



Facts About ...

WELL PROTECTION IN FLOOD PRONE AREAS

This Guidance is intended to supplement flood precautions issued by local health and environmental departments. It is recommended that any reworking of a well terminal and well disinfection be performed by a licensed well or pump contractor because it is difficult for the private owners to adequately disinfect wells and safely work with deep set pumps.

WHO NEEDS TO BE CONCERNED?

Any property owner who has a well in a flood prone area.

FLOOD PROOF WELL CAPS

If your well is located in a flood prone area, the well should be fitted with a flood proof well cap. Flood proof well caps are watertight and prevent floodwaters from entering the wellhead.

WHAT TO DO IF YOUR WELL IS FLOODED:

If you have an individual well and know or suspect that floodwaters have entered your well, you should:

DO NOT TURN ON THE PUMP - There is a danger of electrical shock and damage to the well and pump if they have been flooded.

DO NOT DRINK OR WASH WITH THE WELL WATER UNTIL DISINFECTED - People drinking or washing with water from a private well that has been flooded and not properly disinfected, risk getting sick.

- **Assume the well is contaminated** - Assume that the well is potentially contaminated with bacteria and needs to be disinfected. Until disinfection is complete and testing shows the water to be safe, it is best to use a safe source of water. If you know that the flood waters were contaminated with petroleum products (oil sheens or displaced storage tanks in the area), we advise that the well be tested for petroleum contamination prior to use.
- **Check the electrical components** - It is recommended that a qualified electrician, well contractor or pump contractor perform an electrical system inspection. The electrical system must be dry to function properly.
- **Pump Operation** - The pump and check valves can become damaged or malfunction if clogged with sediment from a flood event. Pump operation

should be checked and damaging debris removed prior to sustained use of the pump.

- **Pump off muddy water** - If the water is muddy or cloudy, pump the well until the water runs clear. Do not discharge the water into your septic system.
- **Perform an Emergency Disinfection of the Water System** - A reminder; wells are best disinfected by a well or pump contractor because it is difficult for the private owner to thoroughly disinfect wells. However one method that can be tried is:
 1. Mix two quarts of liquid chlorine laundry bleach with 10 gallons of water and pour the contents down the well. The depth and diameter of your well may effect how much chlorine bleach is needed. A concentration of 50 to 100 parts per million is necessary. Pump water through all outlets in the plumbing by opening faucets until the water smells of chlorine. If it does not, add more chlorine bleach to the well. Please note that chlorine is much more effective as a disinfectant if the pH of your water is between 6 and 7. If you do not know the pH of your water or the pH is above 7 we recommend you contact a licensed contractor to assist with disinfecting your well.
 2. Connect a garden hose to an outside tap and recirculate water back into the well washing down the inside of the well casing in the process. With all faucets off, let the system sit for 24 hours.
 3. Flush the lines, running most of the water through a garden hose. Adjust the flow of water faucets or fixtures that discharge to septic tank systems to low flow to avoid overloading the septic system.
 4. After all the chlorine has been flushed out of the system, have the water sampled and tested by an approved laboratory or health department. If the testing indicates contamination, do not use the water for any purpose unless the water is first disinfected. If testing indicates no contamination is present, water should be used only for bathing and washing. The water should not be used for human consumption until consecutive samples spaced two weeks apart indicate no contamination is present.

CAUTION: Because of the extensive flood area and the speed and direction of ground water flow, your well may not be a safe source of water for many months after the flood. The well can become re-contaminated with bacteria or other contaminants. It may be necessary to take long-range precautions, including repeated testing, to protect the safety of drinking water.

SAMPLING AND TESTING THE WELL WATER

Contact the local health department or a certified laboratory to have your well sampled for contamination.

For a listing of state certified private laboratories, visit the Maryland Department of Mental Health and Hygiene web site at:

www.dhmh.state.md.us/labs/html/WtrCrt/watercert.htm

FOR MORE INFORMATION

For further questions regarding individual wells, contact your local health department or the MDE's On-Site System Division at (410) 537-3778.

Questions regarding public water systems and certified laboratories can be referred to MDE's Water Supply Program at (410) 537-3702.

For questions regarding petroleum contamination and spills please contact MDE's Oil Control Program at (410) 537-3442.

MDE's emergency response number to report any type of pollution event is 1-866-MDE-GOTO.

For additional information on emergency disinfection of wells see:

<http://www.epa.gov/privatewells/whatdo.html>

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