



### Background to the Investigation

In May 2017, Defence engaged an independent environmental consultant (AECOM) to conduct a detailed environmental investigation into the presence of per- and poly-fluoroalkyl substances (PFAS) on, and in the vicinity of RAAF Base Richmond (the Base). This investigation is part of Defence's review of a number of its properties around Australia that used legacy fire-fighting foams containing PFAS.

Defence has a history of using legacy Aqueous Film Forming Foam (AFFF) for emergency fire fighting situations and for fire fighter training. In 2004 Defence commenced phasing out its use of legacy AFFF containing perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) as active ingredients. Perfluorohexane Sulfonate (PFHxS) was also commonly found in the legacy AFFFs as an impurity in the manufacturing process. The AFFF now used by Defence is a more environmentally safe product.

### About per- and poly-fluoroalkyl substances (PFAS)

PFOS, PFOA and PFHxS belong to a group of chemicals known as PFAS.

AFFF containing PFOS and PFOA as active ingredients were once used extensively worldwide and within Australia because of their effectiveness in fighting liquid fuel fires.

PFAS were also used across Australia and internationally in a range of common household products and specialty applications, including in the manufacture of non-stick cookware; fabric, furniture and carpet stain protection applications; food packaging and in some industrial processes. As a result, most people living in the developed world will have levels of PFAS in their body.

PFAS are emerging as a concern around the world because they are persistent in the environment.

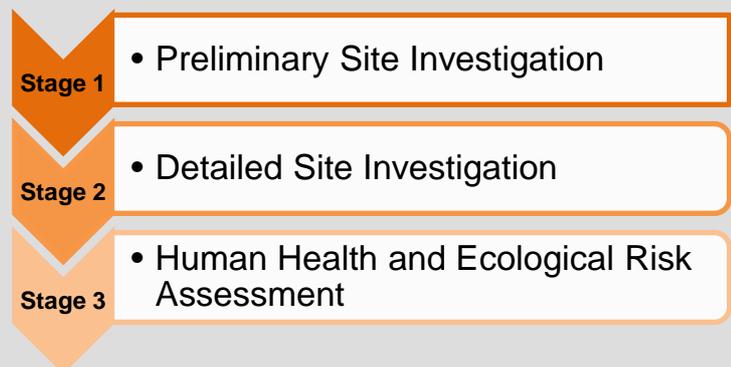


Common sources of PFAS

### Objective of the Investigation

The objective of the environmental investigation is to identify the nature and extent of PFAS in the environment from legacy AFFF use at the Base and any potential risks to people or the environment. The understanding of these potential risks will assist in developing mitigation strategies to minimise exposure.

All detailed environmental investigations are undertaken by experienced environmental services providers and are in accordance with the National Environmental Protection (Assessment of Site Contamination) Measure 1999 (NEPM). There are three main stages to an investigation:



Investigation Stages





## Environmental Investigation Activities

The detailed environmental investigation is expected to take approximately 12 months and will include:

- reviewing the historical use, storage and management of AFFF to identify potential sources of PFAS;
- identifying pathways and receptors for the potential migration of PFAS.
- sampling soil, sediment, surface water, groundwater, and possibly plants and animals on and off the Base to identify PFAS exposure in the vicinity;
- community and stakeholder engagement, including a water-use survey; and
- a Human Health and Ecological Risk Assessment (if assessed as required), which will evaluate potential risks to the human population and ecology, and inform actions to mitigate risks.

### Stage 1: Preliminary Site Investigation (PSI)

The PSI has now been completed. This stage involved the historical review of AFFF use at the Base to identify on-base sources, develop an understanding of PFAS migration pathways and identify potential receptors.

**Sources:** Where and when legacy fire-fighting foams were used

**Pathways:** How PFAS moves in the environment and the possible exposure to people and the environment

**Receptors:** People and the environment that may be exposed to PFAS

The findings of the PSI have been used to develop a conceptual site model, to guide understanding of sources of PFAS and their potential pathways to human receptors (people) and to prioritise works for stage two of the investigation, the Detailed Site Investigation (DSI).

### Stage 2: Detailed Site Investigation (DSI)

The DSI commenced in August 2017 and will involve sampling on-base and in the surrounding region.

A detailed report will be prepared and shared with relevant government and regulatory bodies as well as the community. This will also be made available to the public. The DSI is expected to be completed in May 2018.

#### Water Use Survey

As part of the detailed site investigations we are carrying out a water use survey to find out more about water use near RAAF Base Richmond. The voluntary survey aims to collect information about how bore and surface water is used and will determine what additional sampling needs to be conducted as part of the DSI.

If you would like to complete the water use survey please contact the PFAS Project Team using the details provided below.

#### Human Health and Ecological Risk Assessment

A more detailed assessment to better understand the risk to people and the environment may be undertaken if required.

- The risk assessment will be triggered if results during the investigation exceed applicable guideline values.
- The risk assessment is a detailed, scientific process that may involve further sampling.
- The results of the risk assessment will assist with planning for managing risks and/or remediation.



RAAF Base Richmond





### Government Guidance

The Environmental Health Standing Committee (enHealth) of the Australian Health Protection Principal Committee (AHPPC) has released guidance statements relating to human health.

According to enHealth, there is currently no consistent evidence that exposure to PFOS and PFOA causes adverse human health effects. However, because these substances persist in humans and the environment, enHealth recommends that human exposure is minimised as a precaution.

The Commonwealth Department of Health released final Health Based Guidance Values (HBGVs) for PFAS on 3 April 2017. These HBGVs were developed by FSANZ at the request of the Department of Health and replace the interim enHealth guidelines released in June 2016.

Defence will adopt the final HBGVs in all its environmental investigations including at RAAF Base Richmond.

### Supply of alternative drinking water

As a precaution, Defence is providing bottled water to residents who fulfil certain criteria, within the investigation area surrounding the Base.

For further information call 1800 789 291.

### Keeping the community informed

Defence is committed to regularly updating the community throughout the investigation. As well as community information sessions, updates are provided through the project website, direct mail and information sheets as new information becomes available.

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### Useful Links

The Australian Government Department of Health has established a PFAS webpage:

<http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-pfas.htm>

Department of Health PFAS hotline: 1800 941 180

Health Based Guidance Values:

<http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-pfas-hbgv.htm>

### Contact the Project Team

**Phone:** 1800 789 291

**Web:**

<http://www.defence.gov.au/environment/pfas/Richmond/>

**Email:** [Richmond.defence@aecom.com](mailto:Richmond.defence@aecom.com)

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