

# WATER

## OUR PRECIOUS RESOURCE

Earth's growing global population is increasing the stress on water supplies, requiring increased conservation and reuse. Ensuring water quality and safety requires new, rapid and sensitive techniques to identify new chemical contaminants.



Utilization of analytical chemistry techniques coupled with in vitro biological profiling will facilitate a greater understanding of the chemical risks for emerging contaminants and disinfection by-products.

### WATER SAFETY



Water safety requires extensive monitoring that addresses the cumulative chemical mixture toxicity, identifies new chemical contaminants, and ensures the 'quality and safety' of drinking water, especially in water reuse applications.

### EMERGING CONTAMINANTS

Due to concerns about emerging contaminants and chemical transformation products, the US EPA and WHO have concluded that the current model for assessing water safety from chemical analysis alone may be insufficient to ensure water quality and safety.



### BIOPROFILING



The inclusion of in vitro biological profiling technologies for rapid screening of water quality may serve as a more rapid indicator of water safety.

### A NEW PARADIGM

A new paradigm is emerging that would include the use of biological screening techniques, such as in vitro assays, to rapidly identify the presence of chemicals that may have detrimental effects on biological systems, especially for water reuse applications.



### MAKING A LINK



Currently, the links between environmental analytical chemistry technologies and life sciences technologies for real-time water quality screening are sparse.

### COLLABORATION

Agilent collaborates with key opinion leaders to develop new approaches to assess water safety through the combination of analytical chemistry and in vitro biological screening. This approach provides more rapid and broader range screening than targeted chemical analysis alone.



Agilent continues to innovate to provide tools that allow researchers to better understand water chemistry, and the potential impact of chemical contamination on biological systems. With this knowledge, the global community can develop approaches to ensure a safe and sustainable water supply.