



## TCEQ GENERAL INFORMATION

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Water Supply Division

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# Disinfecting Your Private Well

## Is Your Well Flooded? Disinfect It Before You Drink It!

If your private well is flooded, do not use water from it until the following three things have occurred:

1. The floodwaters have receded from the well and your plumbing system.
2. You have disinfected the well and your plumbing.
3. You have sampled your water and received a lab report confirming that the disinfected water contained no bacteriological contaminants.

In these instructions we provide information on how to disinfect your well and your household plumbing system and where to find information about how to sample the water for analysis by a bacteriological laboratory.

You can use these steps any time you suspect that your well has become contaminated by harmful bacteriological contaminants, not just after a flood.

You also have the option of choosing to hire someone to disinfect and test the water from your well.

## Before You Begin

### *Know the hazards*

Be aware of the possible hazards involved in disinfecting your well:

- You will be working with water and electricity. Use the appropriate precautions to avoid electrical shock.
- You will be using liquid bleach or solid calcium hypochlorite. These chemicals can burn your skin and eyes and whiten your clothing if handled improperly. Read the manufacturer's warnings on the label and take the recommended precautions.

### *Find another source of water*

Before you start, make sure you have enough drinking water from another source for all the drinking, cooking, and bathing you will need to do for at least 12 to 24 hours. Consider these options for other sources:

- Bottled water.
- Water from some other source that is known to be uncontaminated.

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- Water that you boil before use. If you choose to boil water, heat it to the boiling point and let it continue at a full boil for two minutes. Let it cool before using it for drinking or bathing.
- Water that you have disinfected another way. Find information about disinfecting water at [EPA's Emergency Disinfection of Drinking Water webpage](https://www.epa.gov/ground-water-and-drinking-water/emergency-disinfection-drinking-water)<sup>1</sup>.

You also need to have some extra water available to flush toilets, but that does not have to be drinking water.

### ***Know how long you need***

Allow time for disinfecting your well and plumbing system, and for sampling and analysis:

1. **Disinfecting the well itself:** about an hour and a half.
2. **Disinfecting the rest of your plumbing:** 12 to 24 hours.
3. **Flushing the system:** varies; about 5 to 10 minutes per faucet.
4. **Sampling the water and sending it to the lab:** about 15 minutes.
5. **Getting the results back from the lab:** about two days.

Sampling the water is very important. You shouldn't drink or cook with water from your well until a bacteriological lab confirms that the water is free of indicators of fecal contamination.

## **How to Disinfect Your Well and Plumbing System**

### ***Gather the information and materials you will need. Locate on your property:***

- The power switch to your well pump.
- The power to your water heater.
- The wellhead. (This is the concrete pad on top of the well. It might be in your pump house or just outside somewhere. It generally has a pipe sticking out that goes to your pressure tank.)
- The faucet nearest to the wellhead. (This should be a water tap that you can hook a garden hose to.)
- If your well is pressurized, locate the pressure release valve. (It might look like a faucet.)
- The well access plug. (It might look like a large bolt.)

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<sup>1</sup> [www.epa.gov/ground-water-and-drinking-water/emergency-disinfection-drinking-water](https://www.epa.gov/ground-water-and-drinking-water/emergency-disinfection-drinking-water)



Figure 1: The wellhead on your property will typically include a pipe leading to your pressure tank.

### ***Gather these materials:***

- Disinfectant: liquid chlorine bleach (“bleach” in the rest of these instructions) or solid calcium hypochlorite.
- A wrench that fits the well access plug.
- A funnel (wide mouthed if you use calcium hypochlorite).
- A garden hose long enough to reach the wellhead from the nearest faucet.

**Table: How Much Disinfectant to Use**

<b>If your well is this deep:</b>	<b>Use this much bleach:</b>	<b>Or use this much solid hypochlorite:</b>
Less than 100 feet	1 quart	1/8 cup
100 to 200 feet	2 quarts (1/2 gallon)	1/4 cup
200 to 300 feet	3 quarts	3/8 cup
More than 300 feet	4 quarts (1 gallon) or more	1/2 cup or more

### ***Liquid chlorine bleach***

Liquid chlorine bleach is sold as a cleaning product, but not all bleaches will work for disinfecting your well:

- **Don’t** use bleach that is scented or odorless—it should have a sharp chlorine odor.
- Find information about [approved brands](#)<sup>2</sup>.

<sup>2</sup> [www.tceq.texas.gov/goto/bleach](http://www.tceq.texas.gov/goto/bleach)

- You may use bleach that is not on this list if it has an NSF (National Sanitation Foundation) seal, as shown in Figure 2, or says “meets NSF Standard 60” on the label.



*Figure 2 NSF Seal*

NSF International certifies products for specific uses—for example, bleaches for safely treating drinking water. If you have questions about whether a particular disinfectant is safe to use in your well, call **the NSF** at 800-NSF-8010.

### *Calcium hypochlorite*

Calcium hypochlorite is sold for chlorinating swimming pools. Because it contains more chlorine than bleach, it might be easier to work with, especially if you follow these tips:

- Make sure the calcium hypochlorite you use has an NSF seal or says “meets NSF Standard 60” on the label.
- Get a granular or powdered form, not the large tablets. (They can be hard to break into pieces small enough to fit into the well, and they can be slow to dissolve.)
- If you get a powdered form, be sure it’s fresh. (The powder can lose its disinfecting power on the shelf.)

### *What not to use*

**Don’t use other disinfectants in your well.** After all, you want to drink this water! Especially avoid these:

- Scented (or “scentless”) laundry bleaches.
- Chlorine-free bleaches.
- Disinfectants designed for hot tubs.

### ***Disinfect the well***

The time needed for this part of the process depends on whether or not you have a pressurized well. If your well has a screened vent at the wellhead, or if you haven’t used an air compressor to maintain water pressure, your well is probably not pressurized.

### *Disinfecting a pressurized well*

This process takes at least 12 hours:

1. Turn off the power to the well pump and air compressor.
2. At the wellhead or pump house, find the pressure-release valve. Before you open it, be sure that you are in the open and breathing fresh air, not the vented air, which

may contain hydrogen sulfide, methane, or other gases that sometimes can build up in wells.

3. Open the valve to release all the pressure in the well.
4. Remove the access plug. (You'll need to replace it later.)
5. Put the funnel in the opening where you removed the access plug.
6. Pour in the bleach or calcium hypochlorite. (See the table on page 3 for the right amount to add.)
7. Replace the access plug. Let the well sit for at least 12 hours. During this waiting period:
  - Following the manufacturer's directions, turn off the power to your water heater and drain it.
  - Drain any other water-storage tanks that are connected to your plumbing system.
  - If you can, collect at least some of this water (for example, in 5-gallon buckets) to use whenever anyone needs to flush a toilet during the rest of the disinfection process.
  - Read the rest of these instructions—and information in "How to Sample for Bacteriological Contaminants in Your Private Well Water". GI-433<sup>3</sup> You can save yourself some time later by finding a water-sampling kit now.
8. When the 12-hour waiting period is over, turn on the power to your well pump and air compressor.

### ***Is this more than you can do?***

If you are not comfortable carrying out these steps, contact a professional water-well driller to perform them for you.

### ***Disinfecting a non-pressurized well***

1. Turn off the power to the pump.
2. Remove the access plug.
3. Put the funnel in the opening where you removed the access plug.
4. Pour in the bleach or calcium hypochlorite. (See the table on page 3 for amounts.)
5. Connect the garden hose to the faucet nearest the wellhead.
6. Turn the power to the pump back on.
7. Turn on the faucet and run water through the funnel into the well for one hour. By circulating the chlorinated well water, you will expose all fittings and equipment in the well to the chlorine solution and improve the germ-killing action.

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<sup>3</sup> [www.tceq.texas.gov/goto/gi-433](http://www.tceq.texas.gov/goto/gi-433)

## 8. During this hour:

- Following the manufacturer's directions, turn off the power to your water heater and drain it.
- Drain any other water-storage tanks that are connected to your plumbing system.
- If you can, collect at least some of this water (for example, in 5-gallon buckets) to flush toilets during the rest of the disinfection process.
- Read the rest of these instructions—and the ones in “How to Sample for Bacteriological Contaminants in Your Private Well Water “ [GI-433](#)<sup>4</sup>. You can save yourself some time later by finding a water-sampling kit now.

9. After the hour is up, remove the garden hose and funnel and immediately replace the access plug.

## *Disinfecting your plumbing*

To disinfect the rest of your plumbing system, you will fill the pipes with chlorinated water from the well and let it remain at least overnight—if you can, let it remain for 24 hours. For the best results, follow the steps below:

1. Working away from the well, go to the next closest outside faucet. Turn it on, run the water until you can smell the sharp odor of bleach (chlorine), and then turn it off.
2. Repeat step 1 until you have reached all the outside faucets.
3. Refill the water heater, but don't turn the heat back on yet.
4. Refill any water-storage tanks.
5. Go inside and flush each toilet until the water coming in smells chlorinated.
6. Repeat step 1 on each inside faucet. Be sure to include bathtubs, showers, and other faucets and to do this to the cold- and hot-water faucets.
7. If you have a chilled-water line on your refrigerator, run it until you smell bleach.
8. Now that your plumbing system is full of chlorinated water, let everything stand at least overnight or, if you can, for 24 hours to kill germs in your plumbing. During this time:
  - Don't use this water for drinking, cooking, bathing, washing clothes, or washing dishes.
  - You can use this water for flushing toilets, or you can use water collected from draining your water heater. If the toilet isn't clogged, it will flush if you pour in 2 or 3 gallons of water from a bucket.
  - If you have an icemaker, let it run, but dispose of all the ice it produces.

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<sup>4</sup> [www.tceq.texas.gov/goto/gi-433](http://www.tceq.texas.gov/goto/gi-433)

- Run your empty dishwasher and clothes washer through a full cycle.

### ***Flush the system***

After the chlorinated water has been in your plumbing system for 12 to 24 hours, it's time to flush the system. This process will take about the same amount of time it took to fill the system with chlorinated water—about 5 to 10 minutes per faucet, on average:

1. While you are carrying out the rest of these steps, drain your water heater and any other water-storage tanks connected to your plumbing system.
2. Starting with the outside faucet farthest from your well, open the faucet and run it until you no longer smell chlorine and the water is clear of any debris or color.
3. Working your way back toward the well, continue step 2 with each outside faucet. Don't flush any inside faucets until you have finished outside—otherwise, you might flood the septic system.
4. Flush each toilet once.
5. Repeat step 2 with each inside faucet.
6. If you have a chilled-water line, run it until you no longer smell bleach. Dispose of all of this water.
7. Refill the water heater and any other water-storage tanks.
8. Following the manufacturer's directions, turn the power to your water heater back on.
9. Run a rinse cycle on your dishwasher and your washing machine.

### ***More than you can do?***

If this process for disinfecting a well seems like more than you want to handle, call a plumber or licensed water-treatment specialist to have it done for you. While not that complicated, it's important to have the job done right.

## **Find out How to Sample Your Water for Bacteriological Contaminants and Understand the Results**

See [GI-433](http://www.tceq.texas.gov/goto/gi-433)<sup>5</sup> for guidance on how to sample your private well for bacteriological contaminants.

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<sup>5</sup> [www.tceq.texas.gov/goto/gi-433](http://www.tceq.texas.gov/goto/gi-433)