PFAS Research Projects

1. PFAS: A common industry position statement and code of practice	
Project Type	☒State-of-knowledge ☐Problem Definition ☐Knowledge Generation ☒Knowledge Transfer ☐ Knowledge Adoption ☐Benefit Realisation
Problem/Objectives	The water industry would like to see clarity over Federal guidelines to enable consistent application of ecological and human health risk assessment. A common position statement and code of practice will support the industry rather than each utility going it alone. Update the PFAS fact sheet with drinking water international guidelines. Differences between guidelines from different countries but limited information on how they were derived. We need to create a narrative that enables our customers and communities to have confidence that water utilities are providing safe drinking water and managing community impacts on the environment from it wastewater. Raise awareness and knowledge on: Comparative risk – hierarchy of response (acute/chronic); PFAS is all around us – relative levels; share with the community what we know; water utilities are investing in learning more and improving their knowledge and understanding and want to take customers along on the journey.
Scope/Deliverables	Practical guidance for industry inclusion of regulator input. Code of practice manual, including: case studies (eg Oakey, Katherine); monitoring; ecological risk assessment and human health risk assessment. Deliverables include a common position statement for the industry, a stakeholder communication tool and a national roadshow to roll out the communication. One industry -wide song sheet – 1 page; identify community information sources and basis of trust, their perceptions of water quality. Report on lessons learnt from other community acceptance campaigns, one pager industry key messages, public perception of PFAS issue – knowledge / awareness, info sources, trusted sources, role of water utility. Community engagement tool kit and training for utilities, lobbying and informing - including regulators, politicians, bill inserts. Possibly broaden to a generic approach including microplastics, etc. Add table into the existing fact sheet to provide values and how they were derived (litigation or science). Release updated fact sheet.
Benefit/Impact	Integrate regulatory requirements into a code of practice that the industry can use to have a common position statement and practice on PFAS. Standard approach across the industry nationally for environmental risk assessments, human health risk assessments, monitoring and application of guidelines for site specific issues. Background information for industry and public. Allows industry and public to compare international drinking water guidelines and how they were derived to Australian drinking water guidelines. Water utilities on the front foot, manage customer, business and reputational risk. The health risk is understand and managed. Water

	bills managed by managing costs through efficient PFAS response (eg RO, etc usage).
Project Size	☐Small (<$100k) ☒Medium ($100-$500k) ☐Large (>$500k)
Duration	☐Short (<6 months) ☒Medium (6-18 months) ☐Long (>18 months)

2. PFAS concentrations and human impacts: understanding the water industry contribution	
Project Type	☐State-of-knowledge ☐Problem Definition ☐Knowledge Generation ☒Knowledge Transfer ☐ Knowledge Adoption ☐Benefit Realisation
Problem/Objectives	The HBGV are not based on human data but are derived from rodent and primate laboratory studies that involve very high exposure there HBGV's / tdi may be too low. The water industry may be being unfairly or disproportionately implicated in the PFAS problem. We want to understand what contribution the water industry is making to the PFAS problem environmentally, to human health and in particularly worker exposure.
Scope/Deliverables	The water industry, while not the cause of this pollution, needs to develop a deeper understanding of PFAS to know how best to manage the risk associated with this group of substances throughout the water cycle. We need to identify ambient human serum concentrations of PFAS to: establish associations of blood serum concentrations of PFAS with human health impacts or disease to have a better basis for BHGV / tdi derivation. This will be done using a systematic literature review of adult human studies of blood concentrations of PFAS and any relationship to health/disease. This will enable the evaluation of the reliability and robustness of studies. Defining background PFAS levels and sources. Understanding PFAS pathways for humans. Quantify the water utility's contribution at various stages of the human exposure pathways via literature review, monitoring program and data analysis.
Benefit/Impact	This project will lead the development of health based guideline values through a systematic literature review of PFAS concentrations in humans. Reduced risk to human health and industry workers. Reduced costs to utilities and consumers. Knowing how much of a hazard PFAS poses to human health and what contribution the water industry has to this will help the industry manage the consumer and business risk. Reduced compliance/risk costs for utilities, reduced economic impacts.
Project Size	☐Small (<$100k) ☒Medium ($100-$500k) ☐Large (>$500k)
Duration	☐Short (<6 months) ☒Medium (6-18 months) ☐Long (>18 months)

3. Best practice guidelines on monitoring PFAS (including a national PFAS database)	
Project Type	☐State-of-knowledge ☐Problem Definition ☐Knowledge Generation ☒Knowledge Transfer ☒ Knowledge Adoption ☐Benefit Realisation
Problem/Objectives	There are currently no national guidelines that ensure consistent, rational (evidence-based) data quality assurance procedures when monitoring for PFAS in any medium. There is also no coordinated, consistent approach to collection and dissemination (sharing) of data relating to levels of PFAS encountered by Australian water utilities. This includes the technologies being used to collect such data in instances where it IS being monitored or collected.
Scope/Deliverables	Clear, concise peer reviewed guidance. Data reporting and assessment protocols. Research priorities in monitoring technologies and methods. Database (de-identified) with relevant fields (eg catchment type, treatment process train etc) searchable with data (with time)
Benefit/Impact	Guidelines will help ensure that data quality is maintained and help reduce uncertainty. They will ensure that data is comparable and will focus on industry-specific contexts. Reduction in false negatives and false positives, increase in confidence in fit-for-purpose. Improved efficiencies in monitoring. Better understanding of the typical/background PFAS levels nationwide (Wastewater, source water, treated drinking water, etc)
Project Size	☒Small (<$100k) ☐Medium ($100-$500k) ☐Large (>$500k)
Duration	☐Short (<6 months) ☒Medium (6-18 months) ☐Long (>18 months)

4. PFAS Risk profile for biosolids and water recycling	
Project Type	☐State-of-knowledge ☐Problem Definition ☒Knowledge Generation ☐Knowledge Transfer ☐ Knowledge Adoption ☐Benefit Realisation
Problem/Objectives	We need to understand the risk of transfer of PFAS from treatment plant by-products to biosolids and recycled water and whether this causes a risk to public health or the environment.
Scope/Deliverables	Knowledge of baseline levels. Understanding of fate of PFAS of biosolids application and recycled water application. Knowledge of transfer and fate of PFAS from biosolids and recycled water into plants/crops. Knowledge of transfer and fate of PFAS from biosolids and recycled water into grazing animals. Literature review, baseline PFAS data, detailed recommendations for work and greenhouse trials/studies.
Benefit/Impact	Industry recommendations for biosolids/recycled water reuse. Improved due diligence, better risk control, community acceptance. Reduced biosolids/recycled water applications. Better resource use and decision making.
Project Size	☐Small (<$100k) ☐Medium ($100-$500k) ☒Large (>$500k)
Duration	☐Short (<6 months) ☐Medium (6-18 months) ☒Long (>18 months)