

High levels of toxic PFAS chemicals found in Australia's drinking water

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A recent *Sydney Morning Herald* (SMH) report on “forever chemicals” in drinking water across Australia’s eastern seaboard and further afield shows a large section of the population has been exposed to these cancer-causing substances for many years.

Perfluoroalkyl and polyfluoroalkyl substances (PFAS) are used in numerous household products such as non-stick cooking utensils; stain-, grease- and water-resistant clothing and carpet, and cosmetics. They have also been used as fire retardants as they resist extremely high temperatures.

They have been dubbed “forever chemicals” as they don’t break down in the environment and accumulate with continued use. They persist in the human body and in animals, meaning that prolonged exposure is cumulative. The use of the chemicals has become so ubiquitous that they have been detected in the tissue of polar bears in extremely remote areas. There are more than 5,000 PFAS chemicals and only a few have been tested for their toxicity.

The SMH report included data from publicly available sources showing that the water supply of the country’s two most-populous cities, Sydney and Melbourne, has been contaminated with the toxic substances.

Suburbs named as most affected in Sydney include North Richmond, Quakers Hill, Liverpool, Blacktown, Emu Plains and Campbelltown. Regional centres in New South Wales such as Newcastle, Bathurst, Wagga Wagga, Lithgow, Gundagai and Yass had high concentrations.

In Melbourne, Footscray was named, while the pollutants were also detected in Queensland regional centres Cairns and Gladstone. They were present in the cities of Darwin, Adelaide, Hobart, and Canberra.

Australia is considered to be a PFAS contamination “hotspot” along with China, Europe and North America.

PFAS chemicals have been found to be a considerable health threat causing thyroid cancer and liver damage. High exposure can lead to decreased fertility, developmental delays in children and increased risk of some cancers, including prostate, kidney and testicular cancers.

This has led to the US Environmental Protection Agency

(EPA) ruling in April that there is no safe level of perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) in drinking water, even at very low concentrations. The US has set a limit of 4 parts per trillion for PFOS and PFOA, while in December the World Health Organisation (WHO) declared that PFOA was carcinogenic.

Senior Advisor to the National Toxics Network Dr Mariann Lloyd-Smith told the SMH that it was a “national disgrace” that PFOA is permitted in Australia’s tap water at 140 times the maximum level the US will now allow. The accepted limit for Australia of PFOA is 560 parts per trillion.

The only Australian study into the prevalence of PFAS chemicals in drinking water funded by the federal government was conducted in 2011 by the University of Queensland. The report, “Concentrations of PFOS, PFOA and other per-fluorinated alkyl acids in Australian drinking water,” examined 34 locations around the country.

Some individual water authorities have since conducted their own testing and found higher levels than in the 2011 study.

The University of Queensland study warned, “Due to their ubiquity in the environment, adverse effects in toxicological studies, and currently uncertain human epidemiology, efforts have been made to limit [PFAS] production and release into the environment.”

The lack of concern for the health and safety of the population was starkly shown by the fact that governments did nothing to halt the importation of this dangerous class of chemicals, or even monitor the level of contamination in the water supply. The 2011 study remains the only systemic one conducted in Australia and monitoring has been left to individual water authorities.

In Sydney, the SMH revealed, only one site is regularly tested for PFAS, North Richmond, and the chemicals were detected there as recently as January.

Predictably the political authorities gave worthless reassurances of the safety of Sydney water. While New South Wales Chief Health Officer Dr Kerry Chant confirmed PFOA is cancer-causing, the state’s Labor

Premier Chris Minns claimed the city's supply was "generally considered very good."

In October, the Federal Environment Minister Tanya Plibersek announced that, by the end of 2023, nine toxic chemical groups including PFOA, PFOS and PFHxS would be banned from being manufactured or imported into Australia.

"After a decade of stagnation and falling behind the rest of the world... Labor is taking action on industrial chemicals including PFAS," Plibersek said.

In spite of the considerable risks, the importation won't be halted until July 2025.

Moreover, there is no suggestion that any Australian government will enact measures to remove PFAS contamination from the environment or the public water supply. According to the environmental organisation Friends of the Earth, "in Australia both 'conventional and advanced' Drinking Water Treatment Plants are presently not designed to adequately treat PFAS to anywhere near the new U.S. guidelines."

In an article published in April in the *Conversation*, Associate Professor of Civil Engineering and Earth Sciences at the University of Notre Dame Kyle Doudrick, describes the complexities and huge costs of lowering the level of PFAS chemicals in the water supply to the new limits set in the US. The new requirements stipulate that if the concentration of PFAS chemicals exceeds the new limit, a treatment plant must be established by 2029.

Various estimates have been made as to the cost. The US EPA estimates US\$1.5 billion per year while the American Water Works Association put the cost at over US\$3.8 billion per year for PFOS and PFOA alone.

Once the chemicals are filtered out, the question remains of their disposal. Doudrick states that "PFAS are known as 'forever chemicals' for a reason—they are incredibly resilient and don't break down naturally, so they are hard to destroy."

The chemicals are known to break down at temperatures over 1,000 degrees Celsius, but this would be extremely energy intensive and potentially create harmful byproducts.

It has been well known since 1998 that PFAS chemicals have a deleterious effect on human health. Evidence has emerged that the manufacturers of PFAS knew of the safety problems with their chemicals from as early as 1961. A toxicologist at DuPont raised safety concerns that Perfluorooctanoic acid (C8), a PFAS chemical, was toxic and should be "handled with extreme care."

3M, which began production of PFOA in 1947, noted signs of trouble in their workers exposed to high levels of these chemicals in the 1980s and 1990s. Specifically at their Teflon factory in Parkersburg, West Virginia, a cluster of

birth defects was possibly linked to PFOA. Their own internal documents had found these chemicals in fish and recognised their toxic potential.

The dangers were just as well known by governments, including in Australia. The Department of Defence ignored warnings dating back to at least 1987 that PFAS-containing fire-fighting foam should be treated as "toxic waste."

Nevertheless, the use of PFAS proceeded, and the multinational chemical corporations continued to derive vast profits from their production. It is the working class, however, who will bear the cost of PFAS pollution, both through the expensive measures needed to decontaminate public water supplies, and through the enormous toll on health and lives. A 2019 study conducted by the Nordic Council of Ministers on health impacts linked to PFAS exposure estimated the annual cost to the European Union at €52–84 billion.

The issue of PFAS pollution is one reflection of the fact that, under capitalism, the health and lives of ordinary people and the environment are totally subordinated to the profit demands of the corporate elite.

In the ongoing COVID-19 pandemic, capitalist governments around the world abandoned even the most minimal mitigation measures, adopting a "forever COVID" program in the interests of big business. As a result, some 28 million people have been killed, even though the public health measures necessary to eliminate the virus were well understood.

Like ending a pandemic, or preventing catastrophic climate change, eliminating PFAS contamination from the environment and water supply requires rational planning and the coordination of vast resources. This requires a fight for socialism, to end the domination of all aspects of social and economic life by the immediate profit imperatives of corporations.



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