

## R9 Update on PFAS

### Organisational Area Engineering

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**Summary** The recent detection of PFAS in a sentinel bore near the East Wagga bore field and West Wagga Bore 4 in August triggered an inter-agency response. Current actions include confirming PFAS sampling results at the sentinel bore, benchmarking PFAS risks at West Wagga Bore 4, and assisting both Defence and NSW DPE-Water in their ongoing investigations. To ensure the safety of potable water, Riverina Water will continue to manage PFAS risks of its drinking water in accordance with NSW Health Act, Australian Drinking Water Guidelines (ADWG) and via its Drinking Water policy and Drinking Water Management System (DWMS).

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**RECOMMENDATION** that the Board continue to supply water in accordance with the NSW Health Act, the Australian Drinking Water Guidelines, Riverina Water Drinking Water Policy and the Riverina Water Drinking Water Management System.

### Report

#### Background:

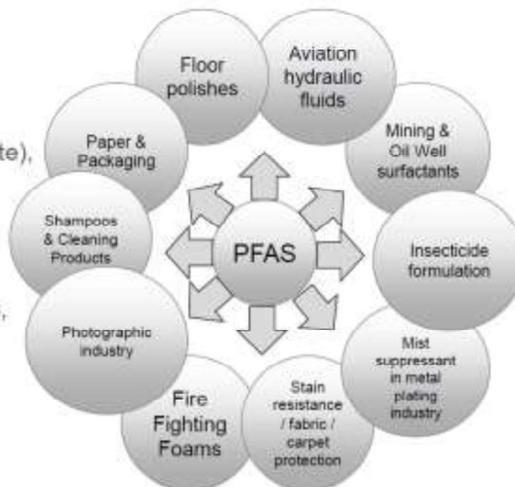
PFAS (Per- and poly-fluoroalkyl substances) are synthetic chemicals, including PFOS, PFOA, and PFHxS. Their impact on human health is uncertain, with different health departments reporting no consistent evidence of adverse effects but acknowledging their persistence and toxicity in the environment.

The Australian Drinking Water Guidelines set limits for PFAS in drinking water, with specific concentrations for PFOS, PFHxS, and PFOA. These guidelines aim to ensure safe drinking water quality and are referenced by NSW local government water utilities in their Drinking Water Management Systems.

Under the Public Health Act 2010, NSW water utilities must implement quality assurance programs, such as Drinking Water Management Systems, aligning with ADWG. This ensures a commitment to providing safe drinking water that meets health-based targets and adheres to water quality governance requirements, including PFAS parameters.

## What are PFAS

- Per- and poly-fluorinated alkyl substances (PFAS) are a group of man-made compounds
- Include PFOS (perfluorinated sulfonate), PFHxS (perfluorohexane sulfonate) and PFOA (perfluorooctanoic acid)
- PFAS have been widely used around the world since the 1950s to make products that resist heat, stains, grease and water
- Most people in developed countries are likely to have levels of PFOS, PFHxS and PFOA in their blood
- Emerging contaminants



### Current Status of PFAS and groundwater sources

#### East Wagga Bores (PFAS Heightened Risk)

In August, PFAS testing at our newly installed sentinel bore on Riverina's Forge Street site (655m from our East Wagga Bore 2) confirmed PFAS detection in both the Cowra and Lachlan aquifers. Defence is reviewing results due to doubts about sampling representativeness and contamination depth (i.e. Sentinel bore screen located at a depth of 25.5 metres compared to East Wagga Bore 2 screens located at a depth of 63.4m). A new sentinel bore will be drilled in December, adjacent to the existing one, and both will be sampled after bore development. PFAS has not been detected in East Wagga bores (1, 2, & 3).

#### West Wagga Bore 4 (PFAS Confirmed Positive Detection)

Extensive sampling of all Riverina Water raw water sources in Wagga Wagga confirmed a positive detection result at West Wagga Bore 4. This was below prescribed PFAS limits of 0.07ug/L for safe drinking water (ADWG). Detectable PFAS concentrations at West Wagga Bore 4 ranged from 0.015 - 0.02ug/L.

#### Riverina Water's PFAS Water Supply Risk & Operational Response Matrix

In accordance with our Drinking Water Policy, Drinking Water Management System (DWMS), Australian Drinking Water Guidelines, The Public Health Act 2010, and Public Health Regulation 2022, Riverina Water adopted a PFAS Risk and Response Decision Matrix. This matrix is based on four tiers of escalation for raw water sources and water treatment plants:

1. No PFAS detected and "No Foreseeable Risk":
  - E.g. North Wagga Bores 1,2 & 3), West Wagga Bores (1, 2 & 5), East Wagga Bore 3, Murrumbidgee River

2. No PFAS detection and "Heightened Risk":
  - E.g. East Wagga Bores 1 & 2 (i.e.. nearest to the Forge St sentinel bore)
3. PFAS detected AND below ADWG's PFAS Limit of 0.07ug/L for either PFOS or PFHxS:
  - E.g. West Wagga Bore 4
4. PFAS detection AND above ADWG's PFAS Limit of 0.07ug/L for either PFOS or PFHxS.

Operational decisions made by management will be in accordance with the recommendations in this report with the aim to consistently maintain quality treated water below the PFAS limit of 0.07ug/L, with increased monitoring if PFAS is detected.

Treated water with PFAS exceeding 0.07ug/L will never be supplied to customers. The water treatment plant and/or affected water sources will be isolated before reaching that stage.

### **Ongoing Actions:**

#### **Establishment of Wagga Wagga PFAS Risk Review – Project Governance Group (PGG) and sub-groups**

The Project Governance Group (PGG) is responsible for:

- Reviewing and monitoring identified and emerging PFAS risks, providing advice on prevention, mitigation, and management.
- Offering strategic leadership in developing, implementing, and sustaining new PFAS mitigating strategies.
- Understanding the impact of new PFAS contamination on all users of the Wagga's borefields and taking immediate actions to ensure drinking water safety for all users.
- Developing a communication plan to keep stakeholders and the community informed.
- Establishing agreed processes to escalate issues within relevant local, state, and Australian government agencies.

The responsibilities of the Project Governance Group include the following agencies (subject to change as required):

- Department of Regional NSW
- NSW Department of Planning and Environment, Water Utilities
- Riverina Water
- Department of Defence
- Department of Health NSW
- NSW Environmental Protection Authority (EPA)

Two subgroups have been also established:

- 1) Strategy and Planning Working Group:
  - Riverina Water

- Department of Defence
- Goldenfields Water
- NSW Public Works

2) Communications Working Group:

- Department of Planning and Environment, Water Utilities
- Riverina Water
- Department of Defence
- Goldenfields Water

NSW EPA who leads the NSW PFAS Technical Advisory Group (TAG) will keep the TAG informed and determine the nature of TAG involvement with the PGG.

**Benchmarking of PFAS risks at West Wagga Bore 4 and Forge Street sentinel bores**

Riverina Water, in collaboration with Defence, are benchmarking the impacts of PFAS at West Wagga Bore 4 and Forge Street Sentinel Bores. This involves routine surveillance of water quality to assess whether PFAS concentrations at these locations are increasing, decreasing, or stable. The goal is to effectively manage PFAS risks associated with water supply operations.

**Defence is reviewing PFAS results of Forge Street sentinel bore, including installing a second (deeper) sentinel bore**

To validate PFAS results from the Forge Street sentinel bore and ensure representative groundwater sampling at depths comparable to our nearest bore (East Wagga Bore 2 screen depth 63.4m), Defence is constructing a deep sentinel bore adjacent to the existing one at Forge Street. This work includes development of the new sentinel bore as well as redevelopment the existing sentinel bore to obtain representative water quality samples.

**Investigation of PFAS contamination affecting West Wagga Bore 4**

On our behalf, Defence is investigating sources of PFAS contamination affecting the West Wagga Bore 4. Additionally, DPE - Water intends to conduct another sampling regime across Wagga Wagga, including North Wagga, West Wagga and East Wagga bores and their monitoring bores.

**Strategic Options Analysis for future water sources**

Riverina Water and Goldenfields Water are finalising growth strategies to determine future source works requirements. This includes exploring potential synergies to mitigate the future effects of PFAS on town water supplies with respect to future water supply demand projections.

**Strategic Alignment**

Our Business

Improve strategic planning and accountability

### Financial Implications

There are increased costs associated with undertaking an increased sampling regime and these costs are within the adopted 2023/24 Operational Plan. There is an increased likelihood that capital funds will be needed in the medium-term future to fund investigation costs for new bores, other alternate water sources and/or advanced water treatment options if impacts of PFAS onto existing source works cannot be managed within ADWG.

Management is in early discussions with Defence in relation to this matter. Riverina Water has notified its insurer of the situation and flagged a likely future reportable incident that impacts Riverina Water assets.

### Workforce Implications

Not applicable

### Risk Considerations

<b>Service Delivery</b>	
Avoid	Riverina Water will avoid taking on any risks which may compromise water quality.