



# Environmental Chemistry & Microbiology Unit



**RIEL**

Research Institute for  
the Environment and  
Livelihoods

The Environmental Chemistry and Microbiology Unit (ECMU) is a high impact research consultancy aimed at protecting the natural assets of the Northern Territory that underpin its economy. We specialise in metal, stable isotope, microbiological and molecular analyses in aquatic and terrestrial environments, including analyses of sediment, water and biota.

## Services & research consultancy

- Monitoring aquatic environments to identify sources of pollutants and identify complex interactions, to inform mitigation strategies.
- Routine monitoring of water, sediment and biota quality in marine, coastal and freshwater systems for trace elements and microbes.
- Understanding the microbiology of waste water treatment plants to improve the efficiency of water treatment.
- Investigating microbial processes and microbial source tracking in water including marine and freshwater recreational environments as well as drinking water.

## Facilities

- Two Mass Spectrometers for elemental and isotope analysis.
- Portable Laser Spectrometers for C, O and H isotope analysis that can be used in the field for real-time isotope surveys.
- Analytical techniques for metal speciation.
- Molecular laboratory including quantitative PCR equipment for targeted gene analysis and whole microbial community profiling.
- Full range of field equipment for sampling and in-situ monitoring of pH, EC, Temp, DO, Turbidity

## PROJECTS

- Drinking water investigations across the Top End to improve the understanding of opportunistic pathogens, biofilms and iron bacteria to assist in developing management guidelines suitable for tropical Australia to minimize microbial risk.
- Microbial source tracking of recreational waters such as the Berry Springs Nature Park swimming pools to better understand sources of faecal indicators.
- Aquatic food monitoring in Darwin Harbour for pathogens and algal toxins to characterise the risks to human health.
- Jointly with Metals and Minerals Group we developed a 20-year environmental monitoring program at the Karumba Port Facility for the Lawn Hill Mine development.
- Involved with Rio Tinto's Gove Marine Health Monitoring Program since 2004.

## Further information

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