Airservices use of fire fighting foam at Brisbane Airport

Airservices role at Brisbane Airport

Airservices is a government-owned organisation providing air traffic control and aviation rescue fire fighting services (ARFFS) across Australia, including at Brisbane Airport.

A specialised ARFFS presence has been at the airport since it was opened in 1988.

International civil aviation regulations adopted by Australia require Airservices to use fire fighting foam to meet operational requirements for ARFF services.

Use of fire fighting foam at Brisbane Airport

Airservices does not use fire fighting foam containing per- and poly-fluoroalkyl substances (PFAS) at Brisbane Airport, and stopped using fire fighting foam containing PFAS in 2010.

The primary function of Airservices aviation rescue fire fighting service is to save lives and international fire fighting regulations require the use of fire fighting foam.

From 1988 until the early 2000s, a fire fighting foam called 3M Lightwater was used. This product contained perfluorooctane sulfonate (PFOS) as an active ingredient and other PFAS, such as perfluorooctanoic acid (PFOA).

Following increasing concerns about the possible environmental and health impacts of PFOS, in 2003 Airservices changed to another approved fire fighting foam called Ansulite that was understood not to contain PFOS or PFOA. It was later found to contain trace amounts of both these chemicals. In 2010, Airservices transitioned to a PFAS-free foam, Solberg RF6, at Brisbane.

About per- and poly-fluoroalkyl substances (PFAS)

PFAS are a group of manufactured chemical compounds that are used in a wide range of products including common household products such as non-stick cookware, food packaging and stain-resistant textiles.

Studies have shown that almost everyone has PFAS in their blood. People are potentially exposed to PFAS in the air, dust, food, water and various consumer products.

Australian health authorities cannot currently advise whether PFAS causes health problems in humans but state the potential for adverse health effects cannot be excluded. For more information, see guidance materials from the Australian Health Protection Principle Committee available from the Commonwealth Department of Health website.

PFAS are also used in some fire fighting foams—specifically aqueous film-forming foam (AFFF) like 3M Lightwater and Ansulite—which have the ability to spread over the surface of hydrocarbon-based liquids. AFFF is still used for fire suppression in many industries, including petrochemical and aviation, and some public fire services.

Airservices continues to contribute to work being conducted by Commonwealth and State government agencies looking at developing risk-based screening criteria for PFAS to ensure a nationally-consistent approach is taken by all jurisdictions.

PFAS in Moreton Bay

Given the widespread use of PFAS, there are potentially multiple sources of the substances entering the environment. It is therefore not just an airport or fire fighting foam-related problem.

A study undertaken by the University of Queensland in 2012 examined contaminant loads in the Brisbane River catchment following flooding. The study tested for PFAS along the entire length of the catchment, from Wivenhoe Dam to Moreton Bay, including side branches.

PFAS were detected in Wivenhoe Dam, but significant levels were detected in the side branches consistent with the urban catchment being a significant contributor to the load of PFAS received in Moreton Bay. This study can be found at:
http://www.sciencedirect.com/science/article/pii/S0025326X14001106

Airservices will continue to work with Commonwealth and State regulators to address and responsibly manage PFAS concerns at Brisbane Airport and is sharing all investigation results as they become available.

What action has Airservices taken at Brisbane Airport?

Site testing

Airservices undertook a preliminary site investigation at the fire training ground in 2006-08 which confirmed the presence of PFAS residues within soil, sediment and groundwater.

From 2009-12, Airservices engaged environmental experts to undertake further detailed site assessments of our operational sites on airport land as well as sampling of sediment, water and marine species in Moreton Bay. This included a Human Health and Ecological Risk Assessment (HHERA) conducted in 2012 for the fire training ground, main fire station and secondary (satellite) fire station.

The HHERA showed there were no likely significant human health impacts resulting from continuing use of the sites by staff or visitors.

Potential human health risks for maintenance and construction workers at the sites were identified however, these potential risks have since been mitigated by Airservices through the development of specific work, health and safety guidelines. It was determined that simple good hygiene practices are sufficient protection against exposure when working on the sites.

Further monitoring of soil, sediment and water was undertaken at the three sites in 2016. Results showed little change to 2012 results and the reports indicated the potential for migration of PFAS offsite to be low or negligible. Airservices will implement regular, ongoing monitoring of the three sites to ensure this does not change.

Following each site investigation, Airservices has shared the results with Brisbane Airport and the relevant Commonwealth and State regulators, including the Queensland Department of Environment and Heritage Protection and the Commonwealth Department of Infrastructure and Regional Development.

Airservices continues to monitor PFAS at the airport and work with the Commonwealth and State health and environment departments, regulators, policy experts, airport operators and researchers to develop solutions, such as screening thresholds, to manage PFAS contamination from all sources, including legacy fire fighting foams.

Next steps

Given the widespread use of PFAS, there are potentially multiple sources of the substances entering the environment. It is therefore not just an airport or fire fighting foam-related problem.

As part of an ongoing program to develop a better understanding of potential issues and inform a proactive approach to managing risks as a result of past use of fire fighting foams, Airservices is implementing a range of initiatives at Brisbane Airport, including:

- ongoing groundwater and stormwater monitoring and the implementation of management practices for on-site construction activities
- on-airport, research and development activities aimed at better understanding the behaviour of PFAS in the coastal airport environment.

We are committed to providing information on progress to the community and key stakeholders, while working with environmental and health experts to protect the health and safety of our employees and the community.

More information

Airservices Australia: https://www.airservicesaustralia.com/community/environment/pfas/

Queensland Department of Environment and Science: https://environment.des.qld.gov.au/

Department of Health: http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-publicat-environ.htm