



Understanding Your Water Results

BACTERIOLOGICAL RESULTS	CHEMICAL RESULTS
What type of bacteria do we look for?	What chemicals do we look for?
<p>Bacterial testing of water involves looking for groups of micro-organisms called indicator bacteria :</p> <p>Total Coliforms which indicate if the water has been disinfected adequately E. coli which indicates if the water is contaminated by bacteria of faecal origin.</p>	<p>Our routine analysis consists of:</p> <ul style="list-style-type: none"> • Chlorides (salts) • Hardness (calcium carbonate) • Nitrates (a chemical pollutant found in well water) • pH (measure of alkalinity/acidity)
What is an acceptable sample bacteriologically?	What do these chemicals indicate?
<p>An acceptable sample result would be:</p> <p>Total coliforms: <4 (less than 4) E. coli: <1 (less than 1)</p> <p>This indicates that coliform types of bacteria were not found in your water sample.</p>	<p>They aid in determining :</p> <ul style="list-style-type: none"> • the source of the water – rain, well or piped supply • roof paint contamination <p>Chlorides, hardness and pH levels will affect the taste of water. Nitrates in high concentrations can be harmful to infants</p>
What is considered unacceptable?	What is considered acceptable?
<p>Any result other than the above will indicate that coliforms were found in the water and it is considered unsafe.</p> <ul style="list-style-type: none"> • Total Coliforms will most likely be found in your water if it has not been disinfected, as they are very common in the environment. • E. coli indicates contamination from fecal matter. 	<p>Recommended levels Chlorides: not more than 300mg/l Hardness: not more than 300 mg/l Nitrates: < 10 mg/l (less than 10) pH: 6.5 – 8.5</p>
Will you get sick from drinking water that is found to be unacceptable?	What do you do if the recommended levels are exceeded?
<p>There is always a risk of illness if you consume water that contains E coli. Although most E. coli strains do not cause illness, their presence indicates that disease causing bacteria such as Salmonella may also be present.</p>	<p>High chloride, hardness or nitrates indicate water from a well source. This should be investigated by the Department of Health.</p>
What can you do to make your water safe?	Can well water be tested and used for drinking purposes?
<p>If your water is not continuously disinfected, then the bacteriological quality will fluctuate. This is due to rain that washes contamination from the roof into the tank. For this reason, drinking untreated tank water is not recommended.</p> <p>To ensure that your water meets drinking water standards at all times, the water must be continuously disinfected. See the reverse side of this sheet for details.</p>	<p>We do not test water from your well because it is illegal to use it for drinking purposes, such as</p> <ul style="list-style-type: none"> • refilling your tank; or • supplying it to the kitchen sink <p>The quality of the well water fluctuates and may contain high levels of nitrates and bacteria (from cesspits)</p>

APPROVED DISINFECTION METHODS FOR DRINKING WATER

Why disinfect your tank water?

Bacteria and other microorganisms from the environment can contaminate the water in your tank. Your roof catchment not only collects water but also any dust, dirt, leaves and faecal matter from birds that wash into the tank as it rains. Faeces may contain bacteria that cause diarrheal illnesses, therefore disinfection is necessary to kill these germs which makes the water safe to drink.

How do you disinfect tank water?

Here are a few approved methods:

Boiling

Bring the water to a rolling boil for 5 minutes.

Advantages

- Cheap
- No maintenance

Disadvantages

- Inconvenient

Chlorination

In order for chlorination to be effective, a certain level of chlorine must be in the water at all times. This is best achieved by a metering pump and contact tank system. Simply dosing the tank periodically with bleach only provides disinfection for a very short period of time. Furthermore, it is important that the tank is clean, chlorine is mixed well and the correct amount is used.

Advantages

- Relatively cheap if using bleach
(Use $\frac{1}{2}$ cup unscented bleach per
1000 gallons of water)

Formula for calculating volume of water

$$\text{(number of gallons)} = \text{length} \times \text{width} \times \text{depth of water (in feet)} \times 6.25$$

Disadvantages

- Chemical taste
- Dosing not easy to regulate with tank water
- Concentration should be tested daily
- Possible formation of unwanted by-products

Ultraviolet Light

Ultraviolet light (U.V.) is the most popular method of disinfection for small domestic water treatment systems. It must be used in conjunction with filtration for maximum effectiveness.

Advantages

- Chemical free
- Water is available for use immediately

Disadvantages

- Moderate cost
- Requires maintenance – this should be discussed with your supplier

Distillation

Home systems are available that provide high purity water. It is very effective in killing bacteria and viruses.

Advantages

- Removes a wide range of impurities

Disadvantages

- Moderate to high cost
- Electricity usage
- Requires maintenance – this should be discussed with your supplier

Further Information: Contact Environmental Health 278-5333