

Popular beach near Sydney Airport contaminated with toxic “forever chemicals”

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Tower Beach, next to Sydney Airport in Botany Bay, remains in regular use although it has been known by authorities for years to be contaminated with toxic PFOS (perfluorooctane sulfonate) chemicals.

While the popular swimming and fishing spot is officially “closed,” warning signs are tiny and easily missed, stating only “No fishing, no swimming.” Based on the signage, users of the beach have no way of knowing that they could be exposed to toxic chemicals that can cause a range of cancers, reproductive harm, foetal abnormalities, liver, kidney and thyroid damage, and immune dysregulation.

World Socialist Web Site reporters spoke with a regular visitor to Tower Beach, who said the beach is “very busy in the afternoons and on weekends” with swimmers, families with children, fishermen and horse trainers, due to its seclusion, calm waters and free parking. Children regularly swim there and play in the sand, the WSWs was told. The beach is also popular with aviation enthusiasts, because of its proximity to Sydney Airport’s main runway.

A recent article in the *Sydney Morning Herald* (SMH) noted that the inconspicuous signs were erected in 2023, five years after testing by the Environmental Protection Agency (EPA) identified high levels of PFOS in the water and in local fish.

Days after the article was published, the SMH reported that the EPA had announced a fresh round of testing, in a transparent attempt to cover up years of government inaction.

No attempt has been made by airport or government authorities to remove PFOS-contaminated soil and concrete at the airport, because such measures would cost many millions or even billions of dollars.

PFOS is one of a long-chain class of PFAS (per- and poly-fluoroalkyl substances), which were also found in drinking water catchments in the Blue Mountains and elsewhere around the country last year. In April 2024, the US Environmental Protection Agency ruled that there was no safe level of PFOS in drinking water.

PFAS are dubbed “forever chemicals” because they do not

break down in the environment and bio-accumulate in humans, animals, insects, plants, water and soil. To date, the only way to destroy PFAS is at temperatures of 982° Celsius (1800° Fahrenheit), a process that itself produces toxic aerosols. While scientists around the world are working on less-polluting ways of destroying the chemical in situ, progress is slow.

The toxic hazard at Tower Beach emerged from the use of aqueous film forming foam (AFFF) containing PFOS by the Civil Aviation Authority (now Airservices Australia) at its firefighting training facility on airport grounds from the 1970s to the 1990s. Although Airservices Australia discontinued the use of AFFF at airports in 2010, the chemical continues to pollute the environment around Sydney Airport, with rainfall causing PFOS accumulated in the substrate to leach into the Botany Sands Aquifer, which in turn enters Botany Bay and surrounding inlets.

Much is said by government authorities about “phasing out” AFFF, but according to the EPA’s website, “relevant bodies” are still authorised to use it in some circumstances, including Transport for NSW, fire brigades, the Port Authority of NSW, community fire units and water craft.

PFOS is used in firefighting foam because it suppresses petroleum-based flames by coating the flames and reducing the surface tension of water. It was used extensively from the 1970s until the early 2000s by the Australian Defence Force and at airport facilities around the country in training exercises, and by firefighters for extinguishing car and truck fires.

The Australian government’s National Health and Medical Research Council (NHMRC) states, “Exposure to PFAS via dermal routes during recreational water use, e.g. swimming is considered to be negligible.” However, a new study published in *Science Direct* in June 2024 demonstrated that at least some PFAS chemicals can be readily absorbed through the skin and retained within skin tissue, providing a pathway to enter the bloodstream.

The study cited personal care products containing PFAS as the primary vehicle for this absorption. One of the most

interesting findings in this study was that short-chain PFAS chemicals, which have been promoted as a safer replacement for older long-chain versions, are in fact more readily absorbed into the skin.

Furthermore, the NHMRC admits, “Ingestion [of contaminated water] is likely during immersion or partial immersion activities. Very young children are likely to ingest proportionally greater amounts of water than adults when bathing, swimming or playing in the water.”

At one end of Tower Beach there is another sign on a breakwater jetty used by fishermen, translated into several languages, threatening penalties for taking oysters which grow naturally on the rocks. The sign reads: “High levels of industrial pollutants found in these waters.”

Oysters are filter feeders and trap pollutants in their cells. In a study published by the US National Centers For Coastal Ocean Science in 2020, Eastern Oysters were exposed for 48 hours to the same chemical polluting Botany Bay. The results revealed that the “oysters accumulated 50 to over 100 times the level of PFOS relative to exposure concentrations” and sustained significant lysosomal cell damage. These specialist cells are responsible for cellular repair and immune responses.

After testing for the presence of PFAS in 2018, the EPA published an online notice recommending that consumption of most species of fish caught in waterways attached to Botany Bay be restricted to one serving per week. It advised not to eat salmon caught in either Botany Bay or the Georges River tidal waters and tributaries, or offal from caught fish, and for pregnant women to avoid eating fish caught in these waterways altogether. The notice also warned against disturbing sediment beneath the water. This notice remains current on the EPA website.

The following year, in contradictory advice, the NSW Department of Primary Industries advised eliminating consumption of all species of caught fish and shellfish in the “whole of the waters of Botany Bay and the Georges River, together with all their tributaries, creeks, bays, lakes and inlets.” The Department warned: “Important: Fish and shellfish caught in these waters should not be eaten due to high levels of pollutants being found in these waters. You should release your catch.”

The warnings of contaminated fish also covered Woolaware Bay, Saltpan Creek, tributaries running from Botany Bay to Woronora, Gwawley Bay, Kogarah Bay, Alexandra Canal, Cooks River, Inscription Point, Towra Point and waters surrounding Sydney Airport. Many of these areas are nonetheless frequented by recreational fishermen who are likely unaware of these warnings if they haven’t visited the website.

The EPA investigation into PFOS in waterways

surrounding Sydney Airport started in 2010, but was hidden from the public until 2018, when the SMH revealed the contents of documents acquired through freedom of information provisions.

The EPA investigation has still not been completed, according to the SMH. This highlights the lack of concern for public safety of successive governments, Labor and Liberal-National alike.

While Australian authorities have indicated they will ban the use, manufacture, import and export of PFOS, PFOA and PFHxS (perfluorohexane sulfonate) by mid 2025, there are more than 500 other PFAS chemicals that will still be in use in Australia. This number doesn’t include the myriad consumer, medical and industrial products containing PFAS that are imported into the country.

The ongoing exposure at Tower Beach is just one part of an environmental and health disaster of global proportions. It has been estimated that 99 percent of the world’s population has PFAS in their blood due to the use of “forever chemicals” in a wide range of domestic products, including makeup, sunscreen, teflon, takeaway food packaging, clothing, furniture, baking paper and some hand sanitisers, as well as medical equipment such as catheters, implants, sutures and cleaning solvents.

Decades after the 3M and Dupont companies identified and concealed the dangers of PFAS chemicals, human, animal and environmental health is paying the price for the thousands of new PFAS chemicals that have infiltrated all aspects of existence, from the food chain to the cellular health of all living organisms.

There are 12 major companies across the world still manufacturing and profiting from the chemicals, despite overwhelming evidence of their catastrophic toxicity. For industry to give up these “forever” compounds would mean relinquishing profits, a proposition that is incompatible with the capitalist system.

Eliminating PFAS contamination from the environment and water supply requires rational planning and the coordination of vast resources on an international scale. This means 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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