How to prepare your well for the next flood: Evacuation Preparations and Return Home

You can act to better prepare your well for a flood, even as you are making plans to evacuate. **Store adequate bottled water for drinking and cooking because you should not drink, brush your teeth, or cook with the well water until it is tested and found suitable.** Complete the following during your evacuation planning:

During Potential Evacuation Preparations

1. Locate a nearby water testing lab to obtain sample collection bottles and instructions. The local health department may be able to test your water for contamination. If there is not a health department near you, your county Extension agent can put you in touch with laboratories that test water quality.
2. Locate the log/well report completed when the well was established and store a copy of it in a safe place that will be accessible if you evacuate.
3. Locate contact information for licensed well drillers in the area. Contact a driller before evacuating if you think your well will need service immediately after the flood.
4. Fill up the pressure tank as much as possible.
5. Turn off the electricity to the well.
6. If you have an aerobic septic system, turn off the electricity for the system. No special preparations are recommended for conventional septic systems.
7. If you plan to attempt to disinfect your well yourself upon your return, have these basic shock chlorination materials available before the flood because these supplies may be difficult or time-consuming to acquire following a flood:

    - Instructions on how to shock chlorinate (p. 2 -5 of this fact sheet)
    - Unscented, liquid bleach
    - Clean five-gallon bucket and five gallons of uncontaminated water
    - Garden hose that reaches from an outdoor faucet to the well
    - Protective goggles and gloves
    - Wrench for well access
    - Funnel
    - Hose
    - Sample collection bottles from local water testing laboratory

8. Learn how to bypass water softeners and household water filters if any are attached to your water system. Read and have the manufacturer's instructions easily available on how to disinfect bypassed water softeners and household water filters.

Upon Return

It is highly recommended that a licensed water well driller be hired to shock chlorinate the well if it has been flooded. A water well driller will have access to more effective products and will have equipment and experience that a typical well owner will not have. However, if you plan to attempt to disinfect your well yourself, follow the instructions on p. 2-5 of this fact sheet.

How to Shock Chlorinate a Water Well

If your well 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.

If your well is contaminated, alternative options include using bottled water, water boiled for five minutes, or water from a source you know is not contaminated.

The water in your well is most likely contaminated after a flood. Ingesting or being exposed to contaminated water may cause illness. However, these instructions on how to shock chlorinate your well system may solve the issue.

Do not use contaminated water for:

- Drinking
- Cooking
- Making ice
- Bathing in any form
- Washing clothes or dishes

Contaminants could include:

- Animal waste
- Sewage
- Treatment plant wastewater
- Nearby flooded septic system matter

To ensure a safe and effective disinfection process, follow these directions step-by-step:

PREPARATION PHASE

Tools Needed

- A garden hose long enough to reach from an outdoor water faucet to the well
- Protective goggles/gloves
- Clean five-gallon bucket
- Five gallons of water
- Funnel
- Unscented household liquid bleach less than six months old
    - How to calculate how much bleach you need:

- The amount of bleach to be used in the disinfection process will depend on the amount of water in the well.
- To calculate the water volume, subtract the static water level (distance from land surface to the water in the well) from the total depth of the well. If you don't know the static water level, just use the total measurement of the well depth.

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

Depth Of Well	**Diameter or Size of Well Casing**						
	2 in	**4 in**	**6 in**	**10 in**	**18 in**	**20 in**	**24 in**
10 feet	1.6 gallons of water in well 1 ounce Bleach	6.9 gallons of water in well 4 ounces Bleach	11.5 gallons of water in well 9 ounces Bleach	41.0 gallons of water in well 1 quart Bleach	132.5 gallons of water in well ½ gallon + 1 pint Bleach	164 gallons of water in well 3quarts Bleach	235 gallons of water in well 1 gallon + 1 pint Bleach
50 feet	8.2 gallons of water in well 5 ounces Bleach	32.7 gallons of water in well 1 quart Bleach	73.5 gallons of water in well ½ gallon Bleach	205 gallons of water in well 1gallon Bleach	663 gallons of water in well 3 gallons + 1 quart Bleach	820 gallons of water in well 4 gallons Bleach	1175 gallons of water in well 6 gallons Bleach
100 ft	16.3 gallons of water in well 1pint Bleach	65.4 gallons of water of in well ½ gallon Bleach	147 gallons of water in well 3 quarts Bleach	409 gallons of water in well 2 gallons Bleach	1325 gallons of water in well 6.5 gallons Bleach	1640 gallons of water in well 8 gallons Bleach	2350 gallons of water in well 11.5 gallons Bleach

*NC DPH recommendations

STEP BY STEP INSTRUCTIONS

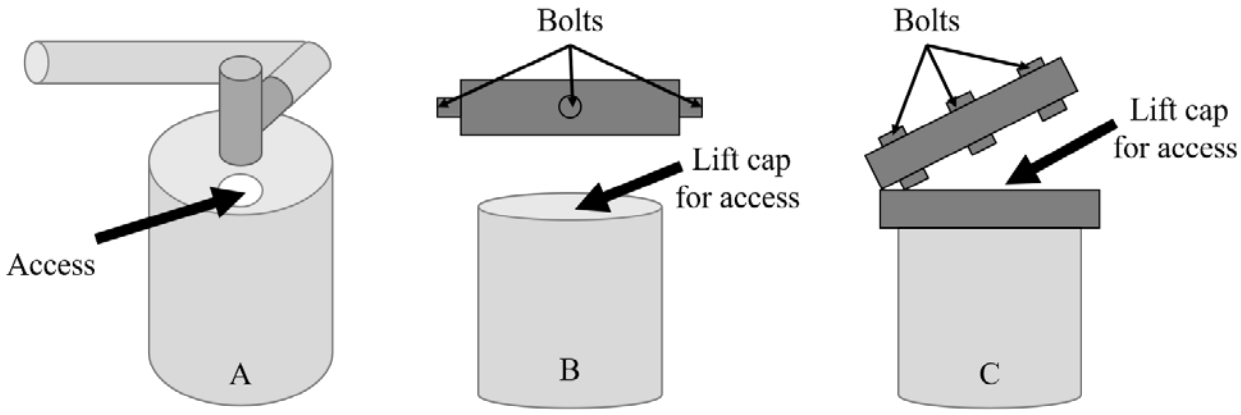
STEP 1 Power Off:

- 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 2 Open the Well:

- Remove all debris near the well. Check the well for damage. Remember, if your well is damaged, this process will not work.
- For a well seal (Figure 1A), remove the threaded well plug for access; for a well cap (Figure 1B) or sanitary cap (Figure 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.



MIXING DIRECTIONS

- Fill the five-gallon bucket three-fourths full of bottled water.
- Refer to Table 1 to determine how much bleach is needed.
- Add bleach to the bucket of water.
- Using the funnel, pour the bleach solution into the thread well plug or well casing.

* Be careful not to splash/spill the solution

STEP 4 Recirculate the Chlorinated Water:

- Turn on the circuit breaker to the pump.
- Connect the garden hose to an outdoor faucet.
- Next, place the funnel into your well's access point and put the garden hose into the funnel.
- Turn the water on and let it run for 30 minutes to circulate the bleach within the well.

STEP 5 Running Chlorine Solution Through Faucets:

- Run the chlorinated water throughout the plumbing system. Start inside the house and work your way out by turning on each tap one at a time until you smell bleach.
- 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 eight hours or overnight.

STEP 6 Flush the Chlorinated Water:

- Run the water through an outside garden hose until you no longer smell chlorine.
- Keep the running water away from your septic system, landscaping, and bodies of water.
- Once the chlorine smell is gone from the well, turn on each fixture inside the house one at a time until the chlorine smell is no longer present.

STEP 7 Disinfect Water and Reconnecting 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. THE WATER SAMPLE IS NOW READY TO BE SENT TO A LAB.

IMPORTANT: Before using the water for drinking, cooking, making ice or preparing food, have the water tested by a state-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.

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.