



RAAF Base Townsville

October 2023 – Remediation and monitoring update

Overview

In December 2019, Defence completed a number of investigations to better understand per- and poly-fluoroalkyl substances (PFAS) contamination on and around RAAF Base Townsville, resulting from the historical use of firefighting foams on the base that contained PFAS.

These investigations included a detailed investigation of groundwater, surface water and sediment, on and around the base. A human health and ecological risk assessment were also completed.

The investigations identified the Former Fire Training Ground, Fuel Farm 2 and Fire Station and large areas with aviation hangers as PFAS source areas on the base.

Findings from the investigations were used to develop a PFAS Management Area Plan that outlines the proposed remediation and management actions.

Program timeline



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What are PFAS?

PFAS are manufactured chemicals that have been used in Australia and globally in many common household products and specialty applications.

Firefighting foams containing PFAS have historically been used worldwide by both civilian and military authorities because they are highly effective in fighting liquid fuel fires.

The movement of PFAS into the environment resulting from the use of legacy firefighting foams has become a concern because these chemicals can persist in humans, animals and the environment.

Learn more about PFAS

Scan the QR code or visit this link to learn more: defence.gov.au/pfas/



About the PFAS Management Area Plan

The PFAS Management Area Plan recommends actions to manage and reduce the risks of PFAS exposure for the community living and working at RAAF Base Townsville and the surrounding areas. This includes reducing the amount of PFAS in the environment and leaving the base.

Read the full Management Plan

The RAAF Base Townsville PFAS Management Area Plan is available on the Defence website.

Access it via the QR code or visit: defence.gov.au/about/locations-property/pfas/pfas-management-





Mass Flux Assessment

In June 2023, Defence completed a Mass Flux Assessment to monitor how and where PFAS is moving. The assessment found that PFAS mainly leaves the base in surface water over the north western boundary via the Louisa Creek catchment and the Town Commons.

The assessment also found that PFAS movement from the large aviation aprons and hangars on the western side of the base is minimal. Due to ongoing operations within these areas, remediation is not practicable.

The assessment identified two additional potential PFAS source areas adjacent to the western end of an unused runway and adjacent to the northern end of the main runway. These source areas will be investigated further to help determine if remediation actions are required.

Remediation and management activities

Defence is remediating the known source areas of PFAS contamination at the RAAF Base in Townsville.



Remediation means managing contamination and exposure to reduce risks.

The aim of remediation is to minimise the risk of PFAS leaving the base through reducing and managing contamination from source areas. Over time, this will reduce PFAS on and around RAAF Base Townsville and minimise the risk of exposure to the community and the environment.

As most PFAS moves through surface water at RAAF Base Townsville, the remediation activities focus on addressing PFAS found within the top layers of soil.

Former Fire Training Ground

The Former Fire Training Ground is a key source area of PFAS leaving the base, with the soil in this area containing more than 115 kg of PFAS. Defence is remediating this source area using a method called soil stabilisation.

Soil stabilisation involves digging the contaminated soil out of the source area and blending it with activated carbon to stabilise the PFAS and reduce its ability to wash out into stormwater and groundwater. The treated soil is then placed back onto the excavation and covered with a clean layer of topsoil and grass to reduce exposure to the weather and run off caused by rain.

Soil found to contain high concentrations of PFAS will be removed and destroyed at a specialised treatment facility. These remediation works are underway and Defence expects it to be completed in the coming months.



Image: Soil remediation underway at RAAF Base Townsville

Remediation of other known source areas

Further studies and plans are underway in preparation for future remediation activities for other known source areas at RAAF Base Townsville. These areas include the Fuel Farm and Fire Station, and the two additional potential source areas identified through the Mass Flux Assessment in June 2023.

Ongoing Monitoring Plan

The Ongoing Monitoring Plan is an important part of the RAAF Base Townsville management plan. The monitoring plan outlines the periodic sampling of groundwater, surface water, and sediment. This sampling helps Defence understand any changes to where PFAS has been found, and the levels of contamination in the environment.

In the long term this helps Defence, regulators and the community understand if actions to reduce PFAS have been effective. It also identifies where more investigation or remediation works may need to be undertaken.




The monitoring plan is reviewed regularly and Defence will update the monitoring frequency and/or locations of sampling as required in consultation with the Queensland Department of Environment and Science.

2023 Ongoing Monitoring Interpretive Report

The 2023 Ongoing Monitoring Interpretive Report outlines the groundwater, sediment and surface water sampling undertaken at multiple locations on and around RAAF Base Townsville between December 2020 and May 2023. The report also compares the results of recent sampling to previous results.



Number of samples collected and analysed

Groundwater 	489 samples collected from 109 groundwater monitoring wells
Surface water 	547 samples collected from 42 surface water locations, including Bohle River, Louisa Creek, Three Mile Creek, Mundy Creek and drainage channels
Sediment 	204 samples collected from the same 42 locations where surface water was collected

What were the results?

Based on the groundwater, surface water and sediment samples collected on and around RAAF Base Townsville, Defence found that PFAS contamination within the monitoring areas are largely consistent with previous results from April and September 2020.

The 2023 Ongoing Monitoring Interpretive Report found:

- The overall extent of the PFAS plume has not changed significantly since the previous monitoring period.
- Groundwater results were either stable or decreasing at most locations.
- Concentrations of PFAS in one off-Base well reported an order of magnitude increase in the latest results in April 2023. Minor increases in concentrations over the previous maximums are within the expected variability.
- Decreasing results were recorded near the Former Fire Training Area, a key on-Base source area, following recent remediation works. Further monitoring will occur, to help Defence understand if the remediation of this area has been effective.
- There were no first-time detections in surface water during the monitoring period.
- Surface water results showed stable concentrations in the Mundy Creek and Bohle River/Louisa Creek/Town Common catchments.
- Seasonal changes continue to be found in surface water. It is possible that higher-than-average rainfall may affect the presence of PFAS in surface water.
- Further monitoring will be undertaken to better understand changes in PFAS concentrations between seasons.

Overall, results from sampling across the monitoring period **have not changed the current understanding of the risk profile to human health or the environment.**

Further monitoring

Defence will continue to undertake sampling every six months at the locations identified in the management plan and monitoring plan. This data analysis will be included in future reports for RAAF Base Townsville and surrounding areas.

For more information about Defence's PFAS Investigation and Management program on and around RAAF Base Townsville, scan the QR code or follow this link: defence.gov.au/about/locations-property/pfas/pfas-management-sites/raaf-base-townsville



Next steps

Over the next 12 months, Defence will:

- complete further assessment of the two potential source areas
- commence remediation works at the Fuel Farm and Fire Station
- continue ongoing monitoring with the next scheduled sampling events to occur in April 2024 and October 2024
- continue to keep the community informed.

Looking for more information?



Scan the QR code to find out more about Defence's PFAS Investigation and Management program, or visit: <https://defence.gov.au/pfas/>



Alternatively, you can contact:



1800 333 362



pfas.enquiry@defence.gov.au



Media enquiries

Media enquiries should be directed to the Defence Media Centre on (02) 6217 1999 or via email at media@defence.gov.au

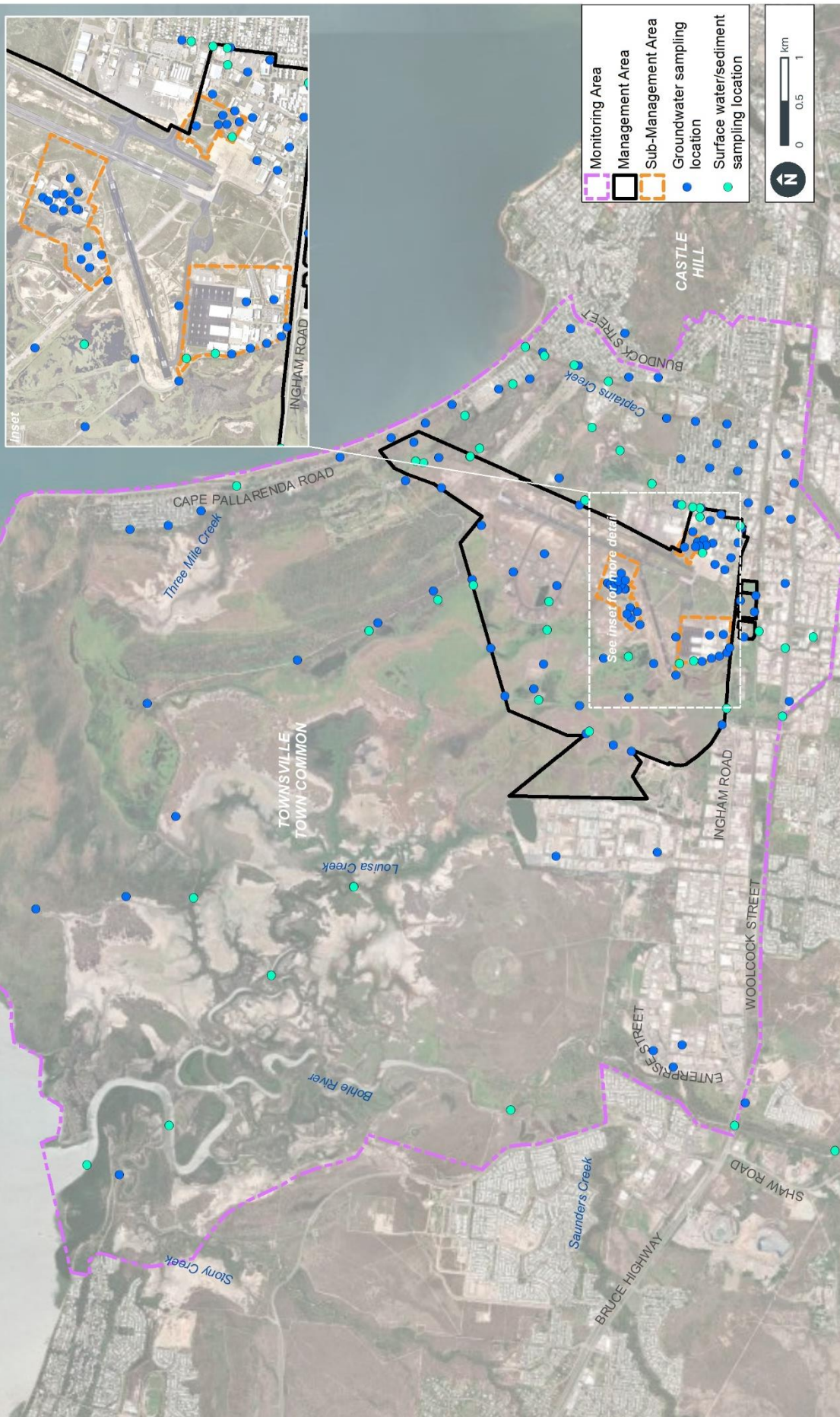


Figure 1
RAAF Base Townsville Monitoring Locations