



Water Well Disinfection

If a well has tested positive for coliform or other bacterial contamination, a simple and relatively inexpensive procedure known as "shock chlorination" can be performed to treat it. Shock chlorination should effectively kill any dangerous bacteria in the water supply, but you should have your water retested before using it for drinking or cooking purposes. Chlorination will act to reduce high iron and manganese levels or kill parasitic infestations. The Office of Drinking Water and Environmental Health can advise you on procedures to treat those problems.

Procedures for shock chlorinating a well

Mixing a chlorine solution

Chlorine is a universal disinfecting agent used in water works. Chlorine is highly toxic to bacteria at concentrations of 200 milligrams per liter and above. "Shock chlorinating" a well involves adding a chlorine solution to the water supply so it reaches a concentration of 200 milligrams/ liter and then circulating it to disinfect all parts of the water system.

Chlorine is available in several different forms. The two most often used for well disinfection are dry chlorine and liquid household bleach. Dry chlorine contains about 65 percent calcium hypochlorite; bleach contains about 5.25 percent sodium hypochlorite. When used properly, both are equally effective for disinfecting wells.

To mix an effective chlorine solution, add bleach or dry chlorine to five gallons of water in a clean, non-metallic container. See below for the correct amounts to add.

The quantities of liquid household bleach and dry chlorine required for water well disinfection
(for each 10 feet of water depth in well)

Well Diameter	Ounce(s) 65% Hypochlorite	Pint(s) 5% Bleach
2"-8"	1	1
10"-14"	3	3
16"-20"	7	7
22"-26"	12	12
28"-30"	16	16
36"	24	24

Chlorinating the water supply

After mixing the chlorine solution, pour it directly into the well, splashing the well pump, piping, casing and other well equipment as much as possible. Now attach a hose to a nearby faucet and direct it back into the well. Open the faucet and use the hose to thoroughly wash down the interior of the well. This will recirculate the now-chlorinated water; you should leave the hose running for at least an hour or until the strong chlorine odor can be detected.

Now open all taps (inside and outside faucets, hydrants, etc.) in the system. Leave the taps running until you smell chlorine, then shut them. This will ensure that chlorinated water reaches all parts of the water distribution system.

Once the well water has been chlorinated and thoroughly recirculated, it should be allowed to remain in the system for at least 24 hours. Reseal the well and wait for a full day before proceeding.

After the 24 hours is up, you need to flush the system of chlorine to avoid overloading your septic tank. (Chlorine will kill bacteria that play an important part in breaking down waste in your septic tank.) To purge your water system of chlorine, open one outside tap that drains into a field, ditch or other low lying area (don't run chlorinated water into a lake, stream or anything that drains into your septic tank). You'll probably want to use a hose; chlorine can kill grass and shrubs.

Leave the tap running until you can't smell the chlorine anymore. Wait about an hour and then run the water again to make sure no chlorine odor remains. Your water supply has to be completely free of chlorine before it is retested, because chlorine residue will interfere with lab results.

Follow-up procedures

In serious cases of coliform contamination, more than one treatment may be necessary. You should always get your water retested after shock chlorination before using it for drinking or cooking purposes.

Recurrent coliform contamination may indicate a problem with your well construction or location. Contact the Office of Drinking Water and Environmental Health or a licensed well driller for advice.

Iron and sulfur bacteria are more resistant to shock chlorination than other types of bacteria and you may have to repeat the procedure several times. These types of bacteria contamination initiation tend to recur, so periodic chlorination at lower concentration may be needed to control the problem.

Shock chlorination should also be performed whenever repairs or modifications are made to the well system.

For more information on well disinfection or other water-quality issues, please contact:

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