



# Safe Water

**Macon County Health Department  
Environmental Health  
1221 E. Condit St., Decatur, IL 62521**

(Information and Disinfection Procedures)

### A SAFE WATER MAY BE OBTAINED FROM:

1. A city water supply by a piped connection or by hauling water in clean, covered containers.
2. From a well that is properly located and constructed to prevent pollution.
3. From a cistern constructed to protect the water from contamination.

### WHAT CAUSES POLLUTION?

Rain, waste pumpage, and shallow ground water contaminated by filth from shoes, animal wastes, bird droppings, etc., wash into the well.

Sewage may seep through the ground and reach the well if privies, septic tanks, and tile drains are too close.

### HOW DOES IT ENTER?

Wood platforms, manhole covers, or other improper well seals, and cracked concrete all permit seepage directly into the well.

Shallow ground water within 10 feet of the surface is usually contaminated and may seep through cracks in the well lining.

### TO FIX THE WELL:

1. Make the first 10 feet of the well lining or casing absolutely water tight. The space outside the casing should be filled with water tight cement grout or clays with similar sealing properties.
2. Replace all wood platforms, manhole covers, etc., with a sanitary seal. For large diameter dug wells a reinforced concrete slab extending at least 2 feet beyond the sides of the well should be provided.
3. Every cover and pump platform should be water tight and elevated above the adjacent ground level.
4. Keep all septic tanks at least 50 feet, privies 75 feet, and all seepage pits and disposal fields at least 100 feet from the well.
5. Disinfect the well with a chlorine solution such as laundry bleach.
6. Allow 5 to 7 days for chlorine to work its way out of system. Then, obtain a laboratory prepared sample bottle and collect a sample of water from the well for bacterial analysis.

### DISINFECTION PROCEDURES

A new well, one which has been recently repaired, or cleaned, or one which has unsatisfactory laboratory analysis should be thoroughly disinfected. This may be accomplished by the use of ordinary laundry bleach solutions available at most grocery stores.

Diameter of Well:	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	22"
Cups of Bleach Per 10' depth:	1/4	1/4	1/2	1/2	3/4	1 1/4	2	2 1/2	3 3/4	4	5	6
Diameter of Well:	2'	3'	4'	5'	6'							
Cups of Bleach Per 10' depth:	7	17	30	47	68							

1 cup = 8 ounces

4 cups = 1 quart

8 cups = 1/2 gallon

16 cups = 1 gallon

First divide the depth of the water in your well by 10. Then multiply this number by the number directly under your well's diameter in the table above. This gives you the CUPS OF BLEACH RECOMMENDED TO DISINFECT YOUR WELL.

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**WELL DISINFECTION PROCEDURES** (continued)

For instance, if you have a 14" diameter well that is 62 feet deep, first divide by 10. This gives you approximately 6. Then look at the table under 14" and you will find 2 1/2. Multiply 6 by 2 1/2 to get 15. 15 cups of bleach will be needed to disinfect a well this size.

- Mix this amount in about 10 gallons of water
- Pour this solution into the well
- Connect one or more hoses from faucets on the discharge side of the pressure tank, (example: outside house faucet) put the other end back into the well and open faucet. This recirculates the water back into the well. Do this for at least 15 minutes. Then open each faucet in the system until a chlorine smell or taste appears. Close all faucets.
- Let stand for several hours, preferably overnight or even 24 hours.
- After standing, operate the pump, discharging water from all outlets until the chlorine odor and taste disappears.
- After 5 to 7 days of water usage, collect a new water sample in a laboratory prepared bottle for retesting. DO NOT SUBMIT SAMPLE IF IT SMELLS OF CHLORINE; wait until all traces are gone.

**CAUTION: When working with chlorine, persons should be in the open or in a well-ventilated place. Do not allow a strong chlorine solution to remain in contact with the skin or clothing.**

**EMERGENCY DISINFECTION:**

Vigorous boiling for ONE full minute will kill any disease-causing bacteria in water. The flat taste of boiled water can be improved by pouring back and forth from one clean container to another, by allowing it to stand for a few hours or by adding a pinch of salt for each quart of water boiled.

Household bleach may also be used in emergencies. If the water is clear, use 5 drops of bleach per gallon; if the water is dirty, use 10 drops per gallon (Cheesecloth is excellent for straining.) Mix bleach in water and let stand at least 30 minutes before use. Tincture of iodine may also be used. Add 10 drops of iodine per gallon if the water is clear; 20 drops if the water is dirty. Again, let stand for 30 minutes before use. A slight taste of chlorine or iodine should be noticeable, but this is harmless and assures the water has been purified. **THESE ARE EMERGENCY MEASURES, AND SHOULD NOT BE COUNTED ON AS LONG-TERM REMEDIES.**