

## Cistern Maintenance for Residential Settings

Some rural residents obtain their drinking water from a reservoir or cistern typically made from concrete. A cistern is used most often in areas where wells do not provide sufficient water or have historically produced water that is unsuitable for drinking. A properly constructed cistern filled with municipally treated water delivered by an approved water hauler should provide water that is safe to drink. A cistern still requires periodic inspection, cleaning, and disinfection. Poorly maintained cisterns are easily contaminated.

### Inspection

- Use a cistern made from a material suitable for holding drinking water.
- Maintain the cistern in a manner that will prevent the entrance of bugs, rodents, and surface water runoff.
- Inspect the cistern annually for sediment, bio-film (slimy coating), debris, cracks and seepages, ill-fitting lids, and broken vent screens.
- Do not direct rainwater into the cistern. Bacteria from bird and animal droppings, dust, leaves, and chemical residues from roofing materials will contaminate the cistern.
- Refill the cistern with potable drinking water only. Potable water haulers are inspected by the Grey Bruce Health Unit and typically obtain their water from a municipal water supply. Ask your water hauler if they are inspected by Public Health or contact Public Health at 519-376-9420.

### Cleaning

- Empty and clean the inside of the cistern every 1-2 years. You can remove sediment and debris, check and repair any cracks or seepages, remove any bio-film, and repair any damage. A cistern that requires entry into it for maintenance and cleaning should be considered a confined space. Hazardous gases or low oxygen levels may be present. Only individuals trained in confined space entry should enter a cistern.
- Disinfect the cistern after cleaning.

### Disinfection

1. Disinfect the cistern;
  - a) After cleaning,
  - b) If the cistern has become or may be contaminated,
  - c) If a lab result indicates the cistern is contaminated, or
  - d) If an inspection reveals there is concern of contamination.
2. Follow manufacturer recommendation for disinfection of cistern.
3. Add approximately 1 liter (= 3cups) of 5.25 % unscented bleach for every 100 gallons of water in the cistern. This provides a chlorine concentration of approximately 100 parts per million (=ppm or mg/L).
4. If the cistern is connected to any plumbing, open each faucet and run the water until you smell chlorine/bleach.

5. Turn off all faucets and allow the chlorine solution in the cistern and plumbing for at least 12 hours.
6. Drain all water after 12 hours from cistern and plumbing.
7. Refill cistern with safe drinking water.
8. After at least 3 days, submit a water sample for bacteria testing

Do not drink the water (or use it for brushing teeth or washing fruits/vegetables) until you have received your test results. The water should be safe for bathing, showering, laundry, and toilet flushing. It is recommended that at least a 7 day supply of drinking water (bottled water) be arranged before starting this process. Typically 1.5 litres per person per day should be enough.

### **Bacterial Testing**

- Free sample kits for bacteria testing are available at the Water Bottle pick-up and drop-off locations throughout Grey Bruce.
- Cisterns should be tested seasonally (spring, summer, fall and winter). If regular seasonal samples cannot be taken, then 3 samples, 1 to 3 weeks apart should be obtained. A single sample may not be representative of the quality of your cistern water. Continue to sample a minimum of 4 times per year. You can test more often if you want! The best time to sample cistern water is when the probability of contamination is greatest. This is likely to be in the early spring, after an extended dry spell, following heavy rains or after lengthy periods of no use. In addition to regular tests, cistern water should be tested immediately after:
  - Any repairs/replacement
  - The cistern has not been used for long periods of time (i.e. seasonal residences)
  - After a flood
  - There has been a change in the surrounding land use, or
  - There is any change in the water clarity, colour, odour or taste.

For more detailed information on drinking water cisterns cleaning, maintenance and disinfection follow this link: <https://www.cdc.gov/healthywater/emergency/drinking/disinfection-cisterns.html>