



## RAAF Base Darwin

### 2023 Ongoing Monitoring Interpretive Report and remediation update

#### Overview

In November 2018, Defence completed investigations into per- and poly-fluoroalkyl substances (PFAS) contamination on and around RAAF Base Darwin.

Defence used the investigation findings to develop a PFAS Management Area Plan. This plan informs the activities Defence will undertake to manage, monitor and reduce the risks of PFAS exposure on and around the base.

The investigations found that PFAS are mostly concentrated in areas where firefighting foams were previously used, stored or disposed. These are called source areas.

PFAS moves in surface water in drains and creeks, or groundwater that flows underground, through soil and rock. At RAAF Base Darwin, PFAS was found to be primarily moving through surface water. Groundwater discharge to Rapid Creek also contributes to PFAS moving off base. Remediation works focus on treating PFAS in soil and concrete in the source areas to prevent it moving off base.

Eleven source areas were identified on the base where PFAS was found in soil or groundwater at levels that required further study or action.

Defence will continue to work collaboratively with NT Health and NT Environmental Protection Authority on PFAS management.



**Figure 1.** Team member collecting surface water samples

#### Project timeline



WE  
ARE  
HERE

#### Remediation update

Remediation aims to minimise PFAS leaving the base by focusing on treating the source areas. Over time, this will reduce the amount of PFAS leaving the base and improve conditions in the Management Area.

Defence recently completed remediation works at Hangar 31 and Former Fuel Farm 1 (see map), including removing the fuel tank and the construction of new drains. These works removed approximately 90% of PFAS at this source area. Interim measures such as a temporary cover across the concrete training pad have been implemented at the current fire training area to reduce PFAS entering Rapid Creek during the wet season.



Soil remediation at Former Fire Training Area 1 and the Wrapped Stockpiles are currently underway and expected to be completed in late 2023. Remediation Action Plans (RAP) are in development for other main source areas. RAPs outline ways to reduce the movements of PFAS through groundwater, drains and creeks into the management area.

Defence continues to work closely with Darwin International Airport to remediate PFAS on Commonwealth land shared with the airport. The Former Fire Training Area 2 source area is located on Darwin International Airport land, and will be targeted for investigation and remediation across 2024 and 2025.

## Ongoing Monitoring Plan

In 2019, Defence prepared the RAAF Base Darwin Ongoing Monitoring Plan (OMP) which outlines the routine sampling across the monitoring area.

This sampling measures PFAS concentrations in the monitoring area and tracks changes over time. Information collected under the OMP helps us understand the effectiveness of remediation actions taken as part of the PFAS Management Area Plan and any potential changes to the PFAS contamination.

The OMP is reviewed regularly, and Defence will update the monitoring frequency and/or locations of sampling in consultation with the NT Government.

## 2023 Ongoing Monitoring Interpretive Report

The 2023 Ongoing Monitoring Interpretive Report (IR) reviewing the exposure risks of PFAS across the monitoring area. To inform the IR, 527 samples were collected between November 2020 and June 2023.

### Groundwater



**200 samples** collected from groundwater monitoring wells and private bores.

### Surface water



**165 samples** collected from Katherine River, Darwin Creek, and the Katherine Town Council Swimming Pool.

### Aquatic biota



**162 samples** of fish, crustaceans and reptiles collected from local waterways.

## What does the 2023 Ongoing Monitoring Interpretive Report tell us?

The highest PFAS concentrations in groundwater are located at or near known source areas on base including Current Fire Training Area, Former Fire Training Area 1, Former Fuel Farm 4, Former Fuel Farm 6 and the Former Aviation Rescue Fire Fighting Station

Groundwater flows in multiple directions from the centre of RAAF Base Darwin towards creek systems and the coast, to the south, west and north. Rapid Creek to the north and Ludmilla Creek to the west are the primary groundwater flow pathways.

PFAS concentrations in both groundwater and surface water were generally consistent with past results.

Concentrations of PFAS in groundwater across the monitoring area have been largely stable or decreasing.

PFAS in surface water was above the recreational water health-based guideline value for the reporting period. This risk is managed through applying NT Health guidance to public swimming areas such as Rapid Creek.

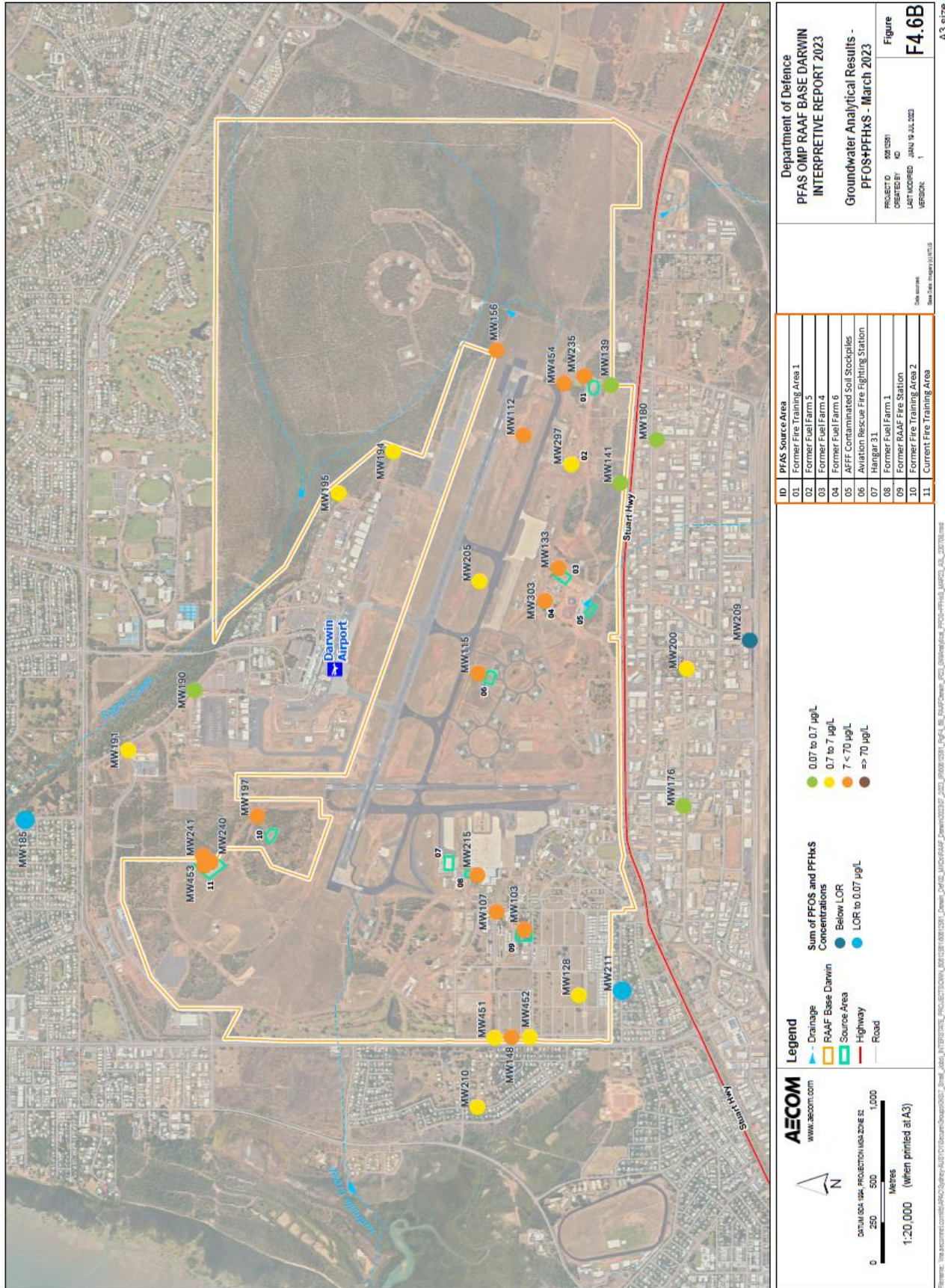
PFAS in fish, shellfish and reptiles were generally similar to previous results. Samples are taken once a year at the end of the dry season to monitor changes, and confirm data used to inform NT Health.

Residents should continue to follow NT Health's precautionary dietary advice for frequent consumption of wild caught fish, shellfish and crustaceans from the Ludmilla and Rapid Creeks. For further information, please refer to the 'Fishing in Darwin creeks' Factsheet, via [www.nt.gov.au](http://www.nt.gov.au)

Overall, results from sampling across the monitoring period **do not indicate a significant change in the risk to human health or the environment.**

**Table 1:** Samples collected this monitoring period.





This map shows results of groundwater samples collected in March 2023 as part of the Ongoing Monitoring Plan.

- Dark and light blue represent results below drinking water guidelines.
- Green is below recreational guidelines.
- Yellow, orange and brown exceed both drinking water and recreational guidelines.
- The 11 on-base source areas are shown with a teal outline.





## Next steps

Over the next 12 months, Defence will continue remediation and management activities including:

- completing soil remediation at two source areas: Aqueous Film Forming Foam (AFFF – a type of PFAS) wrapped stockpiles and Former Fire Training Area 1 (expected late 2023) and implementing temporary management measures at specific source areas to reduce PFAS movement during the wet season
- developing Remediation Action Plans for the remaining source areas. Remediation Actions Plans outline strategies to reduce PFAS ability to move through groundwater, drains and creeks into the management area
- working collaboratively with Darwin International Airport on remediation activities and other planned works at the airport
- continuing monitoring, with the next scheduled sampling to occur in October 2023 and March 2024. Sampling occurs every 6 months to monitor the movement of PFAS on and around the base.

## Keeping you updated and engaged

Defence will continue to keep the community updated about the management and ongoing monitoring of PFAS at and around RAAF Base Darwin.



**Figure 2.** Collecting a groundwater sample from a well

To access more information about Defence's investigations and management of PFAS on and around RAAF Base Darwin, scan the QR code below.



Or, use the link below to access more information:

<https://www.defence.gov.au/about/locations-property/pfas/pfas-management-sites/raaf-base-darwin>

## Looking for more information?



Further information on Defence's response to PFAS contamination:

<https://defence.gov.au/pfas/>



Alternatively, you can contact:



1800 333 362



[pfas.enquiry@defence.gov.au](mailto:pfas.enquiry@defence.gov.au)



### Media enquiries

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