

Preparing your WELL FOR THE NEXT FLOOD

Before the Flood

How should I prepare my well for a flood?

1. Store adequate bottled water for drinking and cooking because you won't be able to drink, brush teeth or cook with the well water until it is tested and found suitable.
2. Fill up the pressure tank as much as possible.
3. Turn off the electricity to the well.
4. If you have an aerobic septic system, turn off the electricity for the system. No special preparations are recommended for conventional septic systems.
5. If your wellhead does not have a watertight seal, clean off the well casing, cover with a heavy-duty trash bag and secure with waterproof tape
6. Locate:
 - a. A nearby water testing lab to obtain sample collection bottles and instructions. Often, your local health department can test your water for bacterial contamination. If there is not a health department near you, your county Extension agent can help you find a lab.
 - b. The log/well report completed when the well was established and store a copy in a safe place that will be accessible if you evacuate.
 - c. Contact information for licensed well drillers in the area. You can find a list of certified well contractors at www.dph.ncdhhs.gov/programs/environmental-health/north-carolina-well-contractors-certification/find-certified-well-contractor.

What if I must evacuate?

You can take action to better prepare your well for a flood, even as you are making plans to evacuate. Simply follow the steps above and consider buying supplies for when you return. Especially if you plan to attempt to disinfect your well yourself. Have these basic shock chlorination materials available before the flood because these supplies may be difficult or time-consuming to acquire following a flood:

- a. Instructions on how to shock chlorinate
- b. Unscented, liquid bleach
- c. Clean five-gallon bucket and five gallons of uncontaminated water
- d. Garden hose that reaches from an outdoor faucet to the well
- e. Protective goggles and gloves
- f. Wrench for well access
- g. Funnel
- h. Hose
- i. Sample collection bottles from local water testing laboratory.

After the Flood

What should I do after a flood?

1. Do not turn on the electricity to your pump until flood waters recede.
 2. If extensive flooding has occurred, do not drink the water. Use your water reserves and bottled water until you well water has been tested.
 3. Contact a driller/s before evacuating if you think your well will need service immediately after the flood. You can find a list of certified well contractors at www.dph.ncdhhs.gov/programs/environmental-health/north-carolina-well-contractors-certification/find-certified-well-contractor.
 4. If you haven't already, find a nearby water testing lab to obtain sample collection bottles and instructions for bacterial contamination. You cannot see, taste or smell bacterial contamination in your well.
- a. If you live near animal feeding operations, agricultural fields where pesticides are applied or industrial chemical factories, you should contact your local health department for additional testing. Especially if you smell fuel or chemicals in your water.

If there is bacterial contamination, do not use contaminated water for:

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

Use an alternative water source until bacteria is no longer detected in your water. Alternative sources include bottled water, a source you know isn't contaminated or boiling your water for five minutes before use.

It is strongly recommended to call your local health department or a licensed well driller 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.

Whom can I call if I have more questions?

Contact your local health department or a certified well driller for professional assistance. You can find a list of certified well contractors at www.dph.ncdhhs.gov/programs/environmental-health/north-carolina-well-contractors-certification/find-certified-well-contractor.

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



Shock Chlorination

How to do I shock chlorinate my 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.

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

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 (no cleaners added) household liquid bleach containing 5.25% chlorine and is less than six months old.

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

		Well diameter (inches)				
		4	6	8	24	36
Water depth in well (feet)	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

How much bleach do I need to disinfect my well?

- 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 (see Table 1).

Step By Step Instructions to Disinfect Your Well

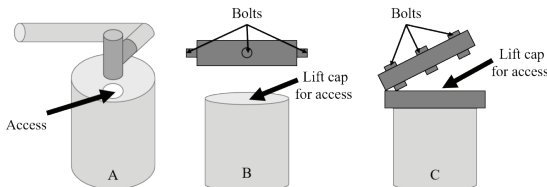
STEP 1 Power Off:

- 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.



STEP 3 – Mixing Directions:

- Fill the five-gallon bucket about three-fourths full with bottled water.
- Look back at 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. If your well is deeper (greater than 400 ft) you may need to run your well longer. Leave the well running after you smell chlorine.

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.

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.



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