

Explanation of Well Water Results and Disinfection of Contaminated Wells

Private Well Water Results

Protecting your private water supply from contamination will reduce your risk of developing water-borne diseases and other illnesses.

What do my results mean?

Bacterial Results

For Drinking Water:

- Satisfactory (<1 Coliform/100ml)
- Unsatisfactory
 - Coliform Bacteria present
 - E. coli and coliform Present

“**Satisfactory**” means your water is free from coliform and *E.coli* and is safe to drink.

“**Unsatisfactory**” or “*E. coli /coliform present*” means the water is contaminated and is not safe to drink.

Coliform Bacteria

Coliform bacteria occur naturally in soil, on plants, in lakes and streams and in the intestines of humans and animals. Most coliform bacteria do not cause disease.

When coliform are found in drinking water, though, it means the water supply is contaminated and other disease causing bacteria may be there as well.

E. coli

E. coli is a member of the coliform group of bacteria and is found only in the intestines of warm-blooded animals, including humans.

E. coli found in drinking water means the water has been recently contaminated with human or animal waste.

Recommendations

Use bottled water for drinking, cooking, or brushing your teeth or disinfect your water to make it safe to drink.

When Should a Well Be Disinfected?

Well disinfection should be performed:

- When water testing indicates the presence of coliform bacteria.
- When the well has been near flood waters.
- After installation or repair of plumbing pipes and fixtures, such as softeners, faucets or filters.
- After well or pump repairs.
- When iron or sulfur bacteria reduce the water supply capacity of the well or cause taste and
- Odor problems.

- During startup of seasonal wells where plumbing, wells, or pumps have been disconnected or
- The water system has otherwise been drained or opened.

Well disinfection will not solve the following problems:

- When contamination is originating from a continuous source such as a septic system or an animal feedlot.
- When a well or plumbing system is improperly constructed, located, or damaged and in need of repair (disinfection should follow repair work).
- If the contaminant is nitrate, arsenic, fuel, pesticides or other chemicals.

Disinfecting Your Well

Contact your well or pump installer for help if you do not feel comfortable doing it yourself.

To sanitize the well yourself, follow the instructions below.

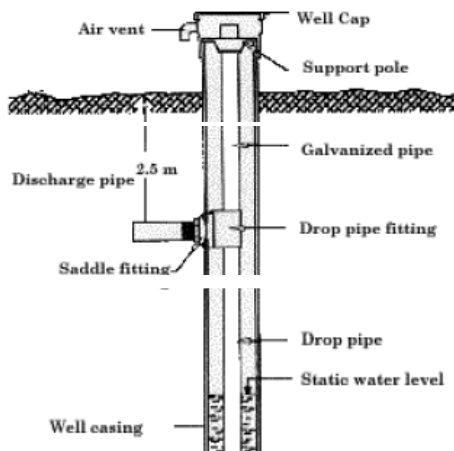
Important: Electrical safety

Turn off electrical power to the pump by turning off the circuit breaker or unscrewing the fuse. If the breaker or fuse box has a lockout hasp to prevent someone from accidentally turning on the water pump circuit breaker, use it. Power should not be turned back on until after the chlorine solution has been placed in the well.

1. Mix unscented bleach required from the table below with one gallon of water and pour it into the well. If possible, wash down the sides of the casing and the pipe from the pump.
 - If the unit is a pitless adapter, remove the cap to add bleach mixture.
 - If the well has a sanitary seal, remove the plug or breather pipe to add the bleach mixture.

Table for a 50 mg/L chlorine residual
Using 5.25% to 6% Liquid Laundry Bleach
(Unscented)

Depth of Water Well	Well Casing Diameter				
	4 inch	6 inch	8 inch	10 inch	12 inch
100 ft.	1 cup	2.5 cups	1 qt.	0.5 gal.	0.75 gal.
200 ft.	2 cups	5.0 cups	2 qt.	1.0 gal.	1.50 gal.
300 ft.	3 cups	7.5 cups	3 qt.	1.5 gal.	2.25 gal.
400 ft.	4 cups	10.0 cups	4 qt.	2.0 gal.	3.0 gal.
500 ft.	5 cups	12.5 cups	5 qt.	2.5 gal.	3.75 gal.
600 ft.	6 cups	15.0 cups	6 qt.	3.0 gal.	4.25 gal.



Place a large clean bucket near the well. Add 1 gallon of water and the amount of bleach indicated in the table and mix thoroughly.

For **wells greater than 100 feet** deep or with well casing diameters greater than 6 inches, mix the bleach with 2 gallons of water. For wells **greater than 200 feet** deep or with well casing diameters greater than 6 inches, increase the amount of bleach proportionately. After this solution is poured into the well, it will provide a chlorine concentration of at least 50 parts per million.



In situations where an initial disinfection has not worked, (considerable iron or other solids in the well or a significant nuisance bacteria problem) a more concentrated chlorine solution may be used. Multiply the quantities of chlorine listed in the table by four and mix with 4 gallons of water (for example, a 4-inch diameter well that is 51 to 100 feet deep would need 4 cups of bleach mixed with 4 gallons of water). This will provide a chlorine concentration of at least 200 parts per million in the well and water system.

Note: If the chlorine solution is too strong, the effectiveness of disinfection will be reduced. If the chlorine concentration greatly exceeds 200 parts per million, it can make the water too alkaline and reduce the effectiveness of the disinfection process.

Warning: If your well has not been disinfected for many years, it may have considerable scale built up. Disinfecting with a strong chlorine solution can

dislodge this scale and plug or damage your pump, and cause problems elsewhere in the plumbing system. You may wish to begin with a weaker solution of chlorine. If the water runs red or brown, pump it out on the ground surface without recirculating it back into the well. After the color gets lighter, mix a new chlorine solution batch and begin the process again.

2. Wait 15 to 30 minutes, then go to the outside faucet nearest the well, and begin running water until you smell bleach. This can take an hour or more. Turn the faucet off.
3. Run each cold water tap inside the house until you smell bleach.
4. Do not use the water for at least 4 hours, preferably overnight.
5. After a minimum of 4 hours, run an outside faucet until the smell of bleach is gone, and then do the same with all indoor faucets.
6. When the bleach smell and taste disappear, contact the Christian County Health Department and have your water retested or come in to get a water test kit.
7. Please allow for 5 days following treatment to resubmit sample.

What should I use for drinking water in the meantime?

You can treat contaminated water to make it safe to drink. In a clean pot, bring water to a full bubbling boil for 3 minutes. Allow it to cool. Shake it or pour it from pot to glass to remove the flat taste.

OR

Mix 1/8 teaspoon unscented liquid laundry bleach in 1 gallon of water, and let it stand for at least 30 minutes before drinking.

NOTE: If your tap water is muddy, pour one gallon into a container and allow it to settle. Then pour the water into a clean container with 1/4 teaspoon liquid laundry bleach. Let it sit one hour before using it for drinking, cooking or brushing teeth.