

Presentation title: **Managing and assessing risks of contaminants of emerging concern for the water Industry**

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Abstract: Contaminants of Emerging Concern (CECs) are frequently detected in water but there is limited information available to prioritise and manage these chemicals. The water industry's challenge is to keep abreast of the potential CECs that could affect their water treatment, the sustainable delivery of water to their customers or pose regulatory risks.

How can we confidently assess the health and environmental risks of CECs to make informed decisions about adequate responses to the issue? Our project is creating a readily accessible and regularly updated data base of CECs relevant to the water industry. In working with our members and key researchers in the field, we have been developing the data base with a focus on CECs that are currently without published regulatory or other threshold values. Contaminants listed in the database can be used as inputs into risk assessment tools that form part of the delivery of this project.

To address the needs of the water industry, our researchers evaluated an initial candidate list of 1719 CECs and developed a three-step prioritisation approach to rank them based on potential risks to environmental and human health. Preliminary results yielded 43 high-priority CECs based on their persistence, bioaccumulation and toxicity, and the possibility of occurrence above toxicity thresholds in surface waters. The project will further prioritise these chemicals based on risks to human health, and a user-friendly database and risk prioritisation framework is in the process of being created to guide the management of CECs by the water industry.

BIO



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Jacqueline has been in the water resources and water quality business for over 25 years. After completing degrees in hydrology and water resources engineering in Germany and the USA, her professional career has been marked by research assistant work at German and American universities, consulting with CH2M HILL in the USA for 10-years; and, for the past 18 years, working for the SA EPA and SA Water Corporation. She has been working with Water Research Australia since March 2020. Jacqueline is working closely with our utility and research partners as she facilitates and oversees the delivery of high-quality and effective research to enable efficiencies and greater understanding of current and future challenges for our membership. Water quality challenges now and into the future are marked by the ever increasing list of newly emerging contaminants that the water industry needs to remain aware of and proactively address, to ultimately continue their mandate of providing safe water for their customers and safeguarding the environment.