

## Thursday 12 March - Spring & Water Analysis

Once again it is time to verify the water quality of the well. (after the spring thaw, April or May and after the rain in October and November).

Drinking water must be free from any trace of E.Coli. E.Coli belongs to the coliform group and is the only species that is strictly fecal in origin. It is naturally present in large quantities in the bowel flora of humans and animals. Detection of E.Coli bacteria in the tap water indicates that the drinking water may well contain pathogenic micro-organisms whose ingestion represents a health hazard. Gastro-enteritis is the most frequent disease related to the ingestion of water contaminated by fecal matter. Immediate remedial action is required if the bacteria are detected in your well. By taking a few simple steps you can eliminate all trace of E.Coli bacteria in your water.

Agricultural fertilizers, manure, household wastewater and decomposition of plant and animal organisms are amongst the major sources of nitrates-nitrites. Because they find their way into the surface and groundwater through the rain and melting snow, infiltration is increased in spring and fall.

The maximum allowable concentration of nitrates-nitrites in drinking water is 10 mg/l. This standard is prescribed by the regulation respecting the quality of drinking water. Ingestion of water with a concentration of nitrates-nitrites exceeding this standard may affect human health. It may cause methemoglobinemia, a disease that affects the blood's capacity to carry oxygen. Infants less than six months old are especially at risk and must not drink water whose concentration of nitrates-nitrites exceeds

10 mg/l. As a precaution, pregnant women should also refrain from consuming this water. Generally speaking, it is recommended that no one drink such water on a regular basis.

However, if the nitrates-nitrites content is above

5 mg/l, it is recommended that the water be tested regularly, that is, at least twice a year.

Possible causes of drinking water contamination by nitrates include:

The inappropriate spreading of mineral and farm fertilizer

A faulty septic installation

A break in the well structure

Animal excrement in the well area

Excessive lawn fertilization

Etc.

Steps to follow if the well is contaminated with E.Coli:

### **Step 1**

Above all, you must remember that water containing E.Coli bacteria must not be consumed unless it has been boiled for one minute before consumption. Remember as well not to make any ice cubes, wash your vegetables or bathe your baby with this water.

### **Step 2**

Disinfect the well following proper procedures.

### **Step 3**

It is important to carry out new tests a week after disinfection, as well as four weeks later, to find out if the water complies with quality standards.

### **Step 4**

If contaminants are still present, determine the source of contamination.

### **Step 5**

In some cases, you will need to consider installing a permanent water treatment system, it is important to choose a specialized and licenced company in water treatment (RBQ Régie du Batiment du Québec licence and member of CMMTQ Corporation des Maîtres Mécaniciens en tuyauterie du Québec) and the equipment must be certified by NSF National Sanitation Foundation, and follow manufacturers' recommendations.

If the nitrates-nitrites level content in your well is above 10 mg/l, here is what you must do:

### **Step 1**

Do not drink the water, boiling the water will not eliminate these contaminants.

### **Step2**

Determining the source of contamination and carrying out proper remedial action is important.

### **Step 3**

If the level of contamination continues to exceed 10mg/l, the water should be treated on a permanent basis. Once again it is important to choose a specialized and licenced company in water treatment (RBQ Régie du Batiment du Québec licence and member of CMMTQ Corporation des Maîtres Mécaniciens en tuyauterie du Québec) and the equipment must be certified by NSF National Sanitation Foundation, and follow manufacturers recommendations.

*Reference: What should I do if the water from my well is contaminated? Beware to nitrates in drinking water.*