



## Bandiana Military Area

### June 2024 – Further site investigations and remediation planning update

#### Overview

Defence has completed investigations to better understand per- and poly-fluoroalkyl substances (PFAS) contamination on and around Bandiana Military Area, resulting from historical use of firefighting foams.

Bandiana Military Area includes the Gaza Ridge Barracks at north and south Bandiana and Wadsworth Barracks at east Bandiana.



The investigations included a detailed investigation of groundwater, surface water and sediment both on and around the military area to understand where the contamination is, and the way that PFAS is moving from the base. Defence also completed a human health and ecological risk assessment.

The investigations found that PFAS in soil and groundwater is mostly concentrated in areas where firefighting foams were previously disposed of, used, or stored. These are commonly referred to as source areas. At Bandiana Military Area, Defence investigated 15 potential source areas. Varying levels of PFAS contamination were found, though at some areas, no PFAS were detected.

Defence used the findings from the investigations to develop a PFAS management area plan. This plan outlines the proposed remediation and management actions to manage and reduce the risk of PFAS exposure for the community living and working at Bandiana Military Area and surrounding areas.

#### Project timeline



**Environmental investigation completed**  
*September 2018*



**Human health and ecological risk assessment completed**  
*November 2020*



**PFAS management area plan and ongoing monitoring plan published**  
*November 2020*



**Further site investigations completed**  
*December 2023*



**Further assessment works completed**  
*April 2024*



**Remediation action plan completed**  
*Mid 2024*



**Remediation contractor engaged**  
*Late 2024*



**Commence remediation**  
*2025*

#### What are PFAS?

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

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

The movement of PFAS from source areas into the environment has become a concern because these chemicals can persist in humans, animals and the environment.



## Further investigations

Defence conducted further PFAS investigations to better understand the movement of PFAS and how it may travel from the source areas and leave the base. This work helps inform the best remediation actions for Bandiana Military Area.

Remediation means managing contamination and exposure to reduce risk.



The investigations focused on the former fire training area at the Gaza Ridge Barracks and areas at Wadsworth Barracks, including the current fire station. The assessment found that PFAS moves off Gaza Ridge Barracks primarily in surface water during heavy rainfall events.

At Wadsworth Barracks, PFAS movement through surface water is minimal as construction works previously carried out on the base had already covered or removed past sources of PFAS. But PFAS contaminated groundwater moves from the fire station across Wadsworth Barracks.

The information gathered as part of these investigations will form part of future remediation and management planning.



*Surface water monitoring equipment installed in an on base drainage channel as part of the PFAS monitoring and assessment.*

## Remediation planning

Defence's priority is to reduce the risk of people's exposure to PFAS from the base by focusing on remediating source areas with the highest PFAS concentrations and managing the pathways through which PFAS can leave the site.

Through the additional investigations, Defence identified the former training area at Gaza Ridge Barracks and the current fire station at Wadsworth Barracks as the two key source areas.

Based on the results of the further investigations, Defence is now preparing a remediation action plan to identify the best remediation options for these two areas.

The aim of remediation is to manage the contamination at the key source areas and minimise PFAS leaving the site. Over time, this will reduce PFAS on and around the Bandiana Military Area.

As most PFAS moves through surface water within the Gaza Ridge Barracks area of the base, remediation activities will focus on managing PFAS in the soil to reduce the amount of PFAS moving through rainwater runoff.

For Wadsworth Barracks, given most PFAS moves through groundwater, remediation activities will focus on managing PFAS movement within groundwater.

## Ongoing monitoring plan

The ongoing monitoring plan is an important part of the Bandiana Military Area PFAS management area plan. It sets out 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 found in the surrounding environment.





Monitoring on and around Bandiana Military Area occurs every May and October. Every May, 33 groundwater wells, 53 surface water locations and 12 sediment locations are sampled. Every October, 44 groundwater wells and 53 surface water locations are sampled.

In the long term, this sampling helps Defence, environmental regulators and the community understand if actions to reduce PFAS have been effective. It also informs where further investigation or remediation activities may need to be undertaken.

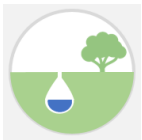
The ongoing monitoring plan is reviewed regularly and Defence updates the monitoring frequency and/or locations of sampling as required in consultation with the Environment Protection Authority (EPA) Victoria.

### Latest monitoring results

The monitoring results from sampling undertaken in May and October 2023 found that the nature and extent of PFAS on and around Bandiana Military Area is generally similar to previous years' findings.

### Number of samples collected and analysed

#### GROUNDWATER



Groundwater is water beneath the earth's surface. It often supplies bores, wells or springs.

73 samples collected during 2023.

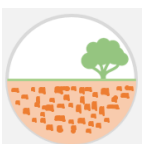
#### SURFACE WATER



Surface water is water that collects on the ground and can be in the form of creeks, rivers, lakes, wetlands and more.

93 samples collected during 2023.

#### SEDIMENT



Sediment is made of broken down remains of rocks, minerals and plants that is moved and deposited to a new location.

12 samples collected during 2023.

### What were the key findings?

Sampling in May and October 2023 found:

- Groundwater flows in a northwesterly direction in the southern part of Gaza Ridge Barracks (South Bandiana).
- Groundwater flows in an easterly direction in the northern part of Gaza Ridge Barracks (North Bandiana); and Wadsworth Barracks (East Bandiana).
- Groundwater levels were generally higher (i.e. closer to the surface) than previous monitoring results. This is likely caused by above average rainfall during the monitoring period.
- New maximum concentrations were reported in five groundwater monitoring locations on the base. Four locations were in the southern portion of Gaza Ridge Barracks and one location within the northern portion of Gaza Ridge Barracks. These new maximums were likely caused by above average rainfall experienced during, and prior to the sampling event, along with natural variability in the sampling.
- There were no new detections or maximum concentrations of PFAS in off base groundwater monitoring locations.
- One new maximum concentration was reported in an off base surface water sampling location on a residential property. Defence is working with this resident to minimise PFAS further moving onto their property. Otherwise, concentrations of PFAS in surface water and sediment samples were within historical ranges.

Health studies completed for Bandiana Military Area in 2020 found the exposure risk from PFAS to community members was low. The latest monitoring results indicate there is no change in risk to community members. However, community members are advised to continue following the precautionary health advice issued by EPA Victoria. Further information on this advice can be found on the following page.



## Ongoing monitoring report

Defence publishes all monitoring results in an Ongoing Monitoring Report on its website. The report covering monitoring results between 2021 – 2022 is currently being finalised by Defence prior to further review of the data by EPA Victoria.

## Further monitoring

Groundwater, surface water and sediment monitoring will continue to occur every six months at the locations identified in the ongoing monitoring plan.

The latest round of monitoring was recently completed. The results are being processed by an independent laboratory and will be recorded in Defence's ongoing monitoring report.

## EPA Victoria precautionary advice

EPA Victoria has issued precautionary advice for carp consumption from the Kiewa River.

### Precautionary advice

Scan the QR code or visit the EPA website via the link below to learn more about the precautionary advice: [www.epa.vic.gov.au/about-epa/publications/1735-2](http://www.epa.vic.gov.au/about-epa/publications/1735-2)



Defence has installed signs along the Kiewa River regarding EPA advice.



**Precautionary signage installed along the Kiewa River.**

## Next steps

Over the next 12 months, Defence will:

- finalise a remediation action plan which will set a framework for remediation and management works across the base
- commence remediation works at the former fire training area at Gaza Ridge Barracks and the current fire station at Wadsworth Barracks
- continue ongoing monitoring, with the next scheduled sampling to occur in October 2024
- continue to keep the community informed about the management and ongoing monitoring of PFAS on and around the Bandiana Military Area.

## Looking for more information?



Scan the QR code to find out more about Defence's PFAS Investigation and Management Program or visit: [www.defence.gov.au/pfas/](http://www.defence.gov.au/pfas/)

## Alternatively, you can contact:



1800 333 362



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

## Translating and Interpreting Service (TIS National)

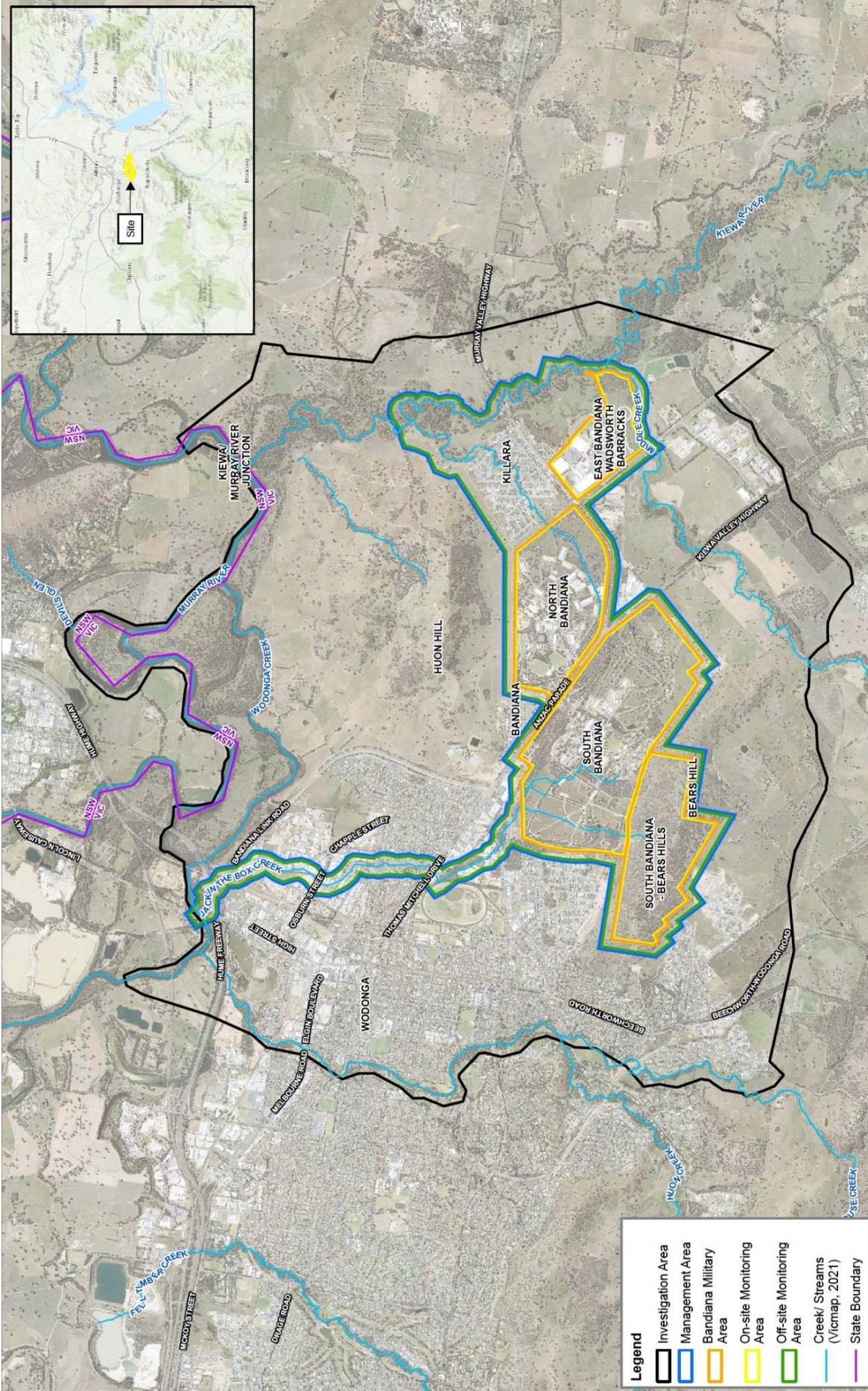
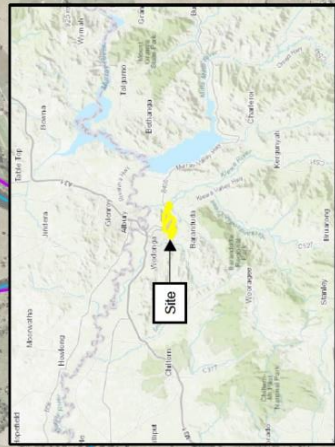


For translation assistance, TIS National provides interpreting services 24 hours a day via telephone from anywhere in Australia for the cost of a local call\*.

For more information contact 131 450 or visit: [www.tisnational.gov.au](http://www.tisnational.gov.au)

\*Calls from mobile phones may attract a higher rate.





## Bandiana Military Area – Base boundary and management area