



RAAF Base Pearce – Detailed Site Investigation and Human Health Risk Assessment

PFAS Investigation and Management Program

About the Investigation

In April 2016, Defence commenced a detailed environmental investigation to identify the nature and extent of per- and poly-fluoroalkyl substances (PFAS) on, and in the vicinity of, RAAF Base Pearce as a result of the historical use of legacy firefighting foams at the Base.

This factsheet provides a summary of the key findings from the Detailed Site Investigation and the Human Health Risk Assessment, completed as part of the environmental investigation, and outlines the next steps.

Investigation update

In September 2016, the findings of the first stage, the Preliminary Site Investigation, were provided to the local community.

The second stage of the investigation, the Detailed Site Investigation (DSI), has also now been completed. The DSI involved comprehensive sampling program to collect information about the extent of PFAS in the environment and to better understand how PFAS moves through the environment.

Based on the initial findings of the investigation, Defence commenced a Human Health Risk Assessment (HHRA) and Ecological Risk Assessment (ERA). The aim of the assessments is to better understand the potential exposure risks of PFAS to people, plants and animals within the Investigation Area.

The HHRA has been completed with the ERA expected to be completed in late 2018.

The DSI and HHRA reports, including the sampling results, have been prepared and provided to relevant government agencies and regulatory bodies.

The reports are available at:

www.defence.gov.au/environment/pfas/pearce/publications.asp

Summary of the Detailed Site Investigation

The DSI involved extensive analysis of soil, sediment, surface water and groundwater samples from on and off-Base within the Investigation Area. Sampling of some animal and plant life (biota) and produce (fruit, vegetables and eggs) was also undertaken. The sample type and number of samples collected during the investigation are presented below:

SAMPLE TYPE	No. of PFAS Samples ¹	
	On-Base	Off-Base
Soil	406	57
Sediment	31	50
Surface water	42	51
Groundwater	79	152
Biota (animals, plants, produce)	36	60
TOTAL SAMPLES	594	370

^{1.} Total counts exclude samples collected from private properties where property owners did not consent to publication of results and quality control samples

Soil results

- In on-base samples of soil and groundwater, PFAS was detected above the relevant guidance values.
- Soil samples collected on residential properties within the Investigation Area did not detect PFAS above relevant guidance values.

Sediment and surface water results

- PFAS has been detected in Ellenbrook and Kit Monger Brook downstream from the Base.
- PFAS was not detected within the surface water or sediments of Twin Swamps Nature Reserve.

On-Base groundwater results

- PFAS was found in groundwater on-Base in Source Areas up to around 14 metres below ground level. All of these source areas recorded PFAS in exceedance of the health based guidance values.
- PFAS was not detected on-Base in groundwater 30 metres below ground level.

Off-Base groundwater results

- Groundwater samples collected from six residential bores detected PFAS above drinking water guidance values. Alternative water is being provided to these properties.



Biota and produce results

PFAS was not detected in any produce (fruit & vegetable) sampled from private properties, with the exception of two egg samples which contained PFAS below the health based guidance values for PFAS.

Source Areas

There were six main source areas identified. PFAS has been detected in these source areas in soil or groundwater above the relevant guidance values. The main source areas are the:

- Source Area A - Fire training area
- Source Area B - Former fire training areas
- Source Area C - A hangar with a foam deluge system
- Source Area D - A former foam storage area
- Source Area J - Former fuel farm with a foam deluge system; and
- Source Area R - The RAAF Pearce landfill.

Summary of the Human Health Risk Assessment

Based on the initial findings of the investigation, Defence commenced a Human Health Risk Assessment (HHRA) in Late 2016. The aim of the HHRA is to better understand the potential exposure risks for people within the investigation to be exposed to PFAS.

The Environmental Health Standing Committee (enHealth) advises that there is currently no consistent evidence that exposure to PFAS 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.

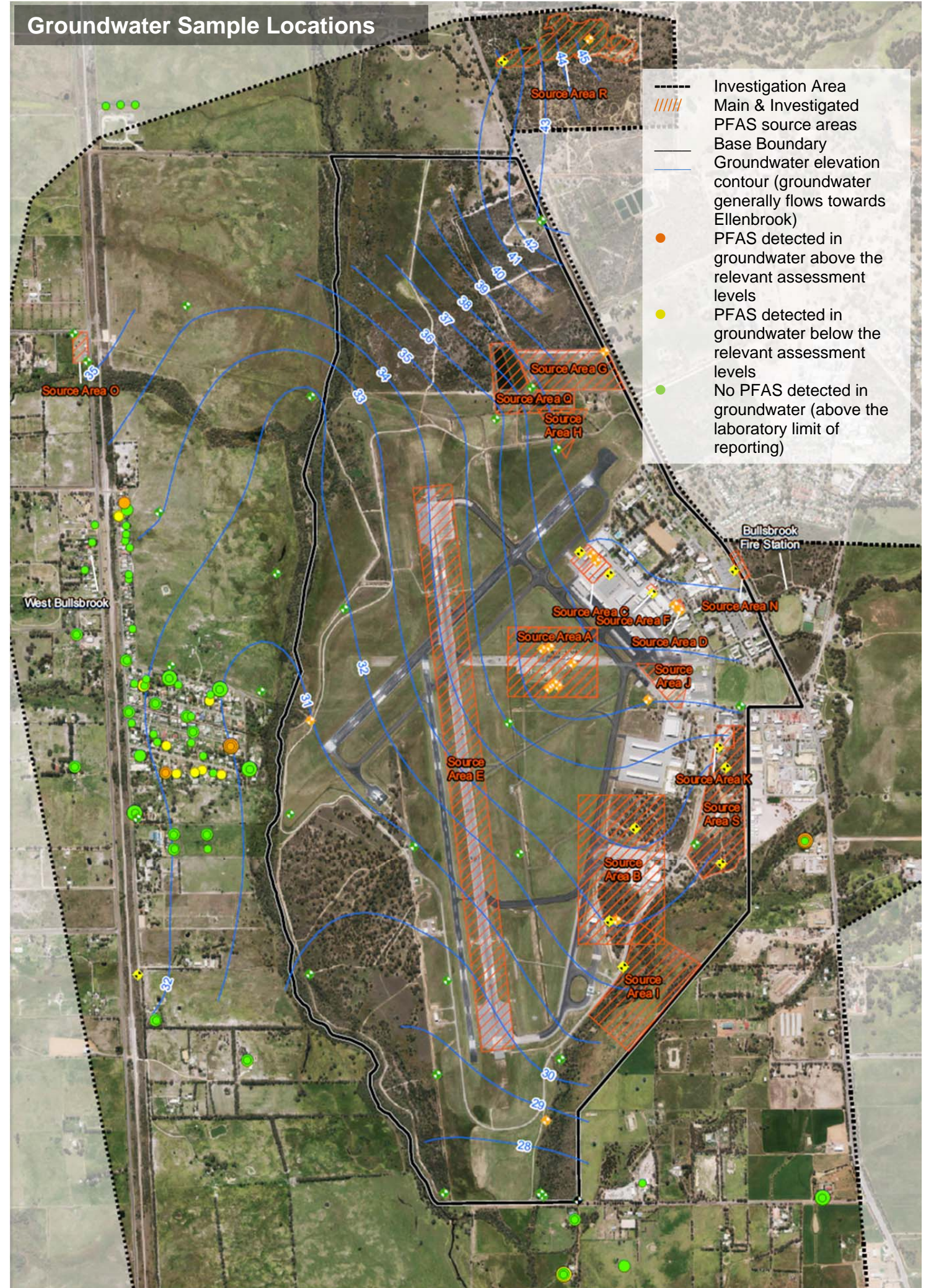
In May, EnHealth's advice was reaffirmed by the PFAS Expert Health Panel, an independent panel established by the Australian Government Department of Health.

In accordance with the advice from EnHealth and the Expert Health Panel, the HHRA provides recommendations to minimise exposure to PFAS.

Key findings of the HHRA

The HHRA estimates the level of exposure to PFAS in a range of scenarios. If the estimated level of exposure is below the relevant guidance value, the risk is categorised as 'low and acceptable'. If the estimated level of exposure may exceed the relevant guidance value, the risk is categorised as 'elevated'.

Potential Exposure Scenarios & Risks	
Low exposure risk	Using bore water in the house for activities such as showering, washing pets, gardening, playing under sprinklers or filling swimming pools.
	Consuming chicken eggs, fruit and vegetables.
	Swimming in the local Brooks
	Catching and consuming yabbies or gilgies caught in the local Brooks
Elevated exposure risk	Contact with soil and water on-Base <i>Soil and water within some areas of the Base have been identified as posing an elevated risk of PFAS exposure to Base workers during intrusive ground works. Management measures will be put in place to ensure that exposure does not exceed the relevant guidance values.</i>
	Drinking bore water <i>Drinking bore water at normal consumption rates presents a low and acceptable exposure risk for the majority of properties in the Investigation Area. Drinking bore water presents an elevated exposure risk at some properties where PFAS was detected above drinking water guidelines. These properties have been contacted and are being supplied with alternative water. Defence will examine long term options for the supply of water to these properties in the PFAS Management Area Plan.</i>





Next steps

The ERA, the final investigation report, is expected to be complete in late 2018.

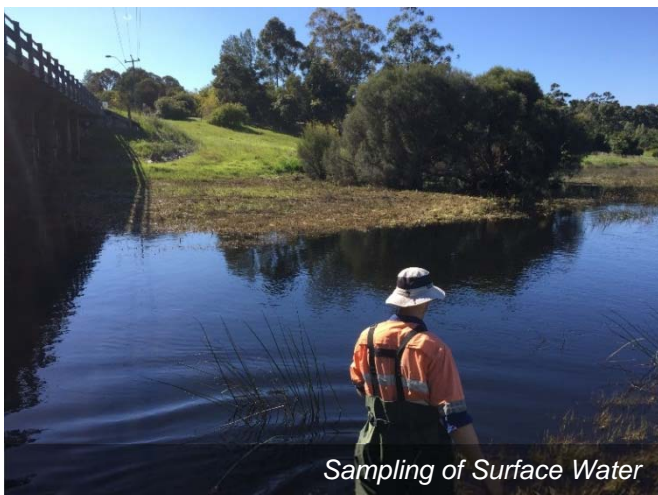
The outcomes of the detailed environmental investigation will be used to develop a plan with options for the future management of PFAS contamination. This will be known as a PFAS Management Area Plan or 'PMAP'. The PMAP will include an ongoing monitoring plan for the Investigation Area and will further guide Defence's actions to manage PFAS source areas, migration pathways and exposure risks.

Review of Supply of alternative drinking water

As a precaution, Defence provided alternative drinking water to residents who fulfilled certain criteria, within the Investigation Area. Following the completion of the DSI and HHRA, Defence is reviewing the supply of alternative water. Alternative water will continue to be provided to residents with bores that contain PFAS above the drinking water health based guidance value.

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, newsletters and factsheets as new information becomes available.



Sampling of Surface Water



WE
ARE
HERE

*Dates may be subject to rescheduling

Contact the RAAF Base Pearce Investigation Team

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