

Decontaminating Flooded Wells

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If your well has been flooded, you should assume that the water in it is contaminated. Do not use the well water for drinking, cooking, making ice, brushing your teeth or even bathing until you are satisfied that it is not contaminated.

Floodwater can be contaminated by substances from upstream, such as manure, sewage from flooded septic systems or wastewater treatment plants, and pesticides or fertilizer applied to cropland that was flooded. A septic system near a well also can cause contamination when the soil is flooded. Wells that are inside pits may be flooded even if the surface is not covered with water.

To ensure that your well water is safe after a flood, disinfect it, and then have the water tested to make sure that the pathogens (disease-causing organisms) have been eliminated.

Decontaminating and disinfecting a well. If the well is a shallow, has been flooded by surface water or is in an unconfined aquifer, one of the first steps should be to pump out the well to remove any potential contaminants.

Pump out at least three well volumes of water from a faucet near the wellhead. At a minimum, pump the well for at least 1 hour before beginning the disinfection process. Also flush out household plumbing, including the water heater. Make sure the water is clear and free of sediment.

Although you may contact a well contractor or driller to disinfect the well, in most cases you can do it yourself. For a detailed publication on the procedures for disinfecting a well, see the Texas Cooperative Extension publication L-5441, *Shock Chlorination of Wells*. It is located on the Web at <http://tce-bookstore.org/>, or you may obtain a copy of it by calling your county Extension office.

Be sure to follow the instructions carefully, which include:

- ◆ Turn off electric power to the pump and remove the well cap.
- ◆ Prepare a solution of bleach and water, and pour the solution into the top

of the well. The amount of bleach depends on the depth of water in the well and the diameter of the well casing (which is a steel or plastic pipe placed in a well to maintain the well opening and to serve as the lining to the well).

- ◆ Recirculate the water by connecting a hose to a faucet and spraying the water back into the well for at least 10 minutes.
- ◆ Open every faucet in the system and let the water run until the smell of chlorine can be detected. Then close all the faucets and seal the top of the well.
- ◆ Allow the chlorinated water to stand in the system for at least 12 hours, preferably 24 hours.
- ◆ The next day, operate the pump by turning on all faucets, beginning with those outside, and flushing out the water until there is no chlorine odor.

Testing well water. After disinfection, have the well water tested by a certified laboratory to make sure there is no bacterial contamination. Some county health departments and local hospitals may also test water samples for bacteria. The cost of the test ranges from \$8 to \$30, depending on the lab.

Well disinfection does not eliminate hydrocarbons (fuels, oils), pesticides, heavy metals or other types of nonbiological contamination. If you suspect such contamination because of the nearness of sources for these kinds of contaminants, the water will require special testing and treatment.

The Texas Commission on Environmental Quality has a list of laboratories certified in Texas to analyze drinking water samples. The list is on the Web at http://www.tceq.state.tx.us/assets/public/compliance/compliance_support/qa/sdwa_lab_list.pdf.

For more information, call Texas Cooperative Extension at 979-845-2425.

Damage. Flooding can also damage the well itself. Fast-moving floodwater can carry debris that could dislodge the well-construction materials or distort the casing. The coarse sediment in floodwater also can erode the pump components.

After a flood, inspect the well for physical damage and look for signs of leakage. If it appears damaged, consult a licensed water well contractor to determine whether repairs are needed.

Also, flooding can damage the well pump and electrical systems. If the pump and/or electrical system has been under water, **do not turn on the pump.** There is a potential for electrical shock or damage to your well or pump. Once the floodwaters have receded and the pump and electrical system have dried, have a qualified electrician check the wiring system.

Obtaining clean water. If your well has been flooded, find an alternative source of water for drinking, cooking and washing. For example, you may be able to get water from a public water supply or from a neighbor's well if you know it is safe. Buying bottled water also is a good alternative.

If you can't find a convenient source of safe water, boil your well water for 5 minutes before using it.

Upon returning to your home after a flood, you may be eager to use the well water. But remember: Flooding presents special health risks and requires extra attention to protect your family's health.

This publication was adapted from a factsheet developed by Jane Frankenberger and Brent Ladd, Purdue University. Original material authored by Karen P. Vance, Consumer Education Specialist, University of California Cooperative Extension.

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