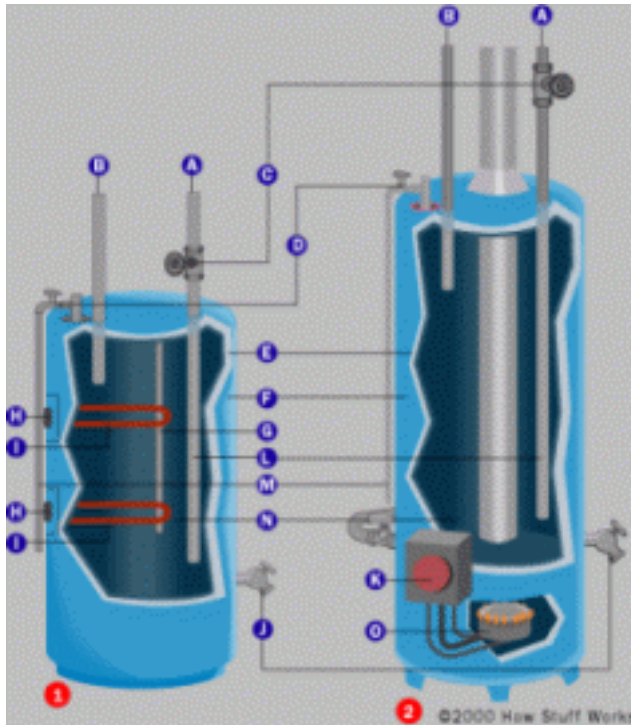


## Household Plumbing



Maintaining the plumbing in your home is an important part to clean and great tasting water. Here are some tips to help.

- [Flushing Household Plumbing](#)
- [Flushing Water Heaters](#)
- [Treating Water in an Emergency](#)
- [Disinfecting a Drain](#)
- [Heat Disinfection of Hot Water Heaters](#)

### [Flushing Household Plumbing](#)

A bleach-y or chemical taste and odor in the water in your home or business is often caused by an accumulation of organic material in the plumbing. The chlorine that the City of Lake Oswego puts into the water to control bacterial growth can react with this organic material to create chlorine by-products. Many of these by-products have a very strong chemical or bleach-y taste and odor.

The accumulation of organic material can be eliminated by flushing your water pipes. This procedure is outlined in the following steps:

1. Remove the screens (called aerators) from the ends of the indoor faucets and run all of the faucets wide-open and simultaneously for 3 to 5 minutes.
2. Flush the toilets two or three times each while the faucets are running. Running all the water faucets and toilets simultaneously generates a large flow of water through the pipes and will hopefully dislodge any build-up of organic material that is causing the taste and odor problem. Removing the aerators before flushing the plumbing will prevent anything dislodged by flushing from accumulating on the screens.
3. After 3 to 5 minutes of flushing, turn off the water faucets, clean the aerators, and reinstall the aerators on the ends of the faucets.

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## [How to Flush a Hot Water Heater](#)

Water heaters should be flushed at least once a year -- twice a year is even better -- to control the build-up of mineral deposits. This will help the water heater operate more fuel efficiently and will usually extend the life of the heater.

Furthermore, the water heater will need to be flushed if the hot water becomes a yellow or brownish color due to an accumulation of rust, or if you find sand-like mineral sediment in the hot water.

The procedure for flushing your water heater is outlined in the following steps. Refer to the diagram of a water heater below as necessary.

1. Do not shut off the gas or the water supply to the heater.
2. Attach a garden hose to the draincock located at the bottom of the heater. The draincock usually looks like a regular hose bib (garden faucet) or a round dial with a threaded hole in the middle.
3. Extend the garden hose to a place where the water can safely exit the heater (e.g., a drain, a driveway, etc.)
4. Open the draincock to allow the water to exit the heater. Caution: the water leaving the heater will be hot and under normal household water pressure. Also note that if the draincock is made of plastic and the heater is several years old, it may be difficult to open and may break easily if forced.
5. After five minutes of flushing, fill a bucket with the still flushing water.
6. Allow the water in the bucket to stand undisturbed for a minute and see if the water is clear or if any sand-like material settles to the bottom. If the water is clear and no sand-like material is observed, go on to step 7. If the water is discolored and/or sand-like material is observed at the bottom of the bucket, repeat steps 5 and 6 until the flush water is completely clear and free of sediment.
7. Close the draincock and remove the garden hose.

If you do not feel comfortable doing this work yourself, hire a licensed plumber to do it for you.

## [Treating Water in an Emergency](#)

Treating potentially contaminated water in an emergency. During an emergency such as a major earthquake, the City of Lake Oswego may issue a "boil water notice" until it can verify that the water is not contaminated and is safe to drink. During a "boil water notice" period, any water used for drinking or food preparation should be boiled at a full rolling boil for at least one full minute. A full rolling boil is a vigorous boil that cannot be stopped by stirring the water. If the water is very dirty looking and/or has particulate matter in it, filter the water through a coffee filter, paper towels, or clean cloth before boiling.

If the emergency has left you with no way to boil the water or if you have limited fuel and do not want to use it for boiling water, you may treat the water with liquid chlorine laundry bleach. NOTE: do not use scented laundry bleach, powdered bleach, or swimming pool chlorine; these contain additional chemicals that are poisonous. Below is a chart that indicates how much liquid bleach to add to the water.

Amount of Water	Amount of bleach to add to clear water	Amount of bleach to add to cloudy/dirty water
1 gallon	8 drops	16 drops
5 gallons	1/2 teaspoon	1 teaspoon

After you add the bleach, thoroughly mix by stirring or shaking the container. Let the water stand for 30 minutes before using. A slight chlorine odor should be noticeable in the water; if not, add another dosage of bleach and allow the water to stand another 15 minutes before using. The water can also be treated with the use of water purification tablets that can be purchased at most outdoors or sporting goods stores. Follow the directions for use on the package you purchase. Treat only enough water to meet your needs for 48 hours at a time. There is an increased chance of recontamination if the treated water sits for more than 48 hours. Refrigeration will also help prevent recontamination. Note: Most home water filters are meant for water that is already microbiologically safe. Using these filters during a "boil water notice" will not guarantee the safety of the water. Replace any filter cartridges after the boil water notice has been lifted to ensure your filter is not contaminated.

### How to store an emergency water supply

Bottled water purchased at grocery stores can be stored for several years. The bottles should be stored in a cool dark place and should not be exposed to sunlight or fumes of petroleum products and pesticides/herbicides. They should be checked periodically to ensure that the plastic has not cracked or developed leaks. If the containers have cracked or leak, replace them.

Storing tap water for emergency use is more complicated. The storage containers must be sterilized and the water treated before it is stored. Also the water should be changed every six months. Sterilizing the containers. Containers made of heavy opaque plastic with screw-on caps are the best to use. Plastic milk and orange juice containers are very thin and tend to crack and leak as they get old. Also these containers often have snap-on lids that do not seal as well as screw-on caps.

1. Wash the containers with soapy water. Rinse thoroughly. Fill the container half full with water and add 1 cup of chlorine bleach for each gallon the container holds. NOTE: do not use scented laundry bleach, powdered bleach, or swimming pool chlorine; these contain additional chemicals that are poisonous. Finish filling the container with water (all the way to the top). Put the cap on and lay the bottle on its side for about 3 minutes. This allows you to check if the container leaks while the bleach-water disinfects the cap. If the container leaks, do not use it.
2. Pour the bleach-water into the next container to be sterilized. The same disinfecting bleach-water can be used for several containers ? simply "top off" the new container with water as needed.  
\*\*\* REMEMBER ? this is not drinking water - pour down drain when finished \*\*\*

### Treating the water to be stored.

1. Fill the sterilized bottle half full with tap water. Add 8 drops of chlorine bleach for each gallon the container holds. NOTE: do not use scented laundry bleach, powdered bleach, or swimming pool chlorine; these contain additional chemicals that are poisonous. Finish filling the bottle with tap water. Leave a small air space at the top of the container to allow for expansion if the water heats up slightly where you store it.
2. Put the cap on tightly.

### Storing the water

The water containers should be stored in a cool dark place and should not be exposed to sunlight or fumes of petroleum products and pesticides/herbicides. They should be checked periodically to ensure the plastic has not cracked or developed leaks. If the containers have cracked or leak, replace them.

Change the water in the containers every six months.

### [How to Disinfect a Drain](#)

A perceived odor of rotten eggs or sewage in the water is usually caused by sewer gases forming in the household drain. These gases are formed by bacteria which live on food, soap, hair, and other organic matter in the drain. These gases are heavier than air and remain in the drain until the water is turned on. As the water runs down the drain, the gases are expelled into the atmosphere around the sink. It is natural to associate these odors with the water because they are observed only when the water is turned on. However, the odor is not in the water, it is simply the water pushing the gas out of the drain.

To eliminate this problem, the bacteria in the drain must be killed. This process is called disinfecting the drain and entails the following seven steps:

Caution: do not mix any drain cleaners or detergents with bleach; certain combinations can create toxic fumes.

1. Run the cold water for about 15 seconds into the drain that is to be disinfected, then turn the water off.
2. Pour approximately one to two cups of liquid chlorine bleach (laundry bleach) down the drain (or drains) where the odor is present. Pour the bleach slowly around the edges of the drain so that it runs down the sides of the drain. Caution: bleach may cause eye damage, skin irritation, and may damage clothing - BE CAREFUL!

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3. If the odor is coming from a sink with a garbage disposal, turn the disposal on for a few seconds while the bleach is being poured. This will disperse the bleach around the inside of the disposal. Caution: bleach may cause eye damage, skin irritation, and may damage clothing - take care to avoid splashing for the few seconds the disposal is turned on.
4. Allow the bleach to remain undisturbed in the drain for about 10 minutes. Caution: prolonged contact with metals may cause pitting and/or discoloration.
5. After 10 minutes, run the hot water into the drain for a minute or two to flush out the bleach. If a garbage disposal was disinfected, thoroughly flush it as well.
6. This procedure may need to be repeated if the odor returns.

### [How to Heat Disinfect a Water Heater](#)

A sulfurous or rotten egg-like odor in hot water is caused by bacteria growing in the water heater. This usually happens when the water heater is turned off while on vacation, when the hot water has not been used for a long time, or when the temperature setting on the heater is set too low. The bacteria in the water heater are not a health threat; however, they must be eliminated to stop the odor problem.

The procedure for eliminating the bacteria is called heat disinfection. It is a complex procedure that involves draining the water heater, maximizing the temperature in it, and then draining the water heater again. This procedure is outlined in the following steps. Refer to the diagram of a water heater below as necessary:

1. One evening, drain the water heater: Turn off the thermostat on the heater so that only the pilot light remains on. If the heater is drained while the heating flame is on, the heater may be damaged.
2. Turn off the water supply to the water heater. There may be a valve to do this right at the inlet to the water heater, or the water supply to the entire property may need to be shut off at the wheel valve.
3. Open one or more hot water faucets inside the house. This allows air to enter the heater as the water drains out in step 6.
4. Attach a garden hose to the draincock located at the bottom of the water heater. The draincock usually looks like a regular hose bib (garden faucet) or a round dial with a threaded hole in the middle.
5. Extend the garden hose to a place where the water can be disposed of (e.g., a drain, the driveway, etc.)
6. Open the draincock and allow all of the water to drain out of the water heater. This can take anywhere from five minutes to half an hour or more, depending on the capacity of the heater and the size of the draincock. Caution: the water that drains out will be very hot. Also note that if the draincock is made of plastic and the water heater is several years old, it may be difficult to open and may break easily if forced.
7. When the water heater is empty, close the draincock and remove the garden hose.
8. Turn the water supply to the water heater back on. Leave the hot water faucet(s) inside the house turned on. This will allow the air in the water heater to escape as it refills with water. There will likely be "hissing" sounds and/or "spitting and sputtering" as air and water begin coming out of the hot water faucets. When the water flow from the faucet(s) return(s) to normal, shut them off.
9. That night (before going to bed): turn the thermostat for the water heater to its highest temperature setting for one night. Caution: make sure everyone who uses the water is aware that the hot water is going to be hotter than usual.
10. The next morning: Turn off the thermostat on the heater so that only the pilot light remains on. If the heater is drained while the heating flame is on, the heater may be damaged.
11. Drain and refill the water heater by repeating steps 2 through 8.
12. Return the thermostat on the water heater to the normal setting (usually around 130°F).

If you do not feel comfortable doing this work yourself, hire a licensed plumber to do it for you.

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