

Coliform Bacteria.

The presence of these living organisms in a water supply for human/animal consumption and use can be **VERY DANGEROUS!** This group of organisms originate from human and animal wastes. They can enter a water system through cracks in well casings, improper well construction or directly from areas of waste like sewage leach beds and septic systems. The possible presence of such dangerous organisms is why every water system should be tested on a regular basis by the local health authority. Should such organisms be found, the source of such contamination must be determined and corrections made. Local health authorities should always be consulted for proper testing and correction methods.



Ultra Violet
and Pre Filter

Solution

ULTRA VIOLET DISINFECTION

It has been established over many years that the simplest way to disinfect water is to expose it to sunlight. The ultra violet wavelengths 200 - 290 nanometres (nm) penetrate cell membranes to disrupt the DNA molecules, preventing cell replication with a maximum effectiveness around 260 nm, depending on the organism. Which means the UV destroys the reproductive mechanism of the microbe and thus prevents it from reproducing. The microbe is considered dead and the risk of disease has been eliminated. There are no microorganisms known to be resistant to UV, which, unlike chlorination, is highly effective against bacteria, viruses, moulds and yeasts. In practice, bacteria and viruses are the cause of the major waterborne pathogenic diseases. Of these, enteric viruses, hepatitis virus and Legionella pneumophila have been shown to survive for considerable periods in the presence of chlorine, but are readily eliminated by UV treatment. Similarly, chlorine forms trihalomethanes in surface water whereas UV treatment does not produce toxic by-products.

Although widely used for disinfection, chlorine has several major disadvantages:

- Chlorine reacts with natural organic materials found in water to produce strong unpleasant tastes and objectionable odour.
- Chlorine also is known to produce by-products; some of these by-products such as chloroforms are now regulated contaminants in drinking water because of their carcinogenic properties.
- Chlorine is also a chemical therefore it is an unnatural process.

Benefits of UV disinfection:

- Immediate process (no storage tank required).
- Beneficial minerals are not removed in the process.
- Economical disinfection process compared to other technologies.
- It is a natural process that disinfects without chemicals.
- There are no tastes or odours.
- There are no moving parts to be replaced (only arc tube to be replaced annually).
- No harmful by-products produced in the process of disinfection.
- Audible and visual indicators when UV intensity falls below required disinfection levels.