

Australia: New guidelines for toxic “forever chemicals” in drinking water allow levels 50 times higher than US

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New voluntary guidelines for maximum levels of per- and poly-fluoroalkyl substances (PFAS) in Australian drinking water will still allow far more of the toxic chemicals than regulations introduced in the US earlier this year.

The new guidelines were proposed in a statement last month by the National Health and Medical Research Council (NHMRC). The statement attempted to allay community concerns, in the wake of revelations made by *Sydney Morning Herald* (SMH) reporters earlier this year about high concentrations of PFAS in drinking water in the Blue Mountains, across New South Wales (NSW) and elsewhere around the country. The SMH investigations also exposed the lack of systematic testing of the domestic water supply.

The NHMRC called for the allowable level of PFAS in drinking water to be reduced from 560 to 200 parts per trillion for PFOA and 70 to 4 parts per trillion for PFOS.

By contrast, last April, the Environmental Protection Agency in the US introduced mandatory regulations for a reduction of both chemicals to 4 parts per trillion in the next five years, with a longer term non-mandatory goal of zero PFAS. This was based on a scientific consensus that there is no safe level of PFAS in drinking water.

Thus, the new Australian guidelines for PFOA would still be 50 times higher than the US rules announced in April, for a chemical the World Health Organisation’s International Agency for Research on Cancer concluded last December is carcinogenic to humans.

In addition, the NHMRC proposed guideline values of 30 nanograms per litre for PFHxS and 1,000 ng/L for PFBS, based on thyroid effects.

PFAS are a group of around 10,000 chemicals, including PFOA, PFOS, PFHxS and PFBS, employed for their particular properties of repelling fluids. They have been used in sunscreen, non-stick frypans, grease-proof paper, firefighting foam, raincoats, umbrellas, carpet, shampoos, dental floss, eye makeup and a range of industrial applications.

Recent studies have calculated that 98 percent of people carry PFAS in their bodies to varying degrees, depending on their level of exposure through household items and their proximity to PFAS-polluted environments. PFAS have been detected in soil, the air and even in rain. Tests on aquatic animals, including fish, have also shown the widespread presence of PFAS, which presents another avenue of ingestion via the food chain.

They are called “forever chemicals” because they don’t break down in the environment or the human body. The accumulation of these chemicals in the body can lead to thyroid, kidney, liver and reproductive dysfunction, low birth weight and cancer.

A recent study, published in Science Direct, on the effect of perfluorobutane sulfonate (PFBS)—introduced as a supposedly safer replacement for PFOS—in nematodes illustrated that the chemical shortened their lifespan through mitophagy dysfunction. Mitophagy promotes longevity by identifying, removing, and recycling damaged or depolarised mitochondria within cells preventing them from producing inflammatory responses. The study drew a link between reduced mitophagy, which can be exacerbated by exposure to chemicals including PFAS, and early-onset Parkinson’s, Alzheimer’s and Huntington’s disease.

Despite an increasing raft of science pointing to

PFAS's detrimental effect on the human body, the chemicals are still being commercially manufactured and used in everyday items around the world. It is likely that a ban on the production and use of PFAS would prevent many thousands of widely sold products from being manufactured, significantly impacting the profits of the major corporations that use these dangerous chemicals.

The NHMRC's non-mandatory guidelines will do nothing to ensure that the Australian drinking water supply is safe. Instead, the government agency is aiming to play down the major health risks posed by the presence of PFAS in the drinking water supply.

The statement claimed: "NHMRC considers that concentrations of PFAS below the proposed guideline values would not be expected to result in any significant risk to health over a lifetime of consumption."

By contrast, Ian Wright, the water scientist from Western Sydney University who tested the initial Blue Mountains samples at the request of the SMH, bluntly told a concerned resident who asked at a community meeting last month what measures should be taken: "Don't drink the water. Have it shipped in, even from Warragamba Dam, or buy spring water."

While there are domestic water filtration systems that can filter out significant amounts of PFAS, they are expensive to install and require ongoing costs of regularly changing the filters involved in the reverse-osmosis process. Under conditions of a deepening cost-of-living crisis, these costs are prohibitive for many workers, as well as pensioners and the unemployed, placing safe drinking water, a basic human necessity, financially out of reach.

What would a planned, socialist response to the worldwide poisoning of water with "forever chemicals" look like? Firstly, immediate testing of all water catchments would be conducted to establish levels of PFAS and locations of particular concern. Scientists and engineers would be employed in the public interest as a matter of urgency. Intermediate measures to redirect uncontaminated water to flush out contaminated catchments would be implemented. Plans to upgrade water treatment plants with industrial-scale reverse osmosis systems capable of filtering out PFAS would be put into immediate effect.

Fresh, filtered water would be supplied to households

until such a time as piped water was safe to drink. PFAS manufacture would be banned and an education campaign about products containing PFAS would be undertaken to reduce household and environmental exposure.

Science, one of the main drivers of human progress and innovation, would be put to work to establish methods of breaking down PFAS in the environment. Currently, the only known way to destroy PFAS is incineration at temperatures of 1,800°F (982°C), a process that can still result in the release of toxic substances into the atmosphere.

Promising signs have already been identified in the form of sodium hydroxide, a chemical used to make soap, and dimethyl sulfoxide, a chemical approved as a medication for bladder pain syndrome. Experiments conducted at Northwestern University in the US in 2022 illustrated that PFAS exposed to sodium hydroxide and dimethyl sulfoxide at temperatures of 248°F (120°C) resulted in degradation of the chemical with no harmful by-products.

Under capitalism, however, high-cost measures to clean drinking water and research ways of ridding the environment of PFAS which don't produce profits are considered an unacceptable expenditure.

This underscores that the struggle for a socialist alternative is a matter of life or death for the working class. Only through the fight to overthrow capitalism and establish a workers' government can the subordination of the environment, health and human life to the profits of the ultra-wealthy be ended.



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