

# How to *Disinfect a Water Well* Through *Shock Chlorination*

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This method is for private wells with a properly functioning submersible pump<sup>4</sup> only. If your well uses a jet pump or your system is damaged, the following instructions for the disinfection process will not work. An indication that your well is damaged can be a decrease in water pressure once turned on. Contact a certified contractor for examination.

Wells can become contaminated several ways. Flood water can carry contaminants into the well. An improperly working septic system or livestock grazing near the well access can introduce bacteria. Ingesting or being exposed to contaminated water may cause sickness, so it should not be used for:

- drinking
- cooking
- making ice
- bathing in any form
- washing clothes or dishes

If you think your well system may be contaminated, alternative drinking water options include using bottled water, water boiled for one minute, or water from a source you know isn't contaminated. Disinfection can eliminate or reduce harmful bacteria, viruses, or other microorganisms

that may be found in your drinking water. To ensure a safe and effective disinfection process, follow these directions step-by-step instructions to shock chlorinate your well:

## *Preparation Phase*

### Tools Needed

- wrench to access the well
- a garden hose long enough to reach from an outdoor water faucet to the well
- protective goggles and gloves
- clean 5-gallon bucket
- 5 gallons of uncontaminated water (for example, bottled water)
- funnel
- unscented, household liquid bleach less than 6 months old

### Calculating Amount of Bleach Needed

The amount of bleach to be used in the disinfection process will depend on the water depth inside your well. To calculate the water depth in the well, subtract the static water level (distance from land surface to the water in the well) from the total depth of the well. If you are uncertain of your static water level, use the total measurement of the total well depth. Use that depth along with the diameter of your well to look up in table 1 the amount of bleach you will need to use.

<sup>4</sup>A submersible pump is a pump that is below ground surface and is submerged in the well water column. A jet pump is typically above ground with no openings above ground (i.e., completely sealed).



**Table 1. Amount of unscented, household liquid chlorine bleach needed for well disinfection**

Water depth in well (feet)	Well diameter (inches)				
	4	6	8	24	36
10	6 cups	7 cups	8 cups	20 cups	2.5 gal
20	7 cups	8 cups	10 cups	2.5 gal	4.5 gal
50	8 cups	10 cups	14 cups	5 gal	10.5 gal
100	10 cups	16 cups	22 cups		
150	12 cups	20 cups	30 cups		
200	14 cups	1.5 gal	2.5 gal		
400	22 cups	2.5 gal	4.5 gal		

4 cups = 0.25 gal; 8 cups = 0.5 gal; 12 cups = 0.75 gal; 16 cups = 1 gal

**WARNING:** Excessive chlorination can be harmful. Follow table 1 carefully.

## Step By Step Instructions

### Step 1— Flush the well:

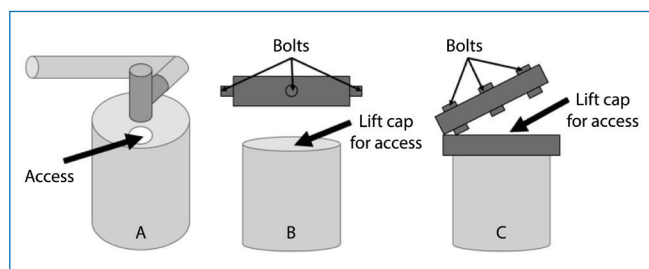
- Remove all debris near the well. Check the well for damage. Remember, if your well is damaged, this process will not work.
- If you have noticed cloudy or muddy water coming from the well, connect a garden hose to the outside faucet nearest to the well, and turn the water on at the faucet and let it run until water is clear and free of sediments.

### Step 2 — Power Off:

- Turn off electrical power to the pump by turning off the circuit breaker.
- Disconnect water softeners or household water filters by switching to bypass mode or the “out of service” position.

### Step 3 — Open the Well:

- For a well seal (Fig. 1A), remove the threaded well plug for access; for a well cap (Fig. 1B) or sanitary cap (Fig. 1C), remove the bolts from the cap and lift for access.
- If your well system does not look like the options below, call a contractor for further assistance.



**Figure 1.** Different well access possibilities: A, threaded well plug; B, well cap; C, sanitary cap.

### Step 4 — Mix Bleach Water Solution:

- Fill the 5-gallon bucket about  $\frac{3}{4}$  full with bottled water.
- Look back at table 1 to determine how much bleach is needed.
- Add the bleach to the bucket of water.
- Using the funnel, pour the bleach solution into the threaded well plug or well casing. **Be careful not to splash/spill the solution.**

### Step 5 — Recirculate the Chlorinated Water:

- Turn on the circuit breaker to the pump.
- Connect a garden hose to the outdoor faucet nearest to the well.
- For a well seal, place the funnel into your well’s access point and put the garden hose into the funnel. For well caps and covers, place the garden hose into the well casing.
- Turn the water on and let it run for 30 minutes to circulate the bleach within the well.

### Step 6 — Run Chlorine Solution Through All Faucets:

- Run the chlorinated water throughout the outside spigots and work your way inside the house by turning on each tap one at a time until you smell bleach. Once you smell or detect bleach, turn the tap off.
- Repeat this step for both hot and cold taps, toilet and shower/bath taps, and outside faucets.
- Leave the chlorinated water in the plumbing for a minimum of 8 hours or overnight.

### Step 7 — Flush the Chlorinated Water:

- Connect a garden hose to an outdoor faucet and run the water until you no longer smell chlorine.
- Keep the running water away from your septic system, landscaping, and bodies of water.
- Turn off the garden hose once you can no longer smell chlorine.
- Begin turning on each fixture inside the house one at a time until the chlorine smell is no longer present.

## Step 8 — Disinfect Water and Reconnect Treatments:

- Disinfect home water softener or household filters according to the manufacturer's instructions and then reconnect those devices. **Do not drink the water until it has been tested.**
- Send a water sample to a lab to ensure it is safe to use.

**IMPORTANT:** Before using the water for drinking, cooking, making ice, or preparing food, have the water tested by a certified laboratory. If disinfection attempts fail, the well may need to be cleaned before it is disinfected again. Contact a contractor or local health department for help.

## For More Information

Texas Commission on Environmental Quality  
certified laboratory database  
[https://www.tceq.texas.gov/goto/certified\\_labs](https://www.tceq.texas.gov/goto/certified_labs)

This procedure is based on well disinfection protocols from the Florida Department of Health, Minnesota Department of Health, Virginia Tech Cooperation Extension, Texas A&M Agrilife Extension, and Texas Commission on Environmental Quality.

## Acknowledgment

Support for this publication is provided through Clean Water Act§319(h)  
Nonpoint Source funding from the Texas State Soil and Water Conservation Board and the  
U.S. Environmental Protection Agency under Agreement No. 17-10.

*Photo by Kristine Uhlman, former Texas A&M Agrilife Extension Program Specialist–Water Resources*

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