



Humboldt County Department of Health and Human Services

DIVISION OF ENVIRONMENTAL HEALTH

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Procedure for Disinfecting Wells and Water Systems

Although generally not harmful to humans, coliform bacteria do not belong in drinking water. When testing reveals their presence, there is likely an opening in the water system that can admit other more dangerous bacteria, viruses, or parasites. If the opening (or other contamination source) can be located and corrected, the microbes can be eliminated by disinfecting or “shocking” the entire water system. A well should also be disinfected following repair, maintenance, or replacement of the pump or storage tank. A new well should be disinfected following development, testing for yield and installation of the pump.

To disinfect a water system, we recommend that you take the following steps:

1. Estimate the total amount of water in the system. Include the water volume in the well, storage tank(s), and the pipes (pipes will hold around 50 gallons). You will need to add unscented Clorox or Purex bleach (brands approved for drinking water) to the well at the ratio of one quart for every 500 gallons of water in the system. The following table will help you estimate how much water is in your well:

Well casing diameter (inches)	Water volume per foot of water depth (in gallons)
4	0.65
6	1.47
8	2.61
12	5.88

2. Dissolve the chlorine into a clean 5-gallon plastic bucket of fresh water. Remove the threaded inspection plug, or other opening, from the cap on top of the well. Place a funnel in this entry port and add the chlorine solution. For systems with storage tanks, add part of the solution to the tank.
3. Turn on all of the faucets inside the house(s), one at a time, until you smell chlorine at the faucet furthest from the water main. Faucets and valves will include sinks, showers, dishwasher, toilets, outside hosebibs, etc. Make sure that you run both hot and cold water at each tap so that chlorine circulates through every pipe in the building. This will ensure that chlorinated water has entered the entire system. (If you don't smell a strong chlorine odor at each site, add more chlorine to the well). Also, connect a garden hose to a nearby faucet and wash down the inside of your well with the chlorine-treated water.
4. Close all outlets and allow water to remain in all water lines and well, and leave the water off for at least 12 hours for the chlorine to “work”. Do not use the water for any purpose at this time.
5. Next, you will need to “dispose of” the chlorinated water by opening the outside faucets. (Do not use the water for drinking or bathing). Flush through the outside taps only to avoid overtaxing the septic system. This can take 3-4 hours for a typical well. To keep the pump from overheating, turn off the water if the flow slows down, wait a few minutes, and resume flushing. The chlorinated water can kill plants and aquatic life, so use a hose to direct it away from lawns, gardens, storm drains, streams, etc.
6. **Wait at least one week before you retest the water for bacteria** to make sure that the disinfection has been effective over the longer term. In some cases, one treatment will not be enough, and you will have to disinfect your well a second or even a third time.

What do the test results mean? The absence of coliform bacteria is usually a sign that the problem has been corrected. Routine bacteriological testing on a quarterly or at least a yearly basis is recommended. If bacteria are still present, the water must be considered unsafe to drink. At this point, we recommend that you contact a licensed well driller or other professional to evaluate your system.

(Please call Environmental Health if you have any questions on the above procedures or other water quality issues.)

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