

# Guidance for Draining and Flushing Your Water Heater

Draining and flushing your water heater, as part of routine maintenance, is essential to remove sediment at the bottom of the water heater and around the internal heating element. Sediment build-up makes the water heater work harder to heat the water, and most importantly, sediment build-up can promote the growth of waterborne bacteria. These bacteria can cause illnesses, including Legionnaires' disease.

It is strongly recommended to hire a licensed or qualified plumber when planning to drain and flush your water heater. On average this costs between \$75 and \$250 but the actual cost can vary depending on the type of water heater and other unforeseen issues. Individuals at increased risk (e.g., individuals who are ≥50 years age, smoke, have a weakened immune system, have chronic lung disease, or have underlying health conditions) should not participate in draining and flushing activities as it may expose them to aerosolized water (small droplets of water in the air) containing bacteria.

At your own risk, you may decide to complete this task on your own. The NJ Department of Health is not liable for any issues that may arise. If your water heater has not been recently drained or flushed, then the valves can rust over time and become difficult to completely close once opened. This can lead to leaking and water damage. The water can be very hot, so you may want to wear protective goggles and heavy-duty rubber gloves during the process. It is also important to keep children and pets clear of the working area, faucets, and drains while you work.

We have provided step-by-step instructions for draining and flushing that may be helpful, but you must refer to original manufacturer's instructions.

## Supplies Needed:



Garden hose



Bucket



Towels



Flathead screwdriver or pliers



Threaded hose cap

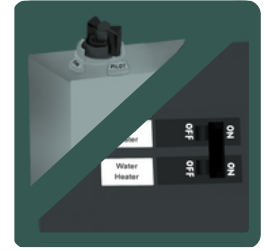
### 1. Familiarize Yourself with the Heater

Prior to doing any work, carefully review the water heater's owner manual and the instructions posted on the side of the tank. Figures for standard gas and electrical water heaters are included below.



## 2. Turn Off the Electrical Power and/or the Gas Supply

It's important to shut off the electrical power or the gas to the water heater before draining it, or you could potentially damage the heating components. If it is an electric water heater, shut the power off from the home's electrical panel. The correct fuse or circuit breaker should be labeled as being connected to the water heater. If it's a gas water heater, check the owner's manual to see if you need to shut off the manual gas valve to the heater or switch the gas control valve/thermostat to "off" or "pilot" mode.



## 3. Replace the Hot Water with Cold Water or Let Stored Water Cool

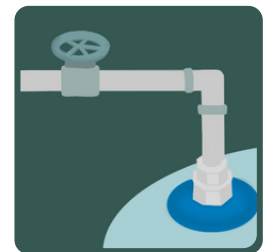
To prevent injury and scalding, turn on all the hot water faucets or faucet closest to the water heater to replace the hot water in the heater with cold water.

An alternative option to above step is to allow the stored hot water to cool down within the water heater before you drain it (typically overnight).



## 4. Turn Off the Water Supply to the Heater

At the top of the water heater, you'll see a cold water inlet pipe (i.e., pipe that allows water to enter the tank). Identify the shutoff valve located on the cold water inlet pipe and turn this valve to shut off the cold water to the tank. If there is no shutoff valve here, you'll need to locate and turn off the main incoming cold water supply valve to the house.



## 5. Release the Water Pressure

Turn on a hot water faucet in a sink or shower on the top floor of the home and leave it on until the entire flushing process is finished. This will release pressure in the line and ensure that a vacuum doesn't form, which would prevent the system from draining and flushing completely.



## 6. Attach a Garden Hose to the Drain Valve

Locate the drain valve near the bottom. Attach a garden hose to the closed drain valve and place the other end in a drain bucket, sink, floor drain, or outside. The hose should be lower than the drain valve to ensure a strong water flow. You may need to buy a connector to attach the hose to the valve. Check the owner manual for accurate valve size specifications.



## 7. Open the Drain Valve to Drain the Water From the Tank

You can usually do this by hand, but you might need to use a flat-head screwdriver, or pliers based on drain valve knob type. Open the drain valve completely by turning it counterclockwise. Once the valve is open, water will begin to flow out of the drain so again, be sure the hose either leads into a bucket, sink, floor drain or outside. If you are using a bucket, you will need to turn off the drain valve once the bucket fills so that you can dump the water. Repeat this process until water stops flowing from the hose. Keep towels handy to soak up any water leaks.



## 8. Flush the Sediment after Complete Draining of the Tank

When the water stops flowing from the hose, turn on the water supply valve to allow cold water to flow into the drained tank. This will flush any remaining sediment from the heater. You can take a few buckets of water out of the tank to remove any sediment that accumulates at the bottom of the tank. When the water runs clear, you'll know that you've removed the sediment and you can move on to the next step.



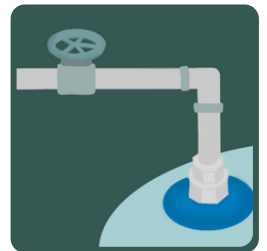
## 9. Close the Drain Supply

When the water from the hose runs clear and free of sediment, shut off the water supply valve, remove the hose and close the drain valve, checking to ensure the drain is completely closed and leak-free. If it did not close completely, you can put a threaded hose cap over the valve to stop the leak or get the valve replaced completely.



## 10. Turn the Water Supply Back On

Turn on the water supply line again and check the sink or shower faucet you had previously turned on. Ensure that the water from these faucets runs clear and free of sediment. Once the water from the faucets has regained normal pressure, shut off the faucets. This indicates the tank is full again. Note that the water should still be cold.

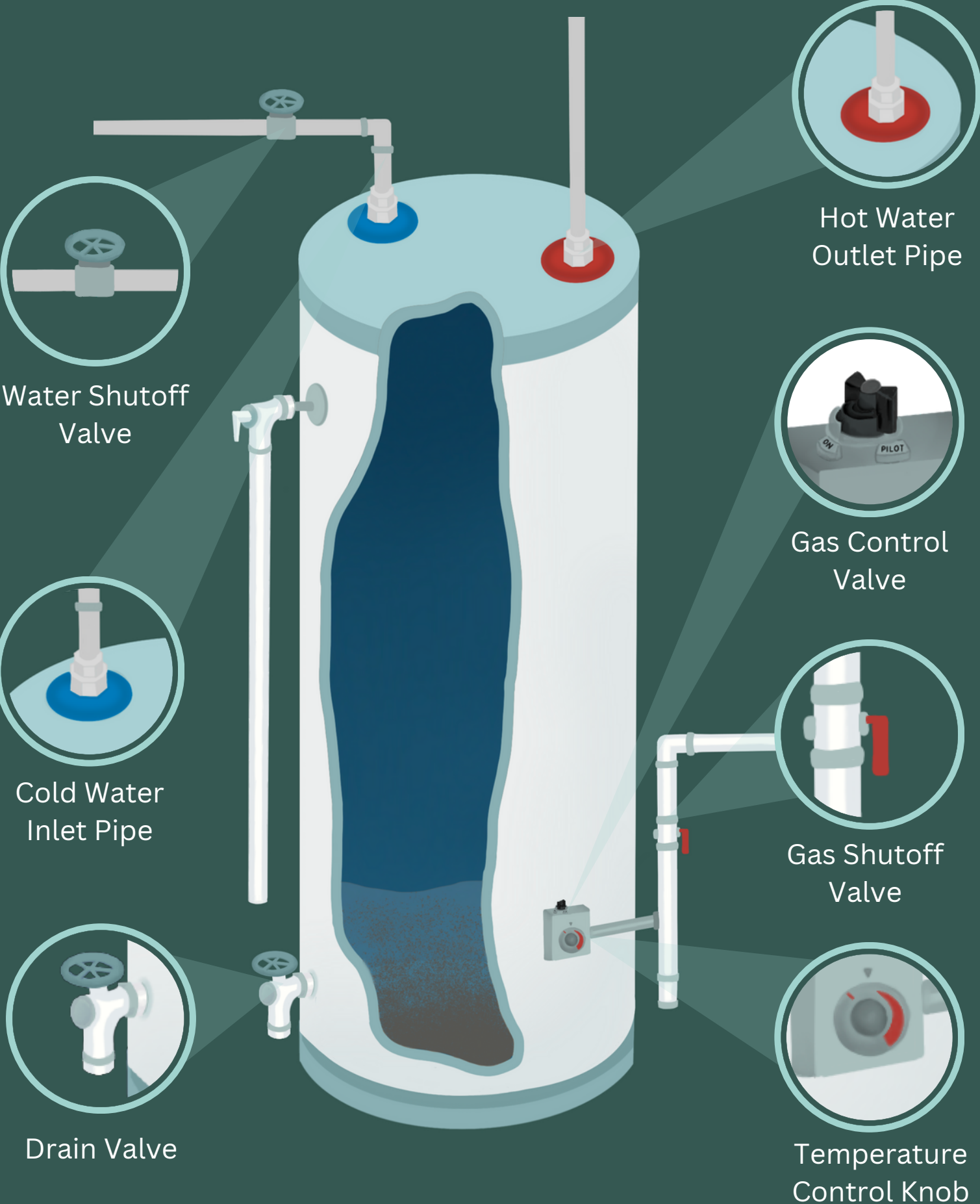


## 11. Turn On Your Water Heater

For electric heaters, turn on the circuit breaker at the electrical panel. For gas water heaters, turn on the gas supply line valve or move the gas knob from “pilot” to “on” position. Within an hour or so, you should have hot water. It is recommended that the temperature of the water heater is set to a minimum of 120° F. However, setting the heater higher than 120° F may be better for controlling bacterial growth but be sure to take extra precautions to avoid scalding. You may consider installing a mixing valve if you have household members at increased risk of scalding, such as young children.



# Components of a Gas Water Heater



# Components of an Electric Water Heater

