



Well Water Cleaning

Chlorinating or “shocking” the system is the standard method of cleaning a well. Bear in mind that the purpose of this operation is to clean the system to a point where the water that is produced will pass a laboratory analysis. For this procedure to be successful, the entire system must be cleaned at the same time to avoid rapid recontamination. The theory is simple: dump bleach down the well to kill the bacteria. However, the actual procedure is time consuming and needs to be done in a systematic way. Professional Home Inspection Service provides a chlorination service for its clients, if needed, but handy homeowners may be able to perform the service for themselves.

Prior to cleaning the system, purchase an inexpensive pool chlorine test kit. This will be needed to tell when all the chlorine has been flushed out of the system before you re-test. Note: you can't rely on smell for this. Start the process by removing the well cap and pouring in one gallon of bleach. If the well head is not exposed (buried), it will need to be dug up and extended above grade for this procedure, and to make the well accessible for future routine maintenance. If the water source is a spring, lake, shallow well or a hand-dug well, skip this procedure and install a water purification system. By definition, these types of water sources are providing “surface water” which will inevitably include bacteria. There is no way to clean them, so continuous purification will be necessary.

Once the bleach is in the well, it needs to be pumped through the entire system. Open a hose bib until you can smell bleach, shut off, then open each tap until you smell bleach. There's no science regarding the amount of bleach to add. If you can smell it at the fixtures, there's enough. If you can't smell bleach after running the water for about 30 minutes, add another gallon. In a small percentage of wells, the aquifer is flowing so rapidly that it's not possible to chlorinate. Any bleach that is added is immediately swept away. In these systems, it's necessary to install a water purification system.

Once chlorine is detected at each fixture, attach a potable water hose to the hose bib and use it to spray down the interior of the well casing. This will disinfect the entire casing, not just the portion below the current water level. Don't forget to spray the cap.

Once the well casing is clean, put the cap back on and let the entire system sit overnight. You'll need to have bottled water on hand for drinking, cooking and washing. The chlorinated water



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can be used for flushing the toilet, but be careful. The bleach may irritate skin or damage clothing.

It's important to note that chlorinating the well will rile up the water and a lot of sediment and rust flakes will come out through the faucets. Aerators should be removed during this procedure to avoid clogging. Sediment filters should be replaced when the cleaning process is complete.

Flush Out The System

After eight hours or overnight, the chlorine has to be flushed out. This can be a multi-day process.

First, hook up a hose and flush the chlorine from the system. The chlorinated water should be discharged to an area where it won't do any harm, e.g., away from sensitive vegetation and not into the septic system. This should be run until the water is clear and any chlorine odor is minimal. Then run water at each tap until the chlorine odor is gone, and verify with the chlorine test tablets.

In practice, removing all the chlorine can take a couple of days or longer. The best strategy is to pump the water out of the well quickly, depending on the capabilities of the well.

Often the well is pumped down for a couple of hours, allowed to recover, and pumped down again until no chlorine is detected with the pool test kit. Even if the well is pumped "dry," there may still be many feet of chlorinated water left in the well below the pump level.

There should be no concern about burning out a modern submersible pump during this process. These pumps are rated for continuous duty. Also, the motor remains submerged. However, the water discharge should be monitored for excessive sediment as the level is being drawn down, and should be stopped if necessary.

Keep in mind too that jet pumps may not be rated for continuous duty and should be monitored for overheating. If a well with a jet pump is drawn dry it will need to be primed. Have clean water handy for priming.



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Re-test After Cleaning the System

Once the well system has been cleaned by chlorinating, the water should be re-tested. If it comes back from the lab with a seal of approval, proceed to the final step-monitor and maintain. If the test fails, the cleaning process should be repeated.

We often find that the first chlorinating is done in a casual manner. But once the well has failed a second time, a more thorough cleaning job is done with better results. Also, some of the bacteria can resist the chlorine for a period of time, and often a second cleaning eradicates this problem. If a second cleaning doesn't work, installation of a purification system is recommended.

Monitor and Maintain the Well

Simply passing a single coliform test tells us nothing about the long-term quality of the water. The source for the initial contamination may very well remain. Sources of contamination may include a poor seal at the cap, a poor seal at the pitless adapter, a leak in the piping between the well and the house, and poor grading or ponding water around the well casing. The only way to have confidence in the potability of the water supply is through an on-going testing program.

This program should include regular testing and keeping a running record of the results. There are no state-mandated testing requirements for private-use wells in New York, although the state has a lot of information available in a publication called, "Rural Water Supply", and annual testing is recommended.

Wells used in commercial facilities, such as restaurants, are required to be tested for coliform bacteria quarterly and for nitrates and nitrites annually

For a private well that has failed a potability test, or for a well that does not have a documented testing history we recommend testing once a week for a month to obtain some initial confidence in the water quality and then following the quarterly schedule previously discussed.

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If the testing program shows that the well doesn't stay clean for a reasonable amount of time, we recommend that a water purification system be installed.

Estimated costs for a system are \$900 to \$2000. Alternately a new well may be an option if the aquifers are not the contamination source. Maintenance of the system includes changing filters as necessary and cleaning the well when testing dictates.

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