or if the thermostat on the heater is set too low. The bacteria that produce this problem are not a health threat; however, the taste and odor can be very unpleasant. A licensed plumber should be contacted to deal with problems associated with the water heater.

## **Musty, Moldy, Earthy, or Fishy Taste/Odor**

The most common causes of these odors are:

- Bacteria growing in your drain, or
- Certain types of organisms in the water supply

By far the most common cause of this type of problem is the drain. For causes of bacteria and remedies read the previous section; "Sulfurous, Decayed, or Sewage-like Taste/Odor."

The other cause of this type of taste or odor in the water is much less common and results from certain types of algae, fungi, and bacteria growing in the water supply, especially during warm weather. Although these organisms are harmless, the human senses of taste and smell can be extremely sensitive to them, and can detect them in the water at very low concentrations.

## **Gasoline, Turpentine, Fuel-like or Solvent-like Odor**

Although this problem is rare, it is potentially serious. If you experience any of these types of odors, contact Your local utility immediately.

## **Particles in Water**

### **Brown or Orange Particles**

Brown or orange particles are usually small pieces of rusted steel that have broken off the inside of your water pipes or the city's water mains. These particles are very hard, irregular in size and shape, and can be several different colors. They consist of mostly iron and are not a health hazard but they can be a nuisance if they clog your washing machine screens, shower heads, and/or the screens at the ends of your faucets. If the water is clear with these particles in it, they probably came from the plumbing in your home. If the particles come from the water mains, the water itself will usually be discolored as well. For more details on discoloration, see the "Brown, Red, Orange or Yellow Water" section under Color Problems.

Another cause of brown or orange particles in the water could be a defective water softener. Inside a water softener are many small, round beads. The mechanism that keeps these beads in the tank can break,

releasing the beads into your water. These beads vary in size and color depending on the manufacturer; however, some commonly used beads are about the size of fish eggs and are brown or orange in color. If you see that the particles in your water are uniform in shape, size and color, and you have a water softener; contact your service agent for repairs.

## **Black Particles**

Black particles can come from four common sources:

- The inside of a steel pipe
- A broken water filter
- A degrading faucet washer or gasket
- A disintegrating, black rubber, flexible supply hose

Particles from the inside of a steel pipe are discussed in more detail under the “Brown or Orange Particles” section.

If the particles are very hard, similar in size and shape, and might be described as large coffee grounds, they are probably granular activated carbon (GAC) from the inside of a GAC water filter. If you have this type of filter and experience this problem, replace the filter or consult with the manufacturer of the unit.

If the particles are small black specks that might be described as being oily or sooty in texture, they are probably from the inside of a flexible rubber hose. Over time the chlorine in the water causes the rubber to break down. To stop this problem, replace the hose with one of the new styles that have a water disinfectant resistant lining, which should be indicated on the label, or change to a different style of hose that is not made of black rubber.

## **White or Tan Particles**

White or tan particles usually come from one of three places:

- The inside of your pipes
- Your water heater
- Your water softener

White or tan particles can be a combination of calcium carbonate and magnesium carbonate; this material is often referred to as pipe scale. Calcium and magnesium carbonates are naturally occurring minerals and are found in varying concentrations in most water around the world. These minerals are not a health threat; in fact, they are beneficial to human health. The amounts of these minerals in the water determine the hardness of the water, higher mineral concentrations make the water “harder.” Over time, these minerals can deposit on the inside of your pipes and then begin to flake off. If the water supplied by the city becomes softer, or if you add a water softener to your plumbing system, the softer water can begin to re-dissolve the minerals from the pipes and pieces may begin to break loose. These are all common causes of pipe scale in the water and account for most customer complaints about white or tan particles in the water. Although pipe scale is not a health hazard, it can be a nuisance by clogging inlet screens to washing machines, shower heads, and faucet aerators.