

Chapter 2

Background

Introduction

2.1 This chapter will provide a brief background to the inquiry. One of the focuses of the inquiry related to when government agencies and other stakeholders became aware of the nature of the PFOS/PFOA contamination at RAAF Base Williamtown and how they responded. A summarised timeline of these events is included.

PFOS and PFOA

2.2 Perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) are two types of man-made perfluorinated compounds (PFCs) or perfluorinated alkylated substances (PFAS).¹ These compounds have been used in a range of industrial, commercial and domestic products for decades, due to their ability to repel oil, grease, and water. In particular, high concentrations of PFOS and PFOA have been used to make aqueous film forming foam (AFFF), a component of firefighting foams. These firefighting foams have been used for nearly 50 years on Defence and civilian facilities in Australia due to their effectiveness in extinguishing liquid fuel fires.²

2.3 PFCs, including PFOS/PFOA, are chemically and biologically stable in the environment and resist typical environmental degradation processes. As a result, these chemicals are extremely persistent in the environment. PFOS/PFOA are water-soluble and can migrate readily from soil to groundwater, where they can be transported long distances. Studies have shown that PFOS/PFOA also bioaccumulate and biomagnify in wildlife and enter the human food chain.³

2.4 Due to these characteristics, PFOS/PFOA are regarded as 'emerging contaminants' or pollutants which are potentially a threat to human health or the environment.⁴ PFOS and PFOA are eliminated slowly from the human body, and concentrations of the chemicals in the body can increase over time if they are continuously consumed in food or water. They have been shown to have effects,

1 Buck et al, 'Perfluoroalkyl and Polyfluoroalkyl Substances in the Environment: Terminology, Classification, and Origins', *Integrated Environmental Assessments and Management*, October, 2011, pp 513–541.

2 Department of Defence, response to question on notice 93, Supplementary Budget Estimates, 21 October 2015, p. 2.

3 US EPA, *Emerging Contaminants Fact Sheet – PFOS and PFOA*, March 2014, p. 3.

4 US EPA, *Emerging Contaminants Fact Sheet – PFOS and PFOA*, March 2014, p. 1.

particularly in the liver, at low doses in animal tests but the scientific literature on the effect of PFOS/PFOA in humans does not give clear, unambiguous results.⁵

2.5 PFOS was added to Annex B of the Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention) in May 2009. This convention aims to protect human health and the environment from the effects of persistent organic pollutants (POPs). Australia is a party to the Stockholm Convention, but has not ratified this particular amendment. PFOA is currently being considered for listing under the Stockholm Convention.

2.6 As evidence of the health and environment risks has emerged, global manufacturers and other users have moved to replace long-chain PFCs (such as PFOS/PFOA) with shorter-chain PFCs which are currently considered less toxic and less bioaccumulative. However, PFOS/PFOA continues to be used in some circumstances.⁶

2.7 From the 1970s until the mid-2000s, the main AFFF product used by Defence at its facilities was 3M Lightwater which contains PFAS, including PFOS/PFOA. 3M Lightwater was gradually phased out and replaced by 'Ansulite', which contains significantly lower concentrations of PFOS/PFOA.⁷ In December 2011, Defence added PFOS/PFOA to its routine environmental monitoring, particularly at facilities where firefighting foams may have been used. In 2012, Defence detected PFOS/PFOA at RAAF Base Williamtown, near Newcastle in New South Wales (NSW).

2.8 RAAF Base Williamtown is headquarters to Australia's Air Combat Group and shares its runway facilities with the civilian Newcastle Airport. It is located approximately 15 km north of the city of Newcastle in a semi-rural setting with agricultural land, water catchment reserve and State Conservation Areas surrounding the base.⁸ It has been used as a military air base since its establishment in 1941. The base is a significant employer in the Port Stephens region and supports a number of related private sector operators and defence contractors. Approximately 3,500 fulltime personnel work onsite.⁹

5 NICNAS, *Submission 47*, p. 2.

6 NICNAS, *Submission 47*, p. 3.

7 URS Australia, Stage 2 report, p. 2.

8 URS Australia, Stage 2 report, p.1.

9 Ms Kate Washington MP, *Submission 32*, p. 1.

Summarised timeline of events

2.9 The following is a summarised timeline of events giving a brief background as to how government agencies became aware of the PFOS/PFOA contamination at RAAF Base Williamtown. It is not a complete list of all events and other timelines have been provided to the inquiry by Defence and New South Wales Environmental Protection Authority (NSW EPA).

Pre-2000

2.10 During the 1970s to the mid-2000s, firefighting foam containing PFOS/PFOA produced by the 3M company was used by Defence at RAAF Base Williamtown and other ADF facilities.

2000

2.11 In May 2000, the 3M company, the primary manufacturer of PFOS, announced a voluntary phase out following negotiations with the US Environment Protection Agency (US EPA). This was the result of emerging scientific evidence about its persistence in the environment and long-term health and environmental effects.¹⁰ Following this decision, in July 2000, the Organisation for Economic Cooperation and Development (OECD) Task Force on Existing Chemicals member countries (including Australia) agreed to informally work together to collect information on the environmental and human health hazards of PFOS to produce a hazard assessment.¹¹

2002

2.12 The 3M Company, completed a voluntary phase-out of PFOS production in 2002.¹² In 2002, reports of fish-kills are observed by Defence environment management officers 'following the accidental, incidental or deliberate release of fire fighting foam [on Defence sites] into aquatic environments'.¹³

2.13 The initial OECD report on PFOS was finalised in November 2002. In particular, it described PFOS as 'persistent, bioaccumulative and toxic to mammalian species' and recommended further research to 'predict risk to humans'.¹⁴

10 US EPA, 'EPA and 3M announce Phase Out of PFOS', *Media Release*, 16 May 2000.

11 NICNAS, *Submission 47*, p. 3.

12 US EPA, *Emerging Contaminants Fact Sheet – PFOS and PFOA*, March 2014, p. 2.

13 *Submission 34*, p. 2.

14 OECD, Cooperation on Existing Chemicals, *Hazard Assessment of PFOS and its Salts*, 21 November 2002, p. 5.

2003

2.14 On 30 April 2003, the Department of Health's National Industrial Chemicals Notification and Assessment Scheme (NICNAS) released an alert recommending that PFOS/PFOA firefighting products such as AFFF be restricted to essential use only, and that AFFF should not be used for fire training/testing purposes.¹⁵

2.15 In May 2003, Defence's Environmental Stewardship, Environment, Heritage and Risk Branch prepared an internal report titled 'Environmental Issues Associated with Defence use of AFFF'. The key findings of this report include:

Defence uses [AFFF] product produced by the 3M company. This AFFF product contains non-biodegradable fluorosurfactants (specifically [PFOS and PFOA]) that are environmentally persistent, bioaccumulative and toxic to animals and humans. Both PFOS and PFOA have been implicated with a variety of cancers and toxic health effects in humans that have had long term exposure to products containing PFOS/PFOA. 3M are ceasing the production of this AFFF product in 2003, and Defence will have to source an alternative product. Appropriate drainage, containment and disposal of foam waste-water will still be required for any replacement foam product.

Current Defence AFFF use and waste management practices are inconsistent and generally fall below the best practice of other national and international organisations.

Across many Defence facilities AFFF waste-water is not appropriately collected or disposed of. Based on these past and current practices there is a risk that PFOS/PFOA has contaminated Defence land as well as neighbouring properties, creeks, dams, and reservoirs.¹⁶

2004

2.16 The Stockholm Convention on Persistent Organic Pollutants came into force on 17 May 2004, with Australia ratifying the Convention on 20 May 2004 and becoming a Party on 18 August 2004.

2.17 In 2004, Defence investigated alternative AFFF products to replace the 3M company product.

2007

2.18 Defence published *Environmental Guidelines for Management of Fire Fighting Aqueous Film Forming Foam (AFFF) Products* which acknowledged the

15 NICNAS, *Submission 47*, p. 4.

16 Sonia Colville and Nicole McCarron, *Environmental Issues Associated with Defence use of AFFF*, Environmental Stewardship, Environment, Heritage and Risk Branch, May 2003, p. 1 [emphasis in original].

potential adverse impacts associated with historical AFFF products and noted that 3M Lightwater must not be procured.¹⁷

2009

2.19 In May 2009, the Conference of the Parties to the Stockholm Convention on Persistent Organic Pollutants decided to amend the Convention Annexes to add nine new chemicals including PFOS.¹⁸ The decision was communicated to Parties on 26 August 2009. The Stockholm Convention characterises PFOS as 'extremely persistent and has substantial bioaccumulating properties...[i]t has a capacity to undergo long-range transport and also fulfils the toxicity criteria of the Stockholm Convention'. However, it provides for the production of PFOS in firefighting foam as an 'acceptable purpose'.¹⁹

2.20 In October 2009, Hunter Water sampled Pump Station 9 near RAAF Base Williamtown and conducted analysis for PFOS/PFOA. PFOA was found to be below the limit of detection. PFOS was found to be at a concentration of 0.03 micrograms per litre – marginally above the limit of detection (0.02 micrograms per litre).

2010

2.21 The then Department of Sustainability, Environment, Water, Population and Communities commenced consultations with interested stakeholders including state and territory government agencies, and affected industry, environment and public health groups in December 2010 regarding ratification of the amendment to the Stockholm Convention.

2011

2.22 In 2011, Defence included monitoring for PFOS and PFOA in its environmental activities. Routine monitoring in December 2011 finds two elevated detections on RAAF Base Williamtown.²⁰

2012

2.23 In February 2012, NSW Government established the NSW EPA as an independent statutory authority.

17 URS Australia, *Stage 2 Environmental Investigation*, 14 September 2015, p. 7.

18 *Report of the Conference of the Parties of the Stockholm Convention on Persistent Organic Pollutants on the work of its fourth meeting*, 8 May 2009, p. 68.

19 Defence, *Submission 87*, p. 15.

20 Defence, *Submission 87*, p. 15. Defence noted that, prior to this time, the levels of PFOS/PFOA were not known (due to inability to accurately measure).

2.24 In March 2012, results from routine monitoring by Defence find elevated levels of PFOS/PFOA at 8 out of 12 locations on RAAF Base Williamtown and elevated levels in surface water leaving the base.²¹

2.25 On 2 May 2012, Defence contacts the NSW EPA to advise of surface water detections off-site at RAAF Base Williamtown and requests a meeting. On 10 May 2012, NSW EPA received confidential briefing that there is on-site PFOS contamination in soil and surface water leaving RAAF Base Williamtown and that a detailed Stage 1 contamination investigation is to be undertaken.²² NSW EPA requested data and reports and urges Defence to 'urgently notify Hunter Water, Port Stephens Council, the media, the community and other stakeholders'.²³

2.26 Also in May 2012 Defence advised Hunter Water that firefighting foams containing PFOS/PFOA were used on the base and there was the potential for contamination. In response to this advice, Hunter Water tested all of its bores in the Tomago Borefield for PFOS/PFOA on 22 May 2012. All samples, including the sample from Pump Station 9, returned nil detects for PFOS/PFOA.²⁴

2013

2.27 In January 2013, the NSW EPA receives advice from Defence regarding groundwater PFOS/PFOA contamination on part of RAAF Base Williamtown.

2.28 In March 2013, Defence receives the *Stage 1 – Conceptual Site Model for AFFF Contamination* prepared by GHD. The Stage 1 report findings regarding the contamination on RAAF Base Williamtown include:

Detectable PFOS and PFOA concentrations in groundwater are widespread on [RAAF Base Williamtown]. The highest concentrations associated with the fire training pit and fire training pad, trade waste facilities, Lake Cochran...and the former landfill.

Off-site groundwater samples including those nearby to [Hunter Water] extraction points reported no detectable PFOS or PFOA.

On-site and off-site surface water and drain sediments at [RAAF Base Williamtown] were found to contain detectable concentrations of PFOS and PFOA.²⁵

2.29 The report identifies a number of 'existing and/or potential future human receptors of contaminated soil and groundwater offsite'. These include:

21 *Submission 87*, p. 15.

22 Mr Barry Buffier, NSW EPA, *Committee Hansard*, 22 December 2015, p. 45; Defence, *Submission 87*, p. 5. Defence, *Submission 87*, p. 15.

23 NSW EPA, responses to questions on notice, 22 December 2015, p. 2.

24 Hunter Water, response to question on notice, 22 December 2015, p. 2.

25 GHD, *Stage 1 - Conceptual Site Model for AFFF Contamination*, March 2013, p. iii.

- consumers of potable water (however it notes, 'there is no evidence to suggest the [Hunter Water] bores contain PFOS or PFOA at detectable concentrations');
- recreational users of surface water e.g. swimming pools, recreational users of the receiving waters for groundwater and stormwater;
- use of irrigation water or stock-watering water via domestic/stock bores;
- consumers of marine biota; and
- consumers of terrestrial fauna.²⁶

2.30 Using a Defence Contamination Risk Assessment Tool, the Stage 1 report rates nearly all of the investigated sites as 'Very High' risk noting legislative compliance, reputation, environment and heritage and financial efficiency as 'key risk drivers'. The Stage 1 report outlines a large number of data gaps in understanding the risk of the contamination and proposes a sampling and analysis quality plan for further investigations.²⁷

2.31 Defence engages a contractor to undertake the Stage 2 Environmental Investigation. However, this contractor goes into business liquidation and was unable to continue (undated).²⁸

2.32 On 28 March 2013, the NSW EPA writes to Defence requesting advice on the management strategy for the contamination.

2.33 On 20 May 2013, the Port Stephens Council receives correspondence from Defence outlining the results of Stage 1 of the investigation.

The letter stated that detectable levels of Perflurooctane sultanate (PFOS) and Perfluorooctanoic acid (PFOA) were found in on-site and off-site surface water and drain sediments at RAAF Base Williamtown. It also stated off-site ground water samples showed no detectable PFOS or PFOA. The letter alerted Council officers to the issue but indicated that, at that early stage, further research was needed to understand the possible risks. The initial advice did not indicate immediate cause for alarm and that further investigations were underway.²⁹

2.34 On 22 May 2013, Hunter Water also received notification from Defence regarding contamination moving off-base.³⁰ On 24 May 2013, NSW EPA receives

26 GHD, *Stage 1 - Conceptual Site Model for AFFF Contamination*, March 2013, p. iii.

27 GHD, *Stage 1 - Conceptual Site Model for AFFF Contamination*, March 2013, pp 76-77.

28 *Submission 87*, p.5.

29 *Submission 26*, p. 3.

30 Mr Darren Cleary, Hunter Water, *Committee Hansard*, 22 December 2015, p. 10.

*RAAF Williamtown Stage 1 – Conceptual Site Model for AFFF Contamination from Defence.*³¹

2.35 On 20 June 2013, NSW EPA brief on groundwater contamination at RAAF Base Williamtown is received by the Hon Robyn Parker MP, NSW Minister for the Environment. The brief highlights that data gaps are significant in the understanding of risks posed by the PFOS/PFOA contamination and the lack of NSW EPA regulatory control of Defence.³²

2.36 On 18 November 2013, the NSW EPA raised the issue of contamination at RAAF Base Williamtown with the Department of the Environment. The letter concludes:

The EPA wrote to [Defence] on 26 September 2013 requesting an update on the Stage 2 works and proposing a meeting with all relevant agencies to outline and discuss the further investigation works. To date the EPA has received no response to this letter.

As you are no doubt aware, given that [Defence] is a Commonwealth Government agency the EPA does not has a regulatory role in this matter. This letter is to formally notify your agency of the current situation at the Williamtown RAAF Base for any further actions you may consider necessary.³³

2014

2.37 In April 2014 Defence engaged a new contractor, URS Australia, for the Stage 2 Environmental Investigation. Sampling commenced in May 2014.³⁴

2.38 In September 2014 Defence wrote to stakeholders including Newcastle Airport Limited, NSW EPA, Hunter Water, Port Stephens Council, NSW Department of Primary Industries (Office of Water), NSW Health (Hunter New England District) and NSW Office of Environment and Heritage to advise that the Stage 2 Environmental Investigation had commenced. In September 2014, Hunter Water makes the decision to embargo the use of Pump Stations 7 and 9 for water supply purposes based on the risk of drawing PFOS/PFOA contaminants towards borelines.³⁵

2.39 In November 2014, sampling undertaken on and off-site. These include 185 groundwater samples; 20 surface water samples; 230 soil samples; 35 sediment samples; 30 vegetation samples; 18 biota samples.³⁶

31 NSW EPA, response to questions on notice, 22 December 2015, Attachment A.

32 NSW EPA, response to questions on notice, 22 December 2015, Attachment A.

33 NSW EPA, responses to questions on notice, 22 December 2015, Attachment C.

34 *Submission 87*, p. 5.

35 Hunter Water, response to question on notice, 22 December 2015, p. 2.

36 *Submission 87*, p. 16.

2015

2.40 In May 2015, Hunter Water tested water from Pump Station 9 near RAAF Base Williamstown and detected PFOS/PFOA contaminants.

2.41 In May 2015, Defence prepares *Defence Contamination Directive #8 – Interim Screening Criteria*, which outlines interim screening levels for PFOS/PFOA on Defence site.

2.42 On 14 May 2015, URS Australia provides verbal overview of preliminary Stage 2 data to Defence. On 9 June 2015, Defence receives preliminary Stage 2 data.

2.43 In June 2015, the European Union submitted a proposal to the Persistent Organic Pollutants Review Committee to list PFOA and related compounds under the Annexes of the Stockholm Convention.³⁷

2.44 On 3 August 2015, Defence received draft Stage 2 report conducted by URS Australia. The report found:

PFAS are present across a range of environmental media both within the Base and in several off-Site areas. Investigations of source areas on-Base showed the presence of PFAS in soil at elevated concentrations immediately adjacent to these source areas.

Concentrations of PFAS in groundwater exceeding the human health screening criteria were found in proximity to on-Site source areas and in several off-Site areas. PFAS concentrations in groundwater in off-Site areas were generally lower than those within the Base, but also exceeded the screening criteria in some instances. Off-Site concentrations which exceeded the screening criteria were mostly confined to the land south of the Base and the Tilligerry State Conservation Area to the east. Given the likely direction of flow, the groundwater present in off-Site areas to the south and to the east was considered most likely to be impacted.

On-Site and off-Site surface water investigations show that surface water is a migration pathway for PFAS. In particular, PFAS were found in the drain adjacent to the Fire Training Pad, Lake Cochran, Dawsons Drain, Moors Drain and Tilligerry Creek. Off-Site migration of dissolved-phase PFAS in surface water appears likely to have resulted in impacted sediments at investigation locations downstream from the Base. Aquatic fauna sampled in these off-Site areas did not report PFAS concentrations exceeding the adopted ecological screening criteria.³⁸

2.45 However, the Stage 2 report cautioned that

37 Persistent Organic Pollutants Review Committee, *Proposal to list pentadecafluorooctanoic acid (CAS No: 335-67-1, PFOA, perfluorooctanoic acid), its salts and PFOA-related compounds in Annexes A, B and/or C to the Stockholm Convention on Persistent Organic Pollutants*, 9 June 2015.

38 URS Australia, *Stage 2 Environmental Investigation*, 14 September 2015, p. 143.

It should be noted that the presence of concentrations higher than the adopted screening criteria does not necessarily indicate an unacceptable risk. Rather, it indicates that potential exposures to these chemicals should be evaluated in greater detail, taking into account site-specific pathways of exposure.³⁹

2.46 It also highlighted that a number of data gaps are present which require further investigation. These included findings that:

The nature and extent of off-Site groundwater dissolved-phase PFAS impacts requires further assessment...;

The hydrogeological pathways between the Base and potential off-Site human and ecological receptors require more detailed investigation...;and

The nature and extent of off-Site surface water, sediment and aquatic fauna impacts from the Base boundary to Fullerton Cove and Tilligerry Creek requires further assessment.⁴⁰

2.47 On 4 August 2015, Defence sent the draft Stage 2 report to stakeholders NSW EPA, Hunter Water, NSW Department Primary Industries (Office of Water), NSW Health, Newcastle Airport. On 12 August 2015, Defence held a stakeholder meeting to go through the Stage 2 report.

2.48 On 3 September 2015, the NSW EPA advised Defence it was issuing a media release announcing precautionary measures that day. The media release stated that Defence had made NSW EPA aware that 'legacy fire-fighting chemicals had been found in some surface water, groundwater and in small numbers of fish around the Williamstown RAAF Base and Newcastle Airport'.⁴¹ The NSW EPA noted that, while 'at this stage any risk to human health appears to be low', it was taking a 'precautionary approach to this preliminary advice'. It announced:

In keeping with this precautionary approach the NSW Government is advising potentially impacted residents...to not drink bore water and to not eat fish caught in the nearby area or eggs from backyard chickens that have been drinking bore water in the area...

As a precaution, there will be a closure of commercial and recreational fisheries and oyster harvest for up to one month in both Fullerton Cove and the Upper Tilligerry Creek.

Potentially affected bores are isolated to an area covering part of the Tomago and Stockton sandbeds and there is no risk to the reticulated (town) water supply.⁴²

39 URS Australia, *Stage 2 Environmental Investigation*, 14 September 2015, p. 143.

40 URS Australia, *Stage 2 Environmental Investigation*, 14 September 2015, p. 145.

41 NSW Environmental Protection Agency, 'Department of Defence and NSW Government investigating chemicals around Williamstown RAAF Base', *Media Release*, 3 September 2015.

42 NSW Environmental Protection Agency, 'Department of Defence and NSW Government investigating chemicals around Williamstown RAAF Base', *Media release*, 3 September 2015.

2.49 Defence also issued a media release on 3 September 2015. It stated that '[p]reliminary tests have identified [PFOS] and [PFOA] in ground water south of Williamtown RAAF Base and Newcastle Airport' and '[t]hese substances have also been identified in Tilligerry Creek and Fullerton Cove and some aquatic life in these waterways'. The media release included:

Defence is aware that the NSW Government issued a media release today recommending that residents in the affected area avoid drinking bore water, eating fish caught from the Tilligerry Creek or Fullerton Cove or consuming eggs from backyard chickens on those properties in the area.

The health and safety of people who reside near our bases and Defence personnel who work, or have worked, at these bases is a high priority for Defence. Despite extensive research, scientific studies into the possible human health impacts are inconclusive.⁴³

2.50 On 16 September 2015, the NSW Government announced two reviews of the management of contaminated land sites. The first review, led by the NSW Chief Scientist, Professor Mary O'Kane and an Expert Panel, was formed to advise the NSW Government on the planned and ongoing management of the RAAF Base Williamtown contamination. The second review by Professor Mark Taylor of Macquarie University, would consider the EPA's implementation of the findings of the Auditor-General's 2014 report into managing contaminated sites.

2.51 On 30 September 2015, at the Tomago community consultation event, Air Commodore Steve Robertson is reported as stating 'Defence polluted here, Defence pays' in relation to the question of compensation for contamination.⁴⁴

2.52 On 1 October 2015, a Williamtown Contamination Investigation Community Reference Group (CRG) was established to 'support local communities to address concerns related to the detection of [PFOS] and [PFOA] in nearby surface water, groundwater and biota in the vicinity of the Williamtown RAAF base'. The CRG is headed by the Parliamentary Secretary for the Hunter, Mr Scot MacDonald MLC.

2.53 On 2 October 2015, the Expert Panel recommended 'lifting a temporary ban on oyster harvesting' but 'advised that a ban on commercial and recreational fishing should continue for the time being after some species were found to contain [PFOS] at levels which cause some concern'.

2.54 On 8 October 2015, the Expert Panel, after reviewing preliminary samples extended the NSW EPA investigative area to the east to the Tilligerry Creek fisheries closure area.⁴⁵

43 Department of Defence, 'Ground water contamination at RAAF Base Williamtown', *Media release*, 3 September 2015.

44 Michael McGowan, 'Defence to blame so it should pay: base boss', *Newcastle Herald*, 30 September 2015, available at: <http://www.theherald.com.au/story/3394545/defence-to-blame-so-it-should-pay-base-boss/> (accessed 18 January 2016).

2.55 On 20 October 2015, the EPA released preliminary surface and ground water investigation results. Bore and surface water sample water were generally consistent with the reported in the Stage 2 report undertaken by Defence, being highest near the base and decreasing at distance.

2.56 On 26 October 2015, Defence commenced Stage 2B environmental investigation. Over 900 samples are expected to be collected, along with completion of a Human Health Risk Assessment and an Ecological Risk Assessment.⁴⁶

2.57 On 27 October 2015, the Expert Panel recommended a further eight-month ban on fishing while human health risk assessment is undertaken. It stated:

The proposed ban on commercial and recreational fishing in the designated area is recommended to remain in place until 30 June 2016. Meanwhile, the Expert Panel has restated the need for local residents to heed other precautionary advice until the human health risk assessment is complete.

As such, residents who live inside 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)
- eat eggs from backyard chickens or milk from cows and goats that have been drinking bore water or surface water in the area; and
- eat fish, prawns or wild oysters caught in the nearby area.⁴⁷

2.58 The NSW Department of Primary Industries indicated 'the eight month fishing ban extension is devastating news for commercial fishers, many of whom have had no income these past eight weeks'. NSW EPA CEO Mr Barry Buffier stated:

The NSW Government is strongly committed to the "polluter pays" principle and Defence is the polluter in this case. As such, the EPA expects Defence to provide appropriate and timely financial assistance to members of the community and businesses who are adversely impacted due to pollution from the RAAF base. We are vigorously pursuing this.⁴⁸

2.59 On 4 November 2015, the Assistant Minister for Defence announced an assistance package for commercial fishers affected by NSW Government precautionary closures of Fullerton Cove and Tilligerry Creek.⁴⁹

45 NSW Government, *Williamstown RAAF Base contamination – FAQs*, 12 November 2015, p. 2.

46 Department of Defence, response to questions on notice, Question 12, pp 4-5.

47 *NSW Government Gazette*, No 92 of 30 October 2015, p. 3426.

48 NSW EPA, 'Williamstown Expert Panel recommends an extension to the fishing closures in Fullerton Cove and upper Tilligerry Creek', *Media Release*, 27 October 2015.

49 *Submission 87*, p. 17.

2.60 On 11 November 2015, the NSW EPA updated its advice that, as a precaution, residents and young children should not swim in pools filled with bore water or local creeks, dams, drain or ponds in the investigation area.⁵⁰

2.61 On 3 December 2015, the committee held a public hearing for the inquiry at Parliament House in Canberra.

2.62 On 8 December 2015, NSW Premier Mike Baird met with the Prime Minister and Defence minister to discuss Williamstown.

2.63 On 21 December 2015, Hunter Water released the results of tests confirming that Grahamstown Dam, a major water source for the Newcastle area, was free of firefighting foam contaminates.⁵¹

2.64 On 22 December 2015, the committee held a public hearing at the Newcastle City Hall in Newcastle.

2.65 On 23 December 2015, the NSW Government announced an assistance package for Williamstown residents affected by contamination from the RAAF base. This package includes a program to connect affected developed properties within the investigation area to town water, an investment in new contamination testing equipment and the deployment of additional community liaison staff to help address concerns of the local community.⁵²

2.66 Also on 23 December 2015, the interim report of Professor Mark Taylor into management of contamination at RAAF Base Williamstown is released (dated 14 December 2015).⁵³ While characterising the actions of the NSW EPA and NSW government agencies (from August 2015) as 'responsive, timely and appropriate', Professor Taylor's interim report highlights a lack of clarity in the regulation of contamination spreading from Defence land to non-Commonwealth owned land.⁵⁴

2016

2.67 On 8 January 2016, media reports that Defence is prepared to sign a trade wastewater agreement with Hunter Water for RAAF Base Williamstown 'which

50 *Submission 87*, p. 17.

51 Hunter Water, 'Hunter Water publishes PFOA/PFOS test results for local dams', *Media release*, 21 December 2015, p. 1.

52 NSW Government, 'NSW Government help for Williamstown residents', *Media release*, 23 December 2015, p. 1.

53 The Hon Mark Speakman MP, Minister for the Environment, 'Williamstown Interim Report Now Online', *Media release*, 23 December 2015.

54 Professor Mark Taylor, *Interim Report*, 14 December 2015, pp 25-28.

includes accepting unlimited liability for any damage caused by contaminants entering the sewer'.⁵⁵

55 ABC News, 'Defence officials ready to sign Williamtown trade wastewater deal', 8 January 2016, available at <http://www.abc.net.au/news/2016-01-08/defence-officals-ready-to-sign-williamtown-trade-wastewater-deal/7075490> (accessed 13 January 2016).