

Submission
No 39

**INQUIRY INTO INQUIRY INTO PFAS CONTAMINATION
IN WATERWAYS AND DRINKING WATER SUPPLIES
THROUGHOUT NEW SOUTH WALES**

Organisation: Randwick City Council

Date Received: 29 November 2024

NSW Legislative Council's Select Committee on
PFAS Contamination
Parliament of New South Wales
pfas@parliament.nsw.gov.au

29 November 2024

Ref No: D05533017

Dear Sir/Madam,

INQUIRY INTO PFAS CONTAMINATION IN WATER IN NSW

Randwick City Council acknowledges the establishment of an Upper House committee to inquire into and report on PFAS (per and polyfluoroalkyl substances) contamination in waterways and drinking water supplies throughout New South Wales.

Council supports the Terms of Reference of the Inquiry to establish a select committee to inquire into and report on PFAS (per and polyfluoroalkyl substances) contamination in waterways and drinking water supplies throughout New South Wales.

Council has reviewed the Terms of Reference, and this submission outlines a number of issues that are relevant to Randwick City and that Council recommends for consideration as part of this inquiry.

a) the adequacy and extent of monitoring and data collection on PFAS levels in waterways and drinking water sources

Previously, there were no formal requirements to test for PFAS contamination in water systems. However, as scientific awareness of PFAS has grown, testing is now more commonly undertaken. Data from early testing efforts reveal that PFAS contamination is both widespread and persistent, appearing in various environmental and industrial contexts.

Current monitoring efforts for PFAS contamination face significant gaps. The lack of standardisation in testing methodologies across agencies and industries results in discrepancies in data collection and reporting, making it difficult to compare results across regions or sectors.

Additionally, PFAS contamination often stems from decades-old industrial or firefighting activities, but limited baseline data hampers efforts to track its progression and pinpoint sources. While monitoring primarily targets high-profile sources like defence sites, airports, and industrial facilities, diffuse sources such as household waste and consumer products are frequently overlooked, despite their substantial contribution to PFAS levels in waterways.

Recommendations for Improvement:

Council recommends that:

- Testing beyond known PFAS hotspots be broadened to include areas with potential diffuse contamination, such as urban waterways and agricultural regions.
- Legally enforceable requirements be established for regular PFAS testing in all drinking water sources, industrial discharges, and wastewater treatment plants.

- A centralised national database be developed where all PFAS monitoring data is compiled, enabling comprehensive analysis and easier identification of contamination trends.

b) the adequacy of reporting and disclosure requirements to the public of monitoring and findings on PFAS contamination of water

Public reporting of PFAS contamination has become more common, particularly for land use types such as industrial sites, defence facilities, airports, and ports. While transparency is essential, it has also raised significant public concerns about safety, especially in areas where PFAS-contaminated groundwater may be in use.

Current reporting practices on PFAS contamination face several challenges. Communities often receive incomplete or delayed information about the extent and implications of contamination, which fosters confusion and mistrust, particularly when some affected areas are excluded from public databases or updates are infrequent. Additionally, the technical complexity of the scientific data in reports can be overwhelming for non-experts, creating barriers to informed decision-making at the community level. Furthermore, reports frequently lack sufficient health guidance, leaving residents without clear, actionable advice on how to minimise exposure or address contamination in their household water supplies.

Recommendations for Improvement:

Council recommends that:

- A uniform structure be implemented for PFAS reports, ensuring they include essential details like contamination levels, sources, and health impacts.
- Regular public forums and workshops be hosted in affected areas to explain findings, address concerns, and provide guidance.
- Collaboration with health authorities should be undertaken to provide clear, practical recommendations for communities, including information on water filtration options and exposure reduction.

c) the identification of communities at risk from PFAS contamination

Communities living near known PFAS hotspots such as industrial zones, military facilities, airports, and landfills are at heightened risk of contamination. However, once PFAS enters water bodies like rivers, streams, aquifers, or oceans, its mobility makes it difficult to restrict exposure to localised areas.

The Randwick Barracks site in NSW is a notable example of PFAS contamination. Groundwater testing in the surrounding area has detected elevated levels of PFAS, raising significant concerns about exposure risks for nearby residents. Many of these residents rely on groundwater for non-potable purposes, such as irrigation, increasing the likelihood of indirect exposure. Despite these findings, state and federal agencies have yet to implement comprehensive measures to mitigate these risks, leaving affected communities without adequate support or guidance.

Identifying communities at risk from PFAS contamination presents several challenges. First, the diffuse and persistent nature of PFAS allows it to travel far from its original source, impacting areas that are not immediately adjacent to known contamination hotspots. This mobility makes it difficult to predict which communities may be affected.

Vulnerable populations, particularly those in rural and remote areas, face heightened risks. These communities often depend on bore water or untreated groundwater as their primary water source and may lack the resources to access alternative supplies or install advanced filtration systems.

Lastly, efforts to map and prioritise contaminated sites remain incomplete, leaving gaps in the identification of at-risk populations. Without comprehensive and up-to-date mapping, some communities may remain unaware of the potential dangers posed by PFAS contamination in their region.

Recommendations for Improvement:

Council recommends that:

- Detailed, publicly accessible maps should be developed to show known PFAS hotspots and potential at-risk areas based on hydrological modelling.
- Priority be given to testing in communities downstream or downgradient from industrial and defence sites, as well as in regions where groundwater use is prevalent.
- Mitigation strategies should be tailored to the unique needs of affected communities, such as providing access to mains water supplies, offering rebates for filtration systems, or funding alternative water sources.

d) the accuracy and effectiveness of government engagement with and support for communities affected by PFAS contamination.

Based on Council's experience, the absence of a cohesive strategy between state and federal agencies has led to gaps in testing, reporting, and remediation efforts for contaminated groundwater. It seems that the NSW government prefers to defer PFAS-related issues identified at the local level to Commonwealth agencies, rather than engaging directly. For example, the Department of Defence has been delegated the responsibility for residential bore testing in the areas surrounding military sites as is the case at the Randwick Barracks. This delegation of responsibility has affected Council's ability to communicate and respond consistently and in a timely manner with affected communities.

This situation highlights several key issues for Council, namely, the lack of coordination in how PFAS contamination is managed, resulting in inconsistent and different standards and procedures being applied, which complicates efforts to address the problem comprehensively. It also results in gaps in testing in that, without a unified strategy, there may be areas where testing for PFAS contamination is insufficient or inconsistent and some contaminated sites might go undetected, posing ongoing risks to public health and the environment. This has left communities like those near the Randwick Barracks uncertain about the safety of their groundwater supplies. Additionally, effective cleanup of PFAS contamination requires coordinated efforts and resources such that, when agencies do not collaborate, remediation efforts can be fragmented and less effective, delaying the restoration of safe drinking water and clean environments.

Labelling products for PFAS contamination can raise consumer awareness about the presence of these harmful chemicals in everyday items like cookware, food packaging, and cosmetics. Clear labels, such as "PFAS-free," allow consumers to make informed choices and support regulatory efforts, as some countries now mandate such disclosures. Additionally, labelling can exert market pressure on manufacturers to reduce or eliminate PFAS, encouraging safer product formulations in response to consumer demand.

Recommendations for Improvement:

Council recommends that:

- The NSW Government allocate additional resources to enhance its testing and monitoring capabilities. This includes increasing funding for water utilities and local councils to conduct independent assessments.
- A state-level task force dedicated to PFAS management be established to ensure a coordinated response, clear communication, and transparency with the public.

- Mandatory labelling for all consumer products that contain PFAS be explored and implemented, with clear and standardised labels such as "Contains PFAS" or "PFAS-free."

e) sources of exposure to PFAS including through the historic and current firefighting practises

Historically, a major source of PFAS contamination was linked to the use of firefighting foam. However, today, PFAS is known to come from a wider range of sources including industrial activities, military sites, and consumer products that may enter into waterways and the environment through a variety of means. The exact proportions of PFAS contamination attributable to various sources in NSW are not definitively established, as data on PFAS contamination is still being gathered and analysed, and the extent of contamination from each source can vary greatly by region.

Having reasonably accurate data on the various sources of PFAS contamination in waterways and drinking water supplies in New South Wales is critically important for several reasons, ranging from public health protection to effective environmental management and policy-making.

Council believes that accurate data on PFAS sources is essential for creating effective public policy. For instance, understanding whether the majority of PFAS contamination is due to firefighting foam or industrial practices will help policymakers at all levels of government to draft regulations targeting the right sectors. It may prompt stronger regulations on the use of certain chemicals in firefighting foam or stricter controls on industrial emissions.

Clear data enables government agencies to adopt a proactive stance on preventing future contamination. This may include restrictions or elimination/substitution of PFAS in products, banning certain firefighting foams, or introducing strict waste management practices for industries known to discharge PFAS.

Additionally, different sources of PFAS contamination (e.g., firefighting foam, industrial discharge, landfills) may require different cleanup strategies. For example, remediating water supplies impacted by firefighting foam may require different treatment techniques than cleaning up contaminated soil from industrial sites. Accurate data helps determine the most appropriate and cost-effective remediation methods for each specific source that Council can apply, for example, in more targeted conditions of development consents.

Transparent and accurate data on PFAS contamination sources helps build trust between authorities, affected communities, and the public. If people understand the causes of contamination, they are more likely to cooperate with mitigation efforts and health recommendations rather than lay blame. Furthermore, knowledge of where PFAS contamination originates allows for more effective community education campaigns. If people know whether contamination is likely to come from nearby industrial sites, military areas, or other sources, they can make informed decisions about water use, consumption, and potential health risks.

Recommendations for Improvement:

Council recommends that:

- A statewide PFAS monitoring program be implemented that includes routine testing of waterways, groundwater, soil, and air near potential contamination sources such as military bases, airports, industrial sites, and firefighting training areas
- A publicly accessible PFAS contamination database should be developed that provides information on the location, sources, and concentration of PFAS in the environment, especially in drinking water supplies and high-use areas throughout the State.
- Enforcement of stricter regulations be undertaken on the use, discharge, and disposal of PFAS chemicals in industries, including in firefighting foams, industrial applications, and waste disposal practices.

- Develop a clear, well-structured statewide risk assessment framework for identifying and prioritising PFAS-contaminated sites, with clear guidelines for site investigations, remediation, and public health interventions.

f) the health, environmental, social, cultural and economic impacts of PFAS

Effective remediation of PFAS-contaminated sites remains a significant challenge due to the persistence of these chemicals in the environment. Globally, various technologies are being trialled with varying degrees of success including the following:

- *International Best Practices in Remediation: Activated Carbon Adsorption* is widely used in the U.S. to treat contaminated water sources. This technique binds PFAS compounds, preventing their movement through groundwater.
- *Ion Exchange Resins*: Emerging as a more efficient alternative to activated carbon, with the ability to target shorter-chain PFAS compounds that are harder to remove.
- *Electrochemical Oxidation*: In Europe, pilot projects are exploring electrochemical processes that break down PFAS molecules into less harmful components, although this technology is still in its experimental phase.

Australia can benefit from adopting trialled and tested technologies while investing in local research to optimise these solutions for specific environmental conditions.

Recommendations for Improvement:

Council recommends that:

- International best practices be adopted for water treatment and filtration, and the environmentally sound management and safe disposal of PFAS

g) the structure capacity capability and resourcing of NSW government agencies and water utilities to detect monitor report and respond to and mitigate against PFAS contamination of water supplies including the adequacy of infrastructure and resources.

As discussed under (point d) above, Council has observed the absence of a cohesive strategy between state and federal agencies in testing, reporting, and remediation efforts for PFAS contaminated groundwater.

Key issues related to the structure, capacity, capability, and resourcing of NSW government agencies in managing PFAS contamination include fragmented responsibilities across multiple agencies, leading to coordination challenges and delays in response (as discussed under point (d) above).

Effective inter-agency communication is often lacking, hindering swift mitigation efforts. Many agencies also lack specialised technical expertise in detecting and managing PFAS, and continuous staff training is needed to stay updated on the latest research and technological advancements. Additionally, limited funding and outdated infrastructure further constrain their capacity to address PFAS-related challenges effectively.

In this regard, Council is not aware of any commitment of funds or resources from the State Government for updating infrastructure that is needed for implementing comprehensive monitoring, testing, and remediation programs for PFAS contamination at the local level. The effect, for example in Randwick, is that the responsibility for handling residential bore testing in the vicinity of the Randwick Barracks site has been delegated to the Defence Department which, as discussed in point (d) above, has affected Council's ability to communicate and respond consistently and in a timely manner with affected communities in and around this hotspot.

h) the adequacy and effectiveness of NSW legislation and regulatory framework in testing for monitoring mitigating and responding to PFAS contamination including the adequacy of health-based guidance values as compared to the standards and practise of other Australian and international jurisdictions.

There are several concerns regarding the adequacy of New South Wales legislation and regulatory framework in addressing PFAS contamination. Issues include insufficient monitoring and data collection on PFAS levels in waterways and drinking water, and a lack of timely and transparent reporting to the public. Health-based guidance values for PFAS in NSW have been criticised for not being as strict as those in other regions. Additionally, the government's engagement with affected communities, especially First Nations, and its capacity to respond effectively to contamination is seen as inadequate. Comparisons with other jurisdictions suggest that NSW could benefit from adopting more stringent regulations and improved practices to better protect public health and the environment.

i) public sector resourcing and coordination amongst relevant agencies in preventing controlling and managing the risks of PFAS to human health and the environment.

As already alluded to in the discussions on a number of Terms of Reference points above, several key issues hinder the effective management of PFAS risks in NSW, including fragmented responsibilities across multiple agencies, which leads to coordination challenges and inefficiencies. For example, Council has regularly written to the EPA and NSW Water regarding PFAS contamination in the vicinity of the Randwick Barracks site discovered by contamination experts in the groundwater off-site and upstream. However, Council has not yet received a response to these communications and the updates provided to these agencies.

In addition to these issues, the state's emergency response plans need to be regularly updated, and community engagement is crucial for addressing health and social impacts. Comparisons with international standards show that NSW's approach may fall short, and improvements are needed in coordination, resourcing, and expertise to better manage PFAS contamination risks.

j) international best practise for water treatment and filtration and the environmentally sound management and safe disposal of PFAS

PFAS contamination in drinking water is a growing concern, particularly in communities near industrial sites. While water utilities are exploring large-scale treatment options, affected households need practical solutions for immediate protection.

Effective Filtration Methods include Activated Carbon Filters which can remove up to 95% of PFAS compounds, though effectiveness varies based on the filter's design and maintenance.

Reverse Osmosis Systems also highly effective at removing PFAS but can be costly and require significant water pressure, making them less practical for some households.

Recommendations for Improvement:

Council recommends that:

- Governments should provide financial assistance or rebates to communities affected by PFAS contamination to purchase certified filtration systems.
- Conduct public outreach programs to educate residents on the most effective filtration options available.

k) the effectiveness of remediation works on specific sites and international best practices for remediation and management of contaminated sites

Currently, the existing ANZECC (Australian and New Zealand Environment and Conservation Council) guidelines for water and sediment quality are insufficient to address the evolving challenges posed by PFAS contamination. These guidelines were initially designed to handle more traditional pollutants, and their scope does not adequately cover emerging contaminants like PFAS, which are persistent, bio-accumulative, and toxic even at low concentrations.

Furthermore, Australia's current standards for PFAS contamination are not as stringent as those of other countries, particularly the United States. In 2023, the U.S. Environmental Protection Agency (EPA) introduced updated drinking water health advisories, setting limits for two of the most studied PFAS compounds (PFOA and PFOS) at near-zero levels, that is, below detectable concentrations.

The U.S. EPA has set interim limits of 4 parts per trillion (ppt) for PFOA and PFOS in drinking water, while Australia's guidelines are significantly higher at 70 ppt.

Other jurisdictions, such as the European Union, are also moving towards much stricter regulations, with plans to limit PFAS levels in drinking water to 0.1 ppt for individual compounds by 2026.

Recommendations for Improvement:

Council recommends that:

- Aligning with international best practices would enhance public health protection and environmental safety.
- Adopting lower limits would push industries to adopt cleaner technologies and encourage the development of effective treatment solutions.
- Adopting CSIRO led research outcomes and refined protocols for deriving water quality guideline values for toxicants, including:
 - A Revised Method for Deriving Water Quality Guidelines, which uses the latest scientific data to establish more accurate thresholds for toxicant exposure.
 - A Technical Rationale for Changes to these methods, which aims to reflect new research on the environmental behaviour and human health impacts of PFAS.
 - These updated protocols are expected to provide clearer benchmarks for industries and regulatory bodies, enabling more effective decision-making in monitoring and mitigating contamination. Incorporating these updated guidelines would help protect sensitive environments, such as aquifers and wetlands, and better safeguard public health.

(m) areas for reform, including legislative, regulatory, public health and other policy measures to prevent, control and manage the risks of PFAS in water supplies

While some agencies have recently updated their guidelines to include PFAS testing (e.g., the 2022 Building Site Groundwater Investigation Guidelines), there is no uniform requirement across all sectors. This has led to inconsistencies in identifying and managing PFAS contamination.

Groundwater assessments for construction projects are now required to include PFAS screening. However, testing for PFAS in drinking water sources is still not mandated by law, leaving some communities at risk.

Certain industries, such as aviation and firefighting, are required to conduct PFAS testing due to their historic use of PFAS-containing firefighting foams. However, other sectors are not uniformly covered, creating potential loopholes in contamination control.

Recommendations for Improvement:

Council recommends that:

- Mandatory testing be expanded to include all industries that historically used, or may still use, PFAS-containing materials.
- A centralised reporting system be established where all PFAS testing data is collected and made publicly available, ensuring transparency and timely action.

o) other related matters

The Commonwealth's 2020 PFAS Position Statement has set objectives for reducing PFAS releases; however, its effectiveness has been limited due to a lack of enforceable measures and clear targets.

In November 2024, the National Health and Medical Research Council (NHMRC) released new draft guidelines for PFAS in drinking water. These guidelines are stricter and propose significantly lower health-based guideline values for PFAS in drinking water compared to previous guidelines and some international standards. For example, the proposed guideline for perfluorooctane sulfonic acid (PFOS) is 4 ng/L, which is much lower than the previous guideline of 70 ng/L.

Based on a review of the available evidence, NHMRC is proposing updates to the health-based drinking water guidelines for several PFAS as noted below.

Table 1. Potential PFAS Guideline Recommendations for Public Consultation

<u>PFAS</u>	<u>Current Guideline Recommendations</u>	<u>Potential Guideline Recommendations for Public Consultation</u>
PFOA	Based on human health considerations, the concentration of PFOA in drinking water should not exceed 560 ng/L.	Based on human health considerations, the concentration of PFOA in drinking water should not exceed 200 ng/L .
PFOS	Based on human health considerations, the sum of the concentrations of PFOS and PFHxS in drinking water should not exceed 70 ng/L.	Based on human health considerations, the concentration of PFOS in drinking water should not exceed 4 ng/L .
PFHxS		Based on human health considerations, the concentration of PFHxS in drinking water should not exceed 30 ng/L .
PFBS	No health-based guideline value in the current Guidelines.	Based on human health considerations, the concentration of PFBS in drinking water should not exceed 1000 ng/L .
GenX chemicals	No health-based guideline value in the current Guidelines.	No health-based guideline value is considered necessary for GenX chemicals at this time.

The stricter guidelines are based on a comprehensive review of the latest scientific evidence and public health advice and aims to reduce the risks to health from PFAS exposure over a lifetime, considering the persistence and potential health impacts of these chemicals. This approach aligns with the precautionary principle, aiming to minimise exposure to these "forever chemicals" as much as possible. Adopting these guidelines would bring Australia in line with or ahead of international standards, demonstrating a proactive commitment to global best practices in environmental health.

Recommendations for Improvement:

Council recommends that:

- The NHMRC guidelines should be incorporated into national and state legislation, making them enforceable standards for water quality.
- Robust monitoring programs should be established to regularly test water sources for PFAS and ensure compliance with the new limits. Public reporting of these results can enhance transparency and accountability.
- Programs to clean up contaminated sites, should be developed and funded, prioritising areas with the highest PFAS levels and greatest risk to public health.
- Public Awareness Campaigns by increasing efforts to inform communities about the risks of PFAS exposure and promote the use of certified domestic filtration systems where contamination is a concern.
- Incentives for Compliance by introducing tax benefits or subsidies for companies that invest in PFAS-free technologies and products.

Council looks forward to seeing the results of this inquiry If you have any questions regarding the above content, please contact Oscar Guillen, Council’s Coordinator Environmental Health, Building and Regulatory Services on .

Yours sincerely,

Meryl Bishop

Director City Planning