

Williamtown RAAF Base contamination - FAQs

These FAQs have been developed by NSW Government agencies and are updated and revised frequently as new information is received. If you are looking for specific information in this document, please click one of the subject links below:

- [Investigation questions](#)
- [Precautionary advice questions](#)
- [Health questions](#)
- [Water questions](#)
- [Produce and livestock questions](#)
- [Fisheries questions](#)
- [Investigation progress questions](#)
- [enHealth guidelines questions](#)
- [NSW Government contact details & links](#)

INVESTIGATION FAQs

1. What are the chemicals involved?

PFAS (per- and poly-fluorinated alkyl substances) are a group of manufactured chemicals that have been used as fire retardants, water proofers and stain resistsants since the 1950s in a range of common household products and specialty applications. This includes non-stick cookware; fabric, furniture and carpet stain protection applications; food packaging; and some types of fire-fighting foam.

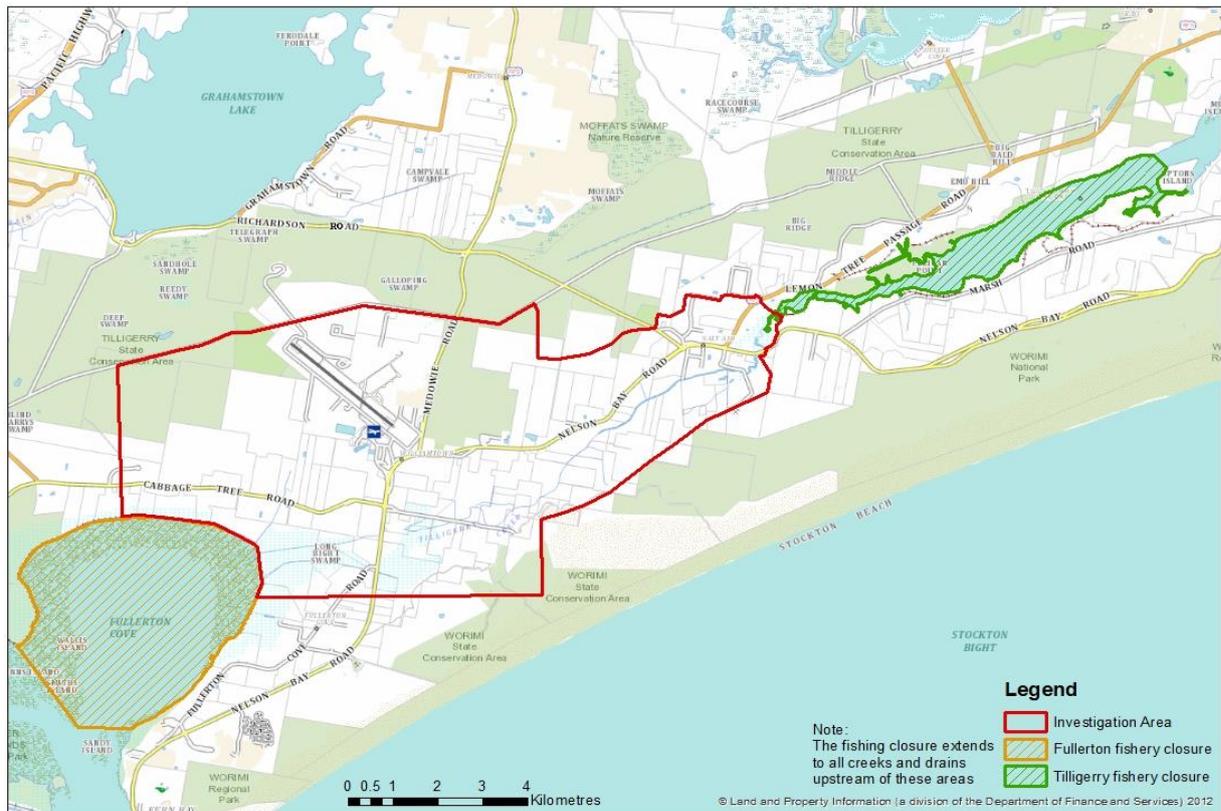
Perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA) and perfluorohexane sulfonate (PFHxS) are three of the main PFAS of concern that were historically used in fire-fighting foams. They were used at RAAF Williamtown in fire-fighting training and operations prior to a change in Defence policy in the early 2000s.

Until recently, this group of chemicals was known as “perfluorinated chemicals”, or “PFCs”. The name change helps to avoid confusion with another group of chemicals that is relevant to climate change, which are also known as “PFCs”.

2. What is the Investigation Area?

The [Investigation Area](#) was determined through consultation between the EPA, Expert Panel, Hunter Water, and DPI. The Investigation Area is based on surface water and ground water results for PFAS levels, as well as surface water drainage patterns and groundwater flow directions in the region.

The below map (*updated 21 Oct 2015*) highlights the area under investigation for potential groundwater contamination and the affected adjacent fisheries.



3. Will the Investigation Area be changed?

Defence's recent reports have confirmed that the Investigation Area, established by the NSW Government in October 2015, is appropriate, and therefore will remain unchanged. As more information is collected over time, it might be possible to refine the precautionary advice and where it applies. Human health will continue to be best protected by following NSW Government precautionary advice.

4. How long will this contamination last for?

Some level of contamination is likely to remain in the environment for many years. Human health will continue to be best protected by following NSW Government precautionary advice.

5. Does heavy rain or flooding make the contamination worse?

The EPA has conducted limited sampling and found that levels of PFAS were consistent in pre flood and post flood conditions.

PRECAUTIONARY ADVICE FAQs

6. What are the findings of the Human Health Risk Assessment and the Environmental Site Assessment reports?

On 9 August 2016, the Department of Defence released a Human Health Risk Assessment (HHRA) report and Environmental Site Assessment (ESA) report.

The HHRA examines possible pathways for human health exposure to PFAS arising from contamination at the Williamstown RAAF Base. This includes possible exposure through water such as drinking and swimming, and through food consumption such as seafood, fish, meat, eggs, fruit & vegetables. The report aims to provide the NSW Government and Expert Panel with the information needed to review and refine the precautionary advice and extent of the Investigation Area that was established in October 2015.

The ESA looks at where the contamination is and how the contamination is moving through the environment.

The Expert Panel and the NSW Government have conducted a preliminary review of the HHRA and confirmed that the precautionary advice, fishing closures and Investigation Area identified in October 2015 will remain in place.

In addition to the current precautionary advice that residents should not consume eggs or milk produced in the Investigation Area, the two reports show the need for further work and analysis to be undertaken by Defence on fruit and vegetables, and meat and poultry produced in the Investigation Area. Residents are now advised to moderate their consumption of home grown fruit and vegetables, meat and poultry while further work and analysis is undertaken by Defence.

The reports also reinforce that the drinking or consumption of groundwater is a major exposure pathway for contamination and highlights the importance of avoiding the incidental swallowing of groundwater, particularly by children, when showering, bathing and swimming.

Following the review of these reports, the EPA has written to Defence outlining data gaps and requesting additional testing be undertaken so conclusive advice about the long term exposure and health risks from PFAS can be provided to the community.

7. What advice is being given to residents in the area?

The NSW Government is recommending that residents from the Williamstown community follow precautionary advice to minimise their exposure to PFAS chemicals originating from the Williamstown RAAF Base. This advice is summarised in the following table:

Dietary advice	Health/behavioural advice
<p>Water consumption</p> <ul style="list-style-type: none"> ✓ Town water ✗ Do not use groundwater, bore water or surface water for drinking or cooking <p>Home grown produce</p> <ul style="list-style-type: none"> ✗ Do not eat eggs or drink milk produced in the advisory area - Moderate consumption of fruit and vegetables, meat and poultry produced in the advisory area while further work and analysis is undertaken – particularly in areas of higher PFAS contamination <p>Seafood and fish produce</p> <ul style="list-style-type: none"> ✓ Commercially harvested oysters ✗ Do not eat fish, prawns or <i>wild</i> oysters caught in the Investigation Area 	<ul style="list-style-type: none"> ✓ Skin contact with groundwater, surface water, soils, muds and sediments ✓ Breathing in dust from soil ✓ Using rainwater from roofs for drinking, cooking and watering ✗ Avoid swallowing groundwater or surface water when bathing, showering, swimming and paddling ✗ Fishing closures remain in place

A previous ban on eating harvested oysters was lifted after test results presented to the Expert Panel showed oysters from the Tilligerry Creek Harvest Area did not present a food safety risk.

The precautionary advice will be reviewed once the Federal Department of Health's review of the EnHealth guidelines has been completed at the end of August 2016. In addition, the EPA has requested additional testing be undertaken by Defence so conclusive advice about the long term exposure and health risks from PFAS can be provided to the community.

8. **Is breast milk safe? Can I breastfeed my baby?**

The HHRA report modelled potential exposure to PFAS from breastmilk. The report did not identify a health risk associated with breastfeeding. This is in line with previous advice that mothers should continue breastfeeding their baby and that there are significant benefits from breastfeeding.

9. Is it safe to inhale dust, even if I work/live in a dusty environment?

The intake of PFAS from the inhalation of dust is considered negligible as an exposure pathway that could impact human health in the Williamstown Investigation Area.

HEALTH FAQs

10. What are the potential health impacts from PFAS?

There is currently no consistent evidence that exposure to PFAS causes adverse human health effects. However, based on the evidence from animal studies, potential adverse health effects cannot be excluded.

Much of the research on humans has been done with people who were exposed to relatively high levels of PFAS through their work. Workers involved in the manufacture or use of PFAS usually have higher blood PFAS levels than the general public. Studies on PFAS workers have looked for effects on cholesterol levels, male hormones, heart disease, liver changes and other effects, including cancer. These studies have not consistently shown that PFAS exposure is linked to health problems.

The existing limited studies on PFHxS suggest that this chemical can cause effects in laboratory test animals similar to the effects caused by PFOS. However, based on available studies, PFHxS appears to be less potent in animal studies than PFOS.

For more information visit

www.health.nsw.gov.au/environment/factsheets/Pages/pfos.aspx.

11. Is there a test to determine any health effects?

There is no test to determine if you are likely to have any health effects from exposure to PFAS. There are no medical conditions that have been proven to be causally associated with PFAS exposure in humans. For more information visit

www.health.nsw.gov.au/factsheets/Pages/RAAF-site-contamination-faq.aspx.

12. When can I get my blood tested?

The Federal Government has announced funding for a voluntary blood testing program. Questions about the program should be directed to the Department of Defence.

13. What is a TDI?

A TDI or Tolerable Daily Intake is the amount of a substance which a person, based on the best available evidence, can be exposed to per day over a lifetime, without appreciable health risk.

For PFAS such as PFOS and PFOA, exceeding the TDI does not necessarily mean health effects will occur, because in calculating the TDI value, a number of large safety factors have already been put in to add extra protection to people.

Given that PFAS are persistent for a long time in the environment and the human body, it is important to reduce exposure wherever practicable, even if the TDI is not exceeded. The NSW Government's precautionary guidelines aim to minimise the community's exposure to these substances.

For more information please see the enHealth statement on PFAS human health reference values at www.health.nsw.gov.au/environment/factsheets/Documents/pfas-interim-health-values-ahppc.pdf

14. What should I do if I think I have exceeded the TDI?

Exceeding the TDI for PFAS does not mean that you are going to develop a health problem, as it is not predictive of disease for an individual person. It does indicate that you are probably consuming an undesirable concentration of PFOS or PFOA. Consuming these chemicals at these concentrations over a very long period is not advised.

It is important to note that there is no consistent evidence that exposure to PFAS causes adverse human health effects even at concentrations higher than those likely to occur within Australian communities.

The NSW Government precautionary guidelines aim to minimise the community's exposure to these substances.

15. Should I seek medical advice if I believe I am over the TDI?

Your general practitioner is best placed to assess your individual medical needs, and health checks and management should be undertaken in line with normal medical practice.

It is important to note that there is no consistent evidence that exposure to PFAS causes adverse human health effects even at concentrations higher than those likely to occur within Australian communities.

There is no test that can tell you if your exposure to PFAS will lead to any health outcomes. Blood tests to determine the level of PFAS in your blood have no current value in informing clinical management, including diagnosis, treatment or prognosis. There is also no accepted clinical treatment to reduce levels of PFAS in your body.

Human health will continue to be best protected by following NSW Government precautionary advice.

16. Where can I get mental health support?

The NSW Government has established a dedicated support line for anyone with concerns about the contamination. Residents can access free support through the Fern Bay Medical Centre, 111 Nelson Bay Rd, Fern Bay. Appointments can be made by calling 0417 494 576 (Monday to Friday from 8am to 4pm). A GP referral is not necessary.

After hours, the Hunter New England Mental Health contact centre is available 24/7 on 1800 011 511. For more information visit www.hnehealth.nsw.gov.au/News/Pages/MR16-04.aspx.

WATER FAQs

17. Can I safely drink water or prepare food with water from my bore?

No. As a precautionary measure, the NSW Government is advising that people within the Investigation Area should not drink or prepare food from private water bores, or water from dams, ponds, creeks or drains. Town water is safe to use.

NSW Health recommends that residents should not use their bores as a source of drinking water, as there may also be other hazards in bores, other than PFAS.

18. Is it safe to shower with groundwater from my bore?

Skin contact is fine, however the HHRA reinforces that the drinking or consumption of groundwater is a major exposure pathway for contamination and highlights that incidental swallowing, particularly by children, should be avoided when showering and bathing in groundwater.

People should use town water to shower where available.

19. Is it safe for me or my children to swim in creeks and dams?

Skin contact is fine, however the HHRA reinforces that the drinking or consumption of ground and surface water is a major exposure pathway for contamination and highlights that incidental swallowing, particularly by children, should be avoided when swimming in groundwater. There may also be other hazards in creeks and dams, other than PFAS.

20. Is it safe to swim in pools filled with groundwater or play under sprinklers from groundwater?

People should not use groundwater to fill swimming pools in the Investigation Area as incidental ingestion (swallowing) may inadvertently occur. This is particularly important for children. People should use reticulated or tank water to fill pools, where available.

21. What if I don't have access to the town water supply?

The NSW Government is funding a program to connect properties inside the Investigation Area to reticulated water. Hunter Water is currently in the process of connecting 165 properties in the Investigation Area.

The Department of Defence is providing bottled water for residents without a town water connection. If you don't have a town water supply connection and you rely solely on bore water, please contact the Department of Defence on **1800 011 443**.

22. What if I am not sure if my water is bore or town supply?

If you are unsure about whether or not you are connected to the town water supply, please contact Hunter Water on **1300 657 657**.

23. Is the Government conducting further testing of bores and drains?

Yes – the Department of Defence will be conducting ongoing testing of ground water bores and surface waters in the area.

24. What will the Government do with the information it collects on bore water use?

Information is being collected by the Department of Defence for the purpose of investigating potential groundwater contamination and understanding groundwater use patterns in the Investigation Area. This information is not being collected for regulatory or billing purposes, and will not be provided to DPI - Water beyond the extent required to enable the provision of expert advice to assist with the management and response to relevant groundwater contamination concerns.

25. Will I be charged a licence or administration fee for my groundwater bore if I ask for testing?

Land holders are advised to have correct approvals in place for all bores, and where applicable, licences for the extraction of water, should it be used for purposes other than domestic and stock. Registering your bore assists the management of groundwater, and enables relevant information to be provided to owners in a timely manner. The cost of a basic landholder rights bore application is currently \$241.83.

Please contact DPI Water should you have any specific questions in regards to licencing and approval requirements for groundwater bores on **1800 353 104**.

26. Should I be concerned if I see foam in the drains?

PFAS chemicals are not visible in water and do not produce foam at the concentrations identified around Williamtown RAAF Base. Skin contact with any water or foam in the drains does not present a health risk. The EPA has referred the results of its recent testing of foam to the Williamtown Expert Panel for consideration and has raised the issue with Defence about further testing around Moors Drain.

PRODUCE & LIVESTOCK FAQs

27. Can I eat my home grown fruit and vegetables?

The HHRA has not identified a health risk associated with fruits and vegetables, however modelling suggest there may be increased exposure for residents who have easy access to their home grown produce and consume significant quantities over long periods of time.

The Expert Panel has advised that because home grown produce can be readily available and consumed in significant quantities, residents should moderate their consumption of home grown fruit and vegetables and home-produced meat and poultry, while further work and analysis is undertaken by Defence.

28. Can I sell my fruit and vegetables from the Investigation Area?

Yes. There are no restrictions on selling produce grown in the Investigation Area.

29. Is it safe to eat eggs from local chickens?

No. Do not eat eggs produced in the Investigation Area.

30. Is it safe to drink home produced milk from cows and goats?

No. Do not drink milk from cows or goats produced in the Investigation Area.

31. How do I dispose of eggs or milk that are sourced from within the Investigation Area?

It is recommended that eggs and milk are disposed of through your usual general waste bins. These bins have a red lid in the Port Stephens Council area.

32. Is it safe to eat meat from poultry and livestock from the Investigation Area?

The HHRA has not identified a health risk associated with meat and poultry, however modelling suggests there may be increased exposure for residents who have easy access to their home grown produce and consume significant quantities over long periods of time.

The Expert Panel has advised that because home grown produce can be readily available and consumed in significant quantities, residents should moderate their consumption of home-produced meat and poultry, while further work and analysis is undertaken.

33. Can I sell my agricultural livestock?

Yes. There are no movement restrictions or quarantines imposed on livestock from the Investigation Area.

34. Are there any commercial produce facilities in the area?

No. There are no commercial dairy, meat, chicken or egg producers within the Investigation Area.

35. Will my animals be harmed by drinking water from my bore, creek or dam in the Investigation Area?

There are no proven adverse animal welfare effects from drinking this water. However, as a precaution, if you have an alternative water supply, then this should be used.

There are many causes of ill thrift and ill health in animals. If your animal is unwell, you should ask your veterinarian to investigate.

FISHERIES FAQs

36. What are the affected fisheries?

As a precautionary measure to limit the risk of PFAS exposure, the Fullerton Cove and the upper Tilligerry Creek areas are closed for both commercial and recreational fishing until 30 September 2016.

37. Are fish, oysters, prawns and crabs being tested?

To inform the HHRA, DPI Fisheries and the NSW Food Authority sampled a diverse range of fish and aquatic species in accord with Expert Panel requirements to check PFAS levels.

Oysters were also tested and early results were presented to the Expert Panel who confirmed that farmed oysters are safe to eat and do not present a PFAS health risk. As a result an initial ban on the sale of oysters from the commercial oyster farming area of upper Tilligerry Creek was lifted on 3 October 2015.

38. Can I eat fish, prawns or oysters from the Investigation Area?

The precautionary advice to not to eat fish, prawns or wild oysters in the Investigation Area remains in place.

Commercially harvested oysters from within the Investigation Area are able to be eaten.

The ban on the sale of oysters from the commercial oyster farming area of the upper Tilligerry Creek was lifted on 3 October 2015. This followed an assessment of results by the Expert Panel.

39. When can I fish recreationally in Fullerton Cove/Tilligerry Creek again?

Recreational fishers will be advised when there are changes to current fishing closures.

Based on a more thorough review of the data and the Human Health Risk Assessment by the Expert Panel and NSW Government, the closures may be reconsidered.

40. When can I fish commercially in Fullerton Cove/Tilligerry Creek again?

Commercial Fishers will be advised when there are changes to current fishing closures.

Based on a more thorough review of the data and the Human Health Risk Assessment by the Expert Panel and NSW Government, the closures may be reconsidered.

INVESTIGATION PROGRESS FAQs

41. What is the NSW Government doing about the contamination issue at Williamstown?

Ensuring a multi-agency response



The NSW Environment Protection Authority (EPA) is leading the NSW Government's response to the contamination issue at Williamtown. This has included a range of actions, such as putting in place precautionary advice in October 2015 and ensuring Defence conducts a thorough investigation of the contamination in accordance with NSW Government requirements.

Other NSW agencies involved in the work include NSW Health, the Department of Premier and Cabinet, the Department of Primary Industries (DPI), NSW Food Authority and Hunter Water.

Establishment of the Expert Panel

The NSW Government has established an Expert Panel Chaired by the NSW Chief Scientist & Engineer, Mary O'Kane, to provide expert advice to the EPA. The Expert Panel's members include NSW Health, the Department of Primary Industries, NSW Food Authority, Hunter Water and independent experts in hydrology and toxicology.

Commitment to working with the community

Parliamentary Secretary for the Hunter Scot MacDonald is overseeing the Community Reference Group (CRG) which is acting on behalf of the Williamtown community and formally engaging with and providing input to the Expert Panel. In addition to community members, representatives from the Department of Defence and NSW Government agencies attend CRG meetings.

42. Why can't the EPA make Defence clean up the PFAS contamination?

The Williamtown RAA Base contamination differs from most other contaminated sites in NSW in that the EPA, as a State authority, has no regulatory powers over the Commonwealth Department of Defence. This limits the EPA's ability to direct Defence's actions and response times. However the EPA will continue to relay the NSW Government's and the community's expectation that Defence appropriately manage the contamination and its consequences, and progress containment and remediation options.

The NSW Government has written to Defence outlining expectations that further work into containment and remediation options proceed as a priority.

43. When will more fish, meat, eggs, fruit and vegetable testing be done?

The NSW Government expects Defence to do more testing and sampling as a priority and has written to Defence outlining these expectations.

44. What remediation work will be done to stop contamination leaving the base?

The NSW Government understands that Defence has commenced building a water filtration plant to reduce the amount of contaminated water leaving the RAAF Base. Further remediation technology is also being trialled by Defence.

The NSW Government has written to Defence outlining expectations that further work into containment and remediation options proceed as a priority.

45. What remediation work will be done for people with contamination on/near my property?

The NSW Government has written to Defence outlining expectations that further work into containment and remediation options proceed as a priority.

46. Why were PFHxS and PFHxA only recently added as a chemical of concern?

Perfluorohexane sulfonate (PFHxS) and Perfluorohexanoic acid (PFHxA) are two other chemicals within the PFAS group. They have been used in a number of products including fire-fighting foams.

There is some evidence from animal studies that suggest PFHxS can have health impacts similar to PFOS. This led to PFHxS being included in the enHealth guidelines and the HHRA.

PFHxA has significantly lower toxicity than PFOS, PFOA and PFHxS and does not add significantly to the health risk.

47. Why have only 10% of tests covered PFHxS?

When the initial sampling was done, this chemical did not form part of the required tests.

The NSW Government expects that Defence will test more extensively for PFHxS now that it is listed as a chemical of potential concern.

48. Who will do more testing on PFHxS and PFHxA and when?

This is a matter for Defence. The NSW Government expects that Defence will test more extensively for PFHxS and PFHxA now that they are listed as chemicals of potential concern.

49. How harmful are all the other PFAS chemicals that haven't been tested properly?

The NSW EPA understands that in carrying out the HHRA, we Defence sought independent expert advice on the chemicals to include in the assessment.

There are hundreds of perfluorinated substances but only a small number are considered chemicals of potential concern, given their toxicity and persistence.

ENHEALTH GUIDELINES FAQs

50. Who is responsible for setting safe guidelines for per- and poly-fluoroalkyl substances (PFAS) in Australia?

The Environmental Health Standing Committee (enHealth) is a Federal standing committee of the Australian Health Protection Principal Committee (AHPPC) is responsible for providing agreed environmental health policy advice.

Members of the enHealth committee include senior public health officials from the Commonwealth, states and territories, the New Zealand Ministry of Health and the National Health and Medical Research Council (NHMRC).

Development of recommendations on PFAS and human health toxicity values was undertaken by a group of toxicologists working with the enHealth members, representatives from CRC Care, Food Standards Australia New Zealand and the Australian Government Department of Health and Department of Environment.

51. Why are the enHealth guidelines different to the US EPA values?

The Federal Government is currently reviewing the EnHealth Guidelines and has committed to providing an outcome by the end of August 2016.

EnHealth has adopted, on an interim basis, the European Food Safety Authority (EFSA) TDIs, as it was concluded that EFSA's guidelines are more appropriate for use in Australia.

For more information on how the enHealth guidelines were established, please visit: <http://www.health.nsw.gov.au/environment/factsheets/Documents/pfas-interim-health-values-ahppc.pdf>

52. Will the guidelines change as more research is done on these chemicals?

Guidelines can only ever reflect the most current validated scientific knowledge. The guidelines may need to be updated or refined over time as new information and data become available.

53. Do the new guidelines change any NSW Government precautionary advice?

Regardless of the guideline values, human health in Williamtown is best protected by avoiding or reducing exposure through the precautionary approach recommended by the NSW Government.

CONTACT DETAILS & LINKS

Where should I go for further information?

- [NSW EPA information and advice](#)
- [NSW Health: enHealth factsheet on PFAS](#)
- [NSW Health: PFOS and PFOA Factsheet](#)
- [EnHealth statement on PFAS guidelines](#)
- [Information on what NSW DPI is doing and Information for water users and primary industries](#)
- [NSW Health Fact Sheet: PFOS and PFOA – Williamtown RAAF Site Contamination](#)

Who should I call if I have concerns?

For more information, please contact:

- NSW Department of Defence on **1800 011 443**
- NSW Environment Line on **131 555**
- NSW Food Authority Helpline on **1300 552 406**
- HNE Support on **1800 011 511**
- HNE Public Health Unit on **1300 066 055**
- DPI Fisheries on **4982 1232**
- Hunter Water on **1300 657 657**