



Position Paper

**Sector-wide ‘portfolio approach’ to
address contaminants of emerging
concern.**

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1. Summary

Contaminants of Emerging Concern are a present and increasing risk for all Water and Sewerage Service Providers. Many Queensland councils and utilities have already been impacted by the detection of such contaminants often at large financial cost to solve issues that are still not fully understood. This trend is expected to continue because of the increasing use of novel substances and the ability to detect trace concentrations in water and sewage. These trends are coupled with an increasing community and regulator concern over any detection of trace chemicals and its rapid escalation through online and social media. Together, these factors mean that service providers will be increasingly called on to deal with poorly understood contaminants over which they have little control. Individual action in these circumstances is infeasible and a coordinated approach that addresses multiple lines of inquiry and response is essential.

2. A Portfolio Approach to Managing Contaminants of Emerging Concern

While the necessity for the water and sewerage service providers (WSPs) to address risks from contaminants of emerging concern (CEC) is clear, the steps that individual service providers can take are often limited. There is often limited available information about the sources, assessment methodologies and fate and risks of individual contaminants because of their emergent nature. Education and better communication are needed for service providers and their communities on each of these aspects and on treatment technologies available to manage and reduce risks. Service Providers typically have little control over many of these aspects and research is usually needed to fill gaps in knowledge. For these reasons, Queensland WSPs have started uniting to share data, information and costs to better understand options for managing CEC and to work together jointly to influence state, national and international decision makers to more effectively reduce risks for communities.

The **qldwater** Consortium for Research and Advocacy on Contaminants (qCRAC) was formed by Queensland service providers to work on the CEC issues that are better addressed jointly rather than requiring repeated innovation by individual organisations. The range of activities being undertaken forms a Portfolio Approach to the complex issues in management of CECs. The portfolio is summarised under six heading listed below and allows the sector collectively to address the multiple lines of research, education and advocacy needed to reduce risks from CECs. Current examples of collaboration and joint investigations with participation from Queensland service providers are listed on the following page.

a. Source Control

As WSPs have little control over the CECs that can potentially enter the urban water cycle, there is a need to better understand all sources. A good example are public sewers which tend to concentrate CECs from both residences and industry. While industry inputs can be managed to some extent, residential sources of some CECs are estimated to be significant and are beyond the control of councils and utilities. Working together WSPs are also seeking to influence national policy to reduce importation of CECs that can find their way into water and sewerage systems. In many cases source control can be more effective and significantly less expensive than treating CECs once they have entered the urban water cycle.

b. Assessment

Analysing, measuring and tracking CECs within the urban water cycle requires development of new methodologies and techniques including new sensors and monitoring approaches. These needs are complicated by the need to assess contaminant levels in the environment often at very low concentrations. This monitoring and much of the methodology development can fall to WSPs and is best undertaken jointly and in partnership with research organisations than by individual utilities.

c. Fate and Risks

A recent publication noted that “Because CECs are, by definition, emerging, there is yet to be an established process for assessing risks and prioritising action. The sheer number and diversity of CECs, combined with the paucity and rapidly evolving nature of the relevant evidence of health effects, presents real challenges to policy development. As a result, policy development can be reactive, driven by incidents and publicity, and not optimally integrated with approaches used to assess and manage well-established contaminants.” WSPs are now working collaboratively to better deal with the unknown aspects of fate and risk of many CECs.

d. Education & Communications

The novel and rapidly changing aspects of CEC has highlighted the need for ongoing review, collation and circulation of relevant information as issues develop and new solutions are devised. Through qCRAC WSPs have built a research portal for curating and sharing priority information so that service providers do not bear the load individually. This approach is also providing a mechanism to share consistent information across the sector and reduce the miscommunication that is common when new contaminants emerge and raise community concerns. Tools are being developed to assist service providers in communication with customers and communities.

e. Treatment

Novel mechanisms are required for removing many CECs from both the liquid (e.g. recycled water) and solid (biosolids) treatment streams from sewage treatment. Research has been intensified internationally but many solutions are either highly expensive and/or impractical for the highly dispersed and diverse sector managing public sewerage systems. Service providers are now collaborating in a range of research and development programs to investigate and model alternative treatment mechanisms and sharing information via qCRAC. Joint approaches to improving understanding of the efficacy of various existing treatment technologies is required to save individual utilities from expensive and potentially risky trials.

f. Influence

As well as seeking to influence state and national agencies about the need for broader control of the sources and importation of CECs into Australia, service providers are cooperating to influence on policy and decision-making relevant to the entire range of issues listed above. The sector has agreed to take leading role in environmental stewardship including proactive management of CECs rather than a reactive approach. Because of the costs and difficulties involved in eradicating CEC this requires building of networks with state and national agencies to share information, experience and practical solutions for emerging risks

