

## Water Testing – Potable/Drinking Quality

### **Other than Ice, Packaged and Bottled Water – Includes Water used in the Food Industry**

This includes water obtained from any source other than packaged or bottled water and would include water that is used for any food manufacturing process. The Australian Drinking Water Guidelines 6 – 2011 is a 1,300+ page document that details the physical, chemical and microbiological attributes of safe water. However it is impractical to screen for all listed attributes. The water quality management recommended is based on a preventative approach and monitoring is used to assess the effectiveness of the treatment.

When investigating the quality of domestic drinking water, it is recommended to monitor the key characteristics that are related to health risks. This includes microbial and chemical and in some cases physical characteristics.

It is recommended that the microbial quality of potable water is not assessed by testing for any specific pathogen. The method of evaluating drinking water for the likely presence of pathogens is best performed by testing for indicator bacteria of faecal contamination such as from livestock or sewage contamination. The Australian Drinking Water Guidelines recommend that *Escherichia coli* (*E. coli*) counts be performed as the primary indicator of faecal contamination. A 120mL sample collected directly from the outlet is required. The addition of *Clostridium perfringens*, Faecal coliforms and Enterococci can strengthen the accuracy of this panel. Each of these analyses requires an additional 100mL of sample to be collected.

With chemical testing the Australian government laboratory – National Measurement Institute, recommend the following analyses be performed to determine potability: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Zinc, Borate calculated as  $H_3BO_3$  and the following nutrient and physio-chemical analyses: Hardness - Calcium, Magnesium and Total, pH, Total Dissolved Solids, Soluble Sulphate, Turbidity, Nitrate as N and Nitrite as N. Special containers are required for these analyses.

### **Bottled, Packaged Water, Mineral Water and Packaged Ice**

The Food Standards Australia New Zealand (FSANZ) Food Standards Code requires that the microbial quality of packaged water, mineral water and packaged ice meets the following requirements: *Escherichia coli* <1 CFU/100mL. A 120mL sample of water is required. Please remember that a 250mL container of ice generally melts down to 100mL of water needed to perform the analysis. Other analyses detailed in the FSANZ document “User guide to Standard 1.6.1 – Microbiological Limits for Food with additional guideline criteria” include Coliforms, <1 CFU/250mL and *Pseudomonas aeruginosa*, <1 CFU/250mL for packaged water, mineral water and packaged ice. It also sets a guideline value for Standard Plate Count of <100 CFU/mL for packaged water and packaged ice. Approximately 10mL of water is required for this test.

We are also able to test for *Ralstonia* species, *Cupriavidus* species and Gram negative bacteria that have been associated with bottled water contamination.