



Robertson Barracks PFAS Investigation – Detailed Site Investigation

PFAS Investigation and Management Program

Background

The Department of Defence is currently undertaking a detailed environmental investigation to identify the nature and extent of per- and poly-fluoroalkyl substances (PFAS) on, and in the vicinity of, Robertson Barracks.

This factsheet presents a summary of the work and findings from the second stage of the environmental investigation, the Detailed Site Investigation (DSI), as well as information on the next steps being undertaken by Defence.

DSI Sampling

The DSI involved sampling and analysis of soil, surface water, sediment and groundwater, to better understand the source of PFAS contamination and how it moves in the environment.

There were 613 samples taken from across the Investigation Area. Samples were taken in both the wet and dry seasons to understand if there were any seasonal variations in the concentrations of PFAS, due to the Northern Territory's climate.

PFAS was detected in a total of 187 samples - of which, 118 were below the relevant screening values. The below table summarises the overall sampling results.

Potential affected media	Total samples analysed	Total number with PFAS detected	Total samples above screening values
Soil	154	65	14
Surface Water	118	35	35
Sediment	179	61	4
Groundwater	103	26	16

Screening values were adopted from:

- HEPA (2018) *PFAS National Environmental Management Plan* (PFAS NEMP) January 2018; and
- Department of Health (DoH) (2017) *Final Health Based Guidance Values for PFAS for use in site investigations in Australia*, developed by Food Standards Australia New Zealand (FSANZ), 2017.

Note: Results above screening values do not necessarily mean there is an identified risk, but rather, that further investigation and/or risk assessment is required.

Summary of the DSI Findings

The DSI identified three main source areas for PFAS at Robertson Barracks. These are shown on Figure 1 and are:

- Source 1: the former emergency response compound where firefighting foams were stored and used for refueling;
- Source 2: where firefighting trucks were historically parked; and
- Source 3: the southern section of Robertson Barracks where firefighting trucks were washed down.

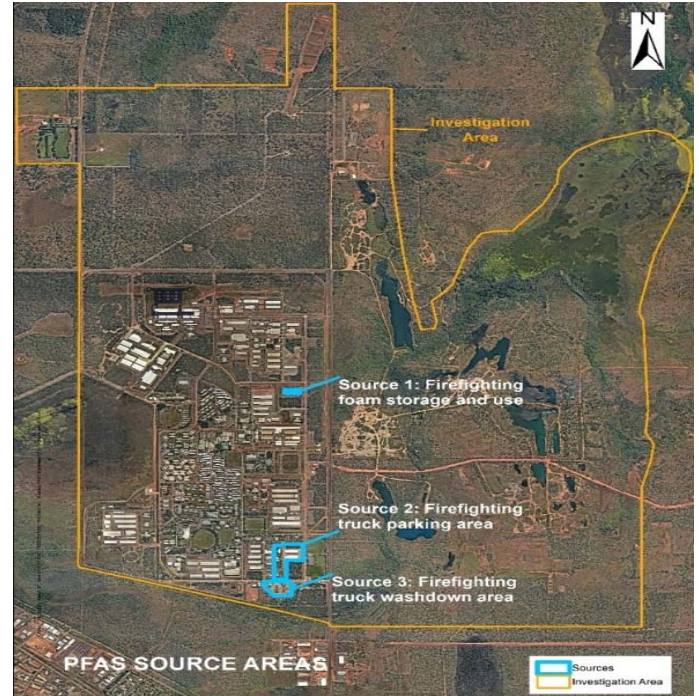


Figure 1: PFAS Source Areas

The DSI also identified potential pathways by which PFAS might move through the environment including:

- from soil in the source areas to groundwater or surface water;
- from groundwater into drainage channels and creeks (Milners Creek and Milners Swamp); and
- from surface water runoff into drains including the southern drainage channel and Milners Creek.

Based on these findings, two scenarios have been identified where there might be potential PFAS exposure to people in the surrounding environment:

- direct contact with soil, sediment and shallow groundwater at Robertson Barracks by construction or maintenance workers; and
- recreational consumption of fish or crustaceans from drains and creeks in proximity to Robertson Barracks.

Both of these scenarios are considered to be low to medium exposure risks and will be assessed further as part of the Human Health and Ecological Risk Assessment, which is currently in progress. This assessment will provide a basis to assess actions which may be required to mitigate the exposure risks identified.

The full DSI report is available to view at www.defence.gov.au/environment/pfas/Robertson

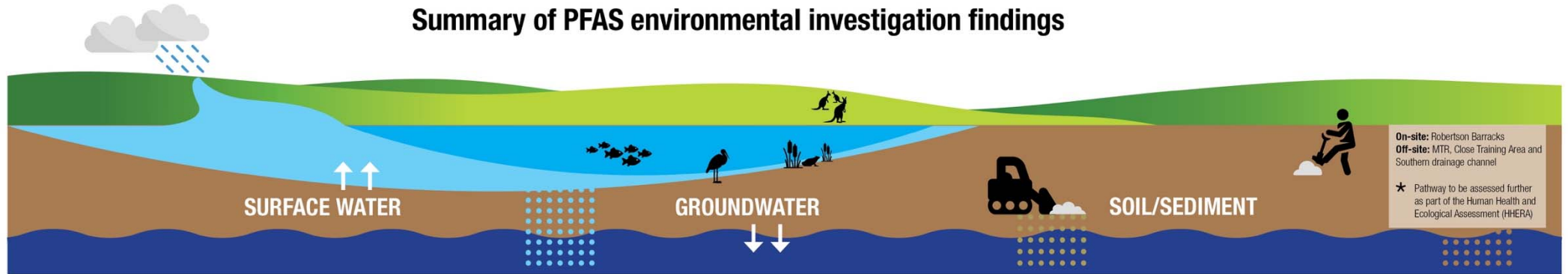




Robertson Barracks PFAS Investigation – Detailed Site Investigation

PFAS Investigation and Management Program

Summary of PFAS environmental investigation findings



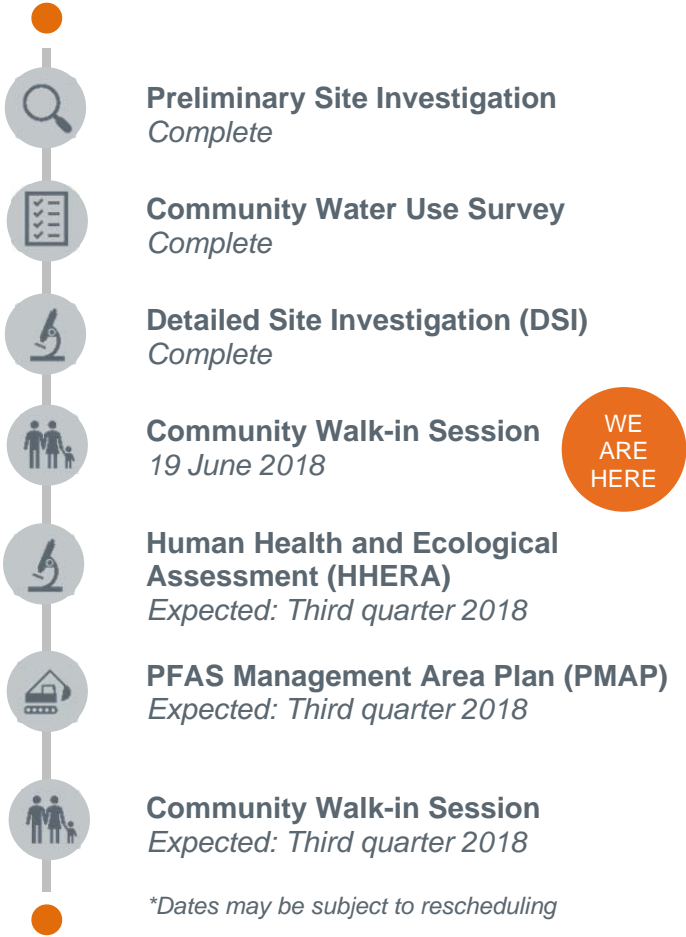
CONTAMINATED BY	Run-off from rain From groundwater From chemicals leaching from soil		Past spills soaking into groundwater		Past spills soaking into soil Contaminated soils eroded and deposited Soils disturbed by excavation	
EXPOSED BY	HUMANS ■ Direct contact ■ Accidental swallowing PLANTS AND ANIMALS ■ Drainage channels ■ Irrigation channels ■ Wetlands & creeks		HUMANS ■ Direct contact ■ Swallowing PLANTS AND ANIMALS ■ Direct contact with root zone		HUMANS ■ Direct contact ■ Ingestion PLANTS AND ANIMALS ■ Direct contact with root zone in soil ■ Irrigation/gardening	
WHO MIGHT BE AFFECTED	On-site ■ Residents ■ Workers Off-site ■ Residents/property owners ■ Workers ■ Recreational users		On-site ■ Residents ■ Workers Off-site ■ Residents/property owners ■ Workers ■ Recreational users		On-site ■ Residents/child care centre ■ Employees Off-site ■ Residents/property owners ■ Workers ■ Recreational users	
RISK LEVEL	On-site* ■ Low to negligible		On-site ■ Low to negligible		On-site ■ Low to negligible	
	Off-site* ■ Low		Off-site* ■ Low		Off-site ■ Negligible	
	On-site ■ Low		On-site ■ Negligible		On-site ■ Negligible	
	Off-site* ■ Medium to high (yet to be fully assessed)		Off-site* ■ Low to medium (yet to be fully assessed)		Off-site* ■ Low to medium (yet to be fully assessed)	





Robertson Barracks PFAS Investigation – Detailed Site Investigation

PFAS Investigation and Management Program



WE
ARE
HERE



Figure 2: Surface Water Sampling

Next Steps

Further Testing

Additional sampling was conducted in May 2018 to support the Human Health and Ecological Risk Assessment (HHERA). This involved:

- an ecological assessment, to develop a ‘food web’ that identifies potential terrestrial and aquatic receptors (plants and animals) in the aquatic areas of interest which include Milners Creek and the southern drainage channel; and
- additional sampling of water in soil/sediments, to further assess risks to plants and animals.

Human Health and Ecological Risk Assessment

Defence commenced the HHERA process in February 2018 to better understand how people and the environment might be exposed to PFAS and whether there are exposure pathways that require management.

The Human Health Risk Assessment involves estimating contaminant exposure under various scenarios and comparing these against health-based, tolerable daily intake levels. The Ecological Risk Assessment will identify and assess the local aquatic (water-based) and terrestrial (land-based) ecosystems that are at risk of exposure to PFAS.

The HHERA is expected to be completed in the third quarter of 2018.

PFAS Management Area Plan

A PFAS Management Area Plan (PMAP) will be developed to provide management options for any elevated risks identified by the HHERA. It will aim to minimise or avoid potential risks to humans, plants and animals from PFAS used on the site.

Keeping You Informed

Defence is committed to regularly updating the community as the investigation proceeds. As new information becomes available it will be shared through community information sessions, the project website, newsletters and factsheets.

Contact: Robertson Barracks Investigation Team

- 1800 592 616
- www.defence.gov.au/environment/pfas/Robertson
- PFAS.RobertsonBarracks@senversa.com.au
- Robertson Barracks Environmental Investigation
PO Box 1782 Darwin, NT, 0800

Media enquiries should be directed to Defence Media on (02) 6127 1999 or media@defence.gov.au

