

Well Water Sampling

How to Take a Water Sample

Carefully read the instruction under the heading *Collecting your Water Sample* in the water bottle kit before taking your well water sample.

To determine your true bacterial water quality a series of three samples taken one to two weeks apart will help determine the safety of your water over time. Well water quality may fluctuate seasonally so we recommend sampling in the spring, summer and fall.

Interpreting Your Well Water Test Results

Ideally there should be no bacteria in your well water supply however having 5 or less total coliform is acceptable based on taking three samples. There should never be E.coli in your well water. If your well water samples has over 5 total coliform and more than zero E.coli it is unsafe to drink. If you have unacceptable levels of bacteria in your well water it should be boiled before consumed or you can use commercially bottled water.

Sometimes on your water sample report you may find that the Total Coliform and E.coli section are reported as overgrown or O/G. This means that the test was overgrown with non-coliform bacteria making the number of total coliform or E.coli present in your water result unclear. If you receive a report where your sample is overgrown it is unsafe for drinking and should be boiled before consumed or use commercially bottled water.

Coliform organisms – do not normally grow in well water, because the water is cold (10°C or 50°F) and either alkaline or acidic (pH). The earth has the ability to filter bacteria out as the water moves through the ground. However, once allowed into the well, coliforms will survive for a long time.

E. coli (*Escherichia coli*) – are bacteria that are found in the intestines of warm-blooded animals like dogs, cats, birds and humans. E. coli is a member of the Coliform family of bacteria. Their presence in the well water may indicate fecal contamination from a human or animal source. There are numerous strains of these bacteria, some of which are very harmful.

If you have unacceptable levels of bacteria in your well you should take precautions as indicated below and avoid drinking the water. If any family members have consumed the water and have become ill with stomach cramps and diarrhea consult your health care provider and inform them of your test results.

Precautions to take When Your Water is Unsafe to Drink

When your water has bacterial contamination and it's unsafe to drink we recommend the following drinking water precautions:

1. Boil water for one minute at a rolling boil and cool before use or you may wish to use commercially bottled water.
2. Cooking foods at normal cooking temperatures will make the water safe. When washing off fruits and vegetables, making ice cubes, coffee in a percolator or other food processes that use water, be sure to boil the water first and cool it or use bottled water.
3. Bathing in this water is safe as long as you do not drink the water. Babies and small children should be supervised during a bath, do not let your child put water or a wet wash cloth in their mouth. You may wish to sponge-bathe your child with safe water.
4. Brushing your teeth/dentures should be done with safe water.
5. If your dishwasher has a hot/sani-cycle then it can be used, as it safely disinfects dishes. If it does not have this setting, after the final cycle, soak dishes for 1 minute in a solution of 30ml (1oz) of bleach mixed with 13.5 litres (3 gallons) of lukewarm water. Let dishes air dry.

You may still use the water for household activities such as doing your laundry or cleaning.

Fixing the Problem

Sometimes well water contamination can be fixed, check to see if you have a vermin proof cap. This type of well cap will prevent pests such as insects, rodents and other small animals from getting into your well. The cap is two pieces; it has a rubber gasket and is held together with bolts. If you have the single lid style of well cap on your well it is recommended that you upgrade your well cap. These well caps can be purchased through a well driller.

Consult a local well driller. There may be a problem with the well that can be fixed. Only licensed well drillers are legally able to drill or conduct remedial work on a well.

Take a look at the grading around your well, water should not be allowed to pool around the well casing that comes out of the ground. Ensure that soil around your well creates a slope so that water drains away from the well.

Do not use your well casing to tie pets. If you have pets around your well move them to another location away from your well, be sure to clean up animal faeces regularly in your yard. Ensure livestock and backyard chickens are located away from the well.

Disinfecting Your Well Instructions

If your water sample shows bacteria in your well, a good first step in trying to solve the problem is to disinfect your well. Disinfecting a well will kill bacteria that are present in your well water and in the plumbing of your home. After completing the disinfecting process for your well we recommend that you take three samples a week apart to see if the problem has been solved. The first resample is likely to be free of bacteria, but the additional samples are required to determine if the supply is stable. It is important to keep boiling your water for one minute at a rolling boil until you know your water is safe to drink.

- Remove the cap from your well
- Mix regular household bleach with water and pour directly into your drilled well. The amount of bleach depends on the depth of your well. You should use 150 ml (5oz) of bleach to every 7.5 M (25 ft) of water depth in your well.
- Drain water heater and remove or bypass carbon filters.
- Open all taps one at a time and let water run.
- Turn off taps when a bleach odour is noticed and let stand for 12 hours.
- Drain the water system to remove all chlorinated (bleach) water. Avoid draining this water into the septic tank, use a garden hose attached to an outside faucet.
- Resample your well water 48 hours later. If satisfactory, take 2 more samples 1 week apart to ensure water remains satisfactory.

Sample your well water on a regular basis.

Treatment Systems

If after disinfecting your well and resampling your well water you find that you still have bacteria in your well then we would recommend that you install a water treatment system. Installing a drinking water treatment system will make your well water safe to drink. You should consult with a water treatment company to see which type of system is best for your water quality issues at your home or business. For each water treatment system to remain effective, it must be installed, operated and maintained as instructed by the manufacturer.