Chapter 3

Other Commonwealth, state and territory sites

3.1 This chapter begins with a brief update on evidence received by the committee on the environmental and human health effects of PFOS and PFOA and the issue of blood testing since the first report on Williamtown was tabled in February 2016. It then provides an overview of other Commonwealth, state and territory sites which have experienced PFOS/PFOA contamination; the different responses by the Department of Defence, state government authorities and Air Services Australia; and the regulatory frameworks in place to address legacy contamination. The chapter concludes with a committee view and recommendations.

The effects of PFOS/PFOA: update

3.2 Further evidence received by the committee regarding the risks that PFOS and PFOA pose to the environment showed a clear consensus among the experts. This is best summarised by the submission from the Commonwealth Department of the Environment (Environment) which described these chemicals as persistent, bioaccumulative and toxic, noting that 'they persist in the environment for many years, become more concentrated over time and accumulate up the food chain, and are toxic to organisms in the environment'.[1] However, there was considerably less consensus regarding the impact of PFOS and PFOA on human health.

3.3 Professor Jochen Mueller, a Professor of Environmental Toxicology at the University of Queensland, explained that risk is a function of the intrinsic properties of a chemical and the level of exposure and accumulation in the blood stream, noting that 'it is the dose that makes the toxin'.[2] Dr Brian Richards, the Director of the National Industrial Chemicals Notification and Assessment Scheme (NICNAS) agreed, emphasising that it is the level of exposure or 'dose' that is the subject of ongoing scientific debate, 'When we talk about what level of exposure a human person needs…to get what adverse health effects, that is the issue that is the subject of ongoing scientific debate'.[3]

3.4 On 15 March 2016, the Department of Health published the Environmental Health Standing Committee of the Australian Health Protection Principle Committee (enHealth) Guidance Statements on Perfluorinated Chemicals. The Guidance Statements asserted that 'there is currently no consistent evidence that exposure to PFOS and PFOA causes adverse human health effects', but that 'because these chemicals persist in humans and the environment, enHealth recommends that human

---

1 Department of the Environment, *Submission 114*, p. 2.

2 Professor Jochen Mueller, Professor of Environmental Toxicology, University of Queensland, *Committee Hansard*, 9 March 2016, p. 27.

3 Dr Brian Richards, Director, National Industrial Chemicals Notification and Assessment Scheme, *Committee Hansard*, 7 April 2016, p. 26.

exposure to these chemicals is minimised as a precaution'.[4] NICNAS noted that the scientific literature on the effects of PFOA and PFOS in humans 'does not give clear, unambiguous results'.[5]

3.5 Dr Mariann Lloyd-Smith, Senior Advisor at the National Toxics Network, refuted NICNAS and enHealth's assertions regarding the absence of evidence of the health impacts of PFOS/PFOA, advising the committee that 'there is more than ample evidence of the health impacts of PFCs':

> Animal studies show that PFOS causes testicular and pancreatic tumours—I think some of the first reports of the toxicity of PFOS were in 1978 in the literature, and by 1987 its carcinogens had already been shown in rats— as well as neurotoxicity and immunotoxicity, while human population studies have linked PFOS with reduced immune responses, preterm birth and reduced fertility. Similarly, for PFOA, there are numerous adverse findings from animal studies, while human population studies have focused on non-occupational exposure of women of reproductive age, and children, and these have demonstrated impaired neurodevelopment, delayed sexual development, immunotoxicity and obesity.[6]

3.6 Dr Lloyd-Smith stressed that there is a consensus amongst international scientists regarding the adverse human health effects of exposure to PFOS and PFOA.[7] The Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention)'s Review Committee recently determined that there was sufficient evidence of adverse human health effects for PFOA to meet the screening criterion on adverse effects. The Stockholm Convention's decision states that:

> (e) Adverse effects:
>
> (i) There is epidemiological evidence for kidney and testicular cancer, disruption of thyroid function and endocrine disruption in women (Steenland et al., 2012; Knox et al., 2011a, b; Melzer et al., 2010; ECHA 2014);
>
> (ii) There exists experimental evidence from animal studies (Sibinski et al., 1987 and Biegel et al, 2001, cited in ECHA, 2011) that PFOA induces tumours (e.g., in the liver). Developmental effects have been observed in mice (e.g. Lau et al., 2006). Postnatal administration of ammonium salts of PFOA (APFO) in mice indicated adverse effects on mammary gland development (delayed/stunted) in offspring. Repeated oral exposure of several species to PFOA showed adverse effects such as mortality, reduced

4 Department of Health, Environmental Health Standing Committee of the Australian Health Protection Principle Committee, *enHealth Guidance Statements on Perfluorinated Chemicals*, March 2016, p. 3.

5 National Industrial Chemicals Notification and Assessment Scheme, *Submission 47*, p. 2.

6 Dr Mariann Lloyd-Smith, Senior Advisor, National Toxics Network, *Committee Hansard*, 7 April 2016, p. 7.

7 Dr Mariann Lloyd-Smith, Senior Advisor, National Toxics Network, *Committee Hansard*, 7 April 2016, p. 8.

> body weight gain, cyanosis and liver cell degeneration and necrosis (ECHA, 2011). Mothers excrete PFOA via breast milk, which causes concern for the health of breastfed infants (ECHA, 2011).
>
> There is sufficient evidence that PFOA meets the criterion on adverse effects.[8]

3.7 Dr Lloyd-Smith described the government's assertion that there is no consistent evidence of harm on health as 'sheer dishonesty' suggesting that the government is reluctant to acknowledge international scientific studies and determinations regarding the adverse health effects of PFOS and PFOA due to fears of exposing itself to liability:

> The scientific data is there and there is certainly consensus with international scientists, because the POPs review committee is made up of international scientists put there by the various countries of the world. There is no debate or discussion there. I have suggested that perhaps the reason that government is trying to downplay the seriousness of this contamination is an attempt to downplay their liability, because once you accept that there is a problem they are going to have to resolve the problem with the residents living there. They cannot continue to live on contaminated land or to eat contaminated produce, and that means big liability.
>
> …
>
> Certainly with workers there is a major problem with liability and, even if you look at some of the firefighters, you will see that the levels of contaminants in their blood are well over those of the average population. So yes, there are liability issues, and I can only assume that that is why there is this downplaying. But I have to say, when I hear statements that there is no consistent scientific evidence of harm on health, that it is just sheer dishonesty. I am sorry, but I found it very, very difficult to listen to some of those comments.[9]

3.8 The lack of consensus regarding the effect of PFOS/PFOA on human health has resulted in conflicting advice and confusion regarding what is and is not considered safe. Shine Lawyers highlighted the lack of consistency in the health guidelines and statements issued by various Commonwealth and state agencies regarding PFOS and PFOA contamination. Mr Peter Shannon noted that:

> For instance, Defence says at paragraph 20 of its submission 87:

---

8 Stockholm Convention on Persistent Organic Pollutants, Persistent Organic Pollutants Review Committee, *POPRC-11/4: Pentadecafluorooctanoic acid (CAS No: 335-67-1, PFOA, perfluorooctanoic acid), its salts and PFOA-related compounds*, http://chm.pops.int/TheConvention/POPsReviewCommittee/ReportsandDecisions/tabid/3309/Default.aspx, accessed 22 April 2016.

9 Dr Mariann Lloyd-Smith, Senior Advisor, National Toxics Network, *Committee Hansard*, 7 April 2016, p. 8.

> Defence understands that the primary pathway for ingestion of this product is through drinking water or eating food containing these chemicals.

…Defence go on to say:

> Primary producers have not been advised to stop using bore water to water vegetables or crops, or as drinking water for stock.

That is notwithstanding that, some paragraphs earlier, they are saying that exposure through eating products is an issue. So there is a fair bit of inconsistency there. Part of the reason people are confused is that Defence has maintained that position. We then get the New South Wales Department of Health saying:

> Don't eat fish, prawns or oysters from the following areas—

And then they identify those with PFOAs contamination in relation to Williamtown.

> Don't drink or prepare food with bore water from this area. It is safe to drink water from the reticulated water supply (town water).

Which is clear in Williamtown.

> Don't eat eggs from your own back yard.

And:

> Don't drink milk from cows or goats grazing in this area.

Even the Queensland Department of Health, in a brochure that was circulated for a while and does not appear to be easy to locate anymore, says:

> There is no conclusive evidence at this stage which links exposure to these chemicals with long term adverse health effects in humans such as cancer.

It goes on to say:

> It is safe to drink water from the town water and to consume commercial produce from the Oakey area.

So there is this continual inconsistency.[10]

Blood testing

3.9 A number of submissions emphasised the need for blood testing for current and former workers and current and former nearby residents at sites where firefighting

10 Mr Peter Shannon, Legal Partner, Shine Lawyers, *Committee Hansard*, 9 March 2016, pp 19–20.

foams containing PFOS and PFOA have been used.[11] However, the enHealth Guidance Statements recommended against blood testing for PFOS/PFOA, stating that 'blood testing has no current value in informing clinical management':

> There is currently no accepted clinical treatment to reduce levels of PFCs in the human body. Given the uncertainty that PFCs are directly linked to adverse health outcomes, blood tests cannot determine if the PFC levels in a person's blood will make them sick now or later in life.
>
> Therefore, blood tests are not recommended to determine whether any medical condition is attributable to exposure to PFOS or PFOA and have no current value in informing clinical management, including diagnosis, treatment or prognosis in terms of increased risk of particular conditions over time.[12]

3.10 The enHealth Guidance Statements' advice regarding blood testing was supported by the New South Wales Chief Scientist and Engineer, Professor Mary O'Kane AC,[13] as well as the Queensland Government.[14] However, the Victorian Government advised the committee that it is utilising blood testing as part of its response to the contamination from the CFA Training College at Fiskville.[15]

3.11 Dr Lloyd-Smith disagreed, asserting that people who may have been exposed to PFOS/PFOA have a right to know what is in their bodies and that their doctors need to know if they have high levels of PFOS/PFOA. Dr Lloyd-Smith recommended that regular blood testing be conducted, especially for children and women of reproductive age.[16]

3.12 Shine Lawyers criticised the government for waiting for scientific certainty before taking action, asserting that 'any approach to health issues should be one adopting a precautionary approach and not one requiring scientific certainty before so acting'.[17] Mr Rory Ross, Senior Solicitor at Shine Lawyers, told the committee that

---

11 For example: Mr John and Mrs Sue Luke, *Submission 12*, pp 1–2; Ms Trish McLuckie and Mr Martin Vitiello, *Submission 21*, p. 3; Port Stephens Greens, *Submission 31*, p. 2; Ms Julie Bailey, *Submission 53*, p. 1; Ms Jennifer Spencer and Mr Chris Weise, *Submission 59*, p. 1; Ms Susan Dodt, *Submission 70*, p.1; Dr Michelle Chan, *Submission 75*, p. 2; Name withheld, *Submission 83*, p. 2; Mrs Samantha Kelly, *Submission 95*, p. 2; Ms Yvette Davidson, *Submission 99*, p. 1; and Name withheld, *Submission 107*, pp 1–2.

12 Department of Health, Environmental Health Standing Committee of the Australian Health Protection Principle Committee, *enHealth Guidance Statements on Perfluorinated Chemicals*, March 2016, p. 4.

13 NSW Chief Scientist and Engineer, answer to a question on notice, 3 December 2015 (received 21 April 2016).

14 Dr Jeanette Young, Chief Health Officer and Deputy Director-general, Prevention Division, Department of Health, Queensland, *Committee Hansard*, 9 March 2016, p. 34.

15 Victorian Government, *Submission 121*, Attachment 1.

16 Dr Mariann Lloyd-Smith, Senior Advisor, National Toxics Network, *Committee Hansard*, 7 April 2016, pp 8–9.

17 Shine Lawyers, *Submission 88*, p. 24.

overseas jurisdictions have conducted blood testing at all PFOS groundwater contamination events:

> In the Ohio Valley in the United States, we understand that 69,030 people were blood tested. I understand they were tested for nine different PFCs. In Decatur, Alabama, 155 people were blood tested for PFC exposure. The Pease trade port in New Hampshire, to date, 1,874 people have been blood tested. East Metro Minnesota, 205 people blood tested. Arnsberg, Germany, 179 children aged five to six, 317 mothers aged 23 to 49, and 204 men. Lake Mohne, in Germany, 99 men and six women. Ronneby in Sweden—and this is a very interesting study—3,000-plus residents have been blood tested, in a town with a population of approximately 9,000 people. It is a few kilometres downstream of a Swedish air base with a very similar type of groundwater issue. In addition to the 3,000 that have been tested there is a representative sample of 113 residents from that town, aged four to 83, who from 2014 to 2015 were blood tested every three months, and from 2015 to date and ongoing are being blood tested every six months.[18]

3.13 The enHealth Guidance Statements acknowledged that blood samples have been collected overseas as part of ongoing investigations into PFC contamination of soil and water, but stated that the value of blood testing is limited and frequent blood monitoring is of no value:

> It is noted that various organisations around the world have collected blood samples from people as part of ongoing investigations into PFC contamination of soil and water. The purpose of these tests was either a part of a defined research program, or to determine how much of these chemicals may be entering a person's body. The value of blood testing is limited to assessing exposure, such as monitoring over time, which may help to determine the success of exposure reduction measures. However, given the long biological half-life of PFCs, frequent blood monitoring is of no value.[19]

Contaminated sites

3.14 PFOS and PFOA contamination is not limited to Williamstown and Oakey. A number of other sites were identified to the committee, including Defence properties, airports, and other sites such as firefighting training grounds.

Defence sites

3.15 The Department of Defence advised the committee that it has undertaken a 'desktop review' of its entire estate to 'determine where and how [Aqueous Film Forming Foam] (AFFF) was used and whether it is possible that the historical use may have affected soil, groundwater and surface water'. This review identified:

---

18 Mr Rory Ross, Senior Solicitor, Shine Lawyers, *Committee Hansard*, 9 March 2016, p. 18.

19 Department of Health, Environmental Health Standing Committee of the Australian Health Protection Principle Committee, *enHealth Guidance Statements on Perfluorinated Chemicals*, March 2016, p. 4.

- 16 properties as 'category one' sites, which 'are known or likely to have used substantial quantities of PFOS/PFOA on site' (in addition to Oakey and Williamtown);
- 20 properties as 'category two' sites, where 'available information has shown some uncertainty as to either the potential for substantial PFOS/PFOA use on the property or for offsite migration'; and
- 31 properties as 'category three', which 'present a low potential for substantial PFOS/PFOA to be present either on or off the property'.[20]

3.16 The 16 'category one' properties identified for detailed environmental investigation of PFOS and PFOA are: Jervis Bay Range Facility, ACT; RAAF Base Richmond, NSW; Holsworthy Barracks, NSW; HMAS Albatross, NSW; RAAF Base Wagga, NSW; RAAF Base Tindal, NT; RAAF Base Darwin, NT; Robertson Barracks, NT; RAAF Base Townsville, QLD; RAAF Base Amberley, QLD; RAAF Base Edinburgh, SA; RAAF Base East Sale, VIC; Bandiana Military Area, VIC; HMAS Cerberus, VIC; HMAS Stirling, Fleet Base West, WA; and RAAF Base Pearce, WA. The order of the properties listed does not indicate the level of risk of potential contamination.[21]

3.17 Defence advised that it intends to commence detailed environmental investigations at three 'category one' bases in early 2016: RAAF Base Pearce in WA, RAAF Base East Sale in Victoria and HMAS Albatross in NSW.[22]

Airports

3.18 Airservices Australia advised that its investigations identified 56 sites where aviation rescue firefighting (ARFF) services at airports were provided, of which:

- 36 sites (both current and historical) have, or are suspected of having, perfluorinated compounds (PFCs) residues as a result of AFFF use; and
- 20 sites where AFFFs have not been used.[23]

3.19 A detailed list of current and historical sites where ARFF services were provided, including the foams used at each site, is included at Appendix 7.

Other sites

3.20 The committee received evidence that the historical use of firefighting foams containing PFOS and PFOA at other sites, such as firefighting training colleges, may have led to PFOS and PFOA contamination of the surrounding environment. The Victorian Government advised the committee that it is currently investigating potential PFC contamination at a number of sites across the state, primarily focusing

---

20 Department of Defence, *Supplementary Submission 87.1*, pp 3–4.

21 Department of Defence, answer to question on notice, no. 5, Foreign Affairs, Defence and Trade Legislation Committee, Additional Estimates Hearings, 10 February 2016.

22 Department of Defence, *Supplementary Submission 87.1*, p. 5.

23 Airservices Australia, *Submission 113*, p. 4.

on Victorian Country Fire Authority (CFA) sites such as the CFA Training College at Fiskville.[24]

Response of authorities

3.21 Commonwealth, state and territory governments have each responded to PFOS and PFOA contamination in different ways, with some states and organisations taking precautionary and proactive steps to address concerns regarding contamination, human health, and compensation, whilst others, such as Defence, have adopted a more guarded and reactive approach. The Department of the Environment advised the committee that it is 'collaborating with its Commonwealth and state and territory counterparts as part of a whole-of-government response to legacy contamination' and outlined the key areas of responsibility and actions taken:

- **health standards and measures**: the Commonwealth Department of Health and relevant state and territory agencies are considering appropriate health standards and measures associated with PFOS and PFOA contamination;
- **contamination on Commonwealth land**: Commonwealth landowners, such as Defence, are responsible for investigating and managing potential contamination on their sites;
- **contamination on state and territory land**: states and territories are primarily responsible for environmental protection and waste disposal where contamination or waste disposal occurs on state and territory land;
- **environmental protection regulation policy and standards**: Environment and relevant state and territory agencies are considering appropriate standards and measures association with PFOS and PFOA contamination. In addition, Commonwealth environmental assessment and approval processes will be required when any new action related to PFOS and PFOA is likely to have a significant impact on a nationally protected matter under Part 3 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act), including on Commonwealth land. This includes actions that are likely to significantly impact the 'whole of the environment', but only in those instances where the actions affect, or are taken on, Commonwealth land, or are carried out by a Commonwealth agency.[25]

Stockholm Convention Annex B

3.22 In 2010, PFOS was listed as one of nine new substances added as an Annex B restricted substance in accordance with the Stockholm Convention. A number of submissions raised concerns that, despite being a signatory of the Convention, Australia had not yet ratified this addition, calling for the amendment to be ratified

24 Victorian Government, *Submission 121*, pp 1–3.

25 Department of the Environment, response to question on notice, 7 April 2016, (received 21 April 2016), pp 1–2.

without delay.[26] Environment advised that any amendments to the annexes of the Stockholm Convention only enter into force for Australia once the domestic treaty making process is complete, which includes several stages of analysis, particularly where new implementation measures are required.[27] Environment advised that the process has been a 'substantial exercise' and that a Regulatory Impact Statement on PFOS is due for release in mid-2006:

> That has been a very substantial exercise and it is probably worth me just touching on some of the work that has gone into that. We have had to do a very significant amount of technical, scientific and regulatory analysis to underpin that, including looking at all of the restrictions and how they might work under the convention and the management options that would exist within Australia to deal with particular obligations. To do that we have looked at both validating and understanding better past and current uses of PFOS in Australia, in terms of how they have been used. We have looked at where imported articles have contained PFOS and how that impacts this. We have looked at how you could treat PFOS waste in Australia—the capability we have to deal with the waste. We have looked at trying to understand better the environmental fate of PFOS that has been used—where it ends up and what it affects. We have looked at whether PFOS is present in sewage treatment plant effluent or biosolids that are then subsequently spread onto land, and we have also been attempting to understand the mechanisms that might be used to implement particular measures if the government chooses to ratify.[28]

3.23 In 2015, PFOA passed the Annex D stage but will not be considered for listing by the Convention until 2019 at the earliest.[29]

Department of Defence

3.24 Defence's response to PFOS and PFOA contamination has been slow and reactive, seemingly focused on limiting its liability rather than addressing the needs of residents. Defence noted that unacceptable levels of exposure to PFOS and PFOA in soil, groundwater and surface water have yet to be determined in Australia and that it would not be feasible to determine appropriate long term management strategies until relevant health and environmental assessment criteria have been developed. Defence advised the committee that it is developing a national plan to manage known and potential PFOS/PFOA contamination across the Defence estate. The plan aims to 'investigate the extent of the contamination and the potential for human and

---

26 For example: Ms Deborah Sketchley, *Submission 7*, p. 1; National Toxics Network, *Submission 29*, p. 3; Port Stephens Greens, *Submission 31*, p. 2; Fire Protection Association Australia, *Submission 116*, p. 10; Mr Mike Willson, *Submission 119*, p. 1.

27 Department of the Environment, *Submission 114*, p. 3.

28 Mr Andrew McNee, Assistant Secretary, Chemicals and Waste Branch, Department of the Environment, *Committee Hansard*, 7 April 2016, p. 37.

29 Department of the Environment, *Submission 114*, pp 2–3.

environmental exposure' and to 'then identify appropriate interim and long term management strategies'.[30]

3.25 Defence advised that whilst remediation technologies are available for treatment of PFC contaminated soil, such as thermal desorption, and for the treatment of reasonably small amounts of waste water, 'there are no proven options in Australia for large scale remediation activities, particularly with regard to groundwater remediation'. Furthermore, Defence noted that any remediation plans would need to be site-specific due to differences in the hydrology and topography of each site. For example, at RAAF Base Williamtown, the high water table and complex interplay of surface water and ground water, presents further challenges to remediation. Defence assured the committee that it was continuing to work with industry to 'determine appropriate remediation options'.[31]

Compensation

3.26 Shine Lawyers criticised Defence's response, asserting that Defence 'cannot have it both ways'—if the risks regarding PFOS and PFOA contamination are serious enough to warrant advising against the consumption of groundwater, it must also be serious enough to warrant action taken to compensate those people whose groundwater has been affected. Shine Lawyers emphasised Defence's moral responsibility to take action:

> It surely cannot be moral or just to have Defence call national attention as it did in July 2014 (referenced also by the reports leading up to it) that the groundwater of Oakey was contaminated, to identify a spreading "plume", to advise people not to drink the water, to acknowledge publically the likelihood of affected property values and to say the health effects were uncertain – only to now say that all is well and "*sorry, we were worrying about nothing, but hey don't drink the water anyway just in case*".[32]

3.27 Defence advised that financial assistance is available to 'individuals and businesses whose livelihoods have been affected by the closure of Hunter River and Port Stephens fisheries in response to contamination at RAAF Base Williamtown' but noted that 'the question of compensation is separate to any financial assistance to affected parties' and that:

> In the event that individuals or businesses wish to make a claim for compensation against the Commonwealth, such claims will be handled by Defence in accordance Defence's obligations under the Attorney-General's Legal Services Directions.[33]

3.28 Defence informed the committee that it has received inquiries regarding compensation from people in Williamtown and Oakey but, as yet, no formal claims

30 Department of Defence, *Supplementary Submission 87.1*, p. 9.

31 Department of Defence, *Supplementary Submission 87.1*, pp 9–10.

32 Shine Lawyers, *Supplementary Submission 88.1*, p. 4.

33 Department of Defence, *Supplementary Submission 87.1*, p. 7.

for compensation have been made. When asked about its intentions to purchase properties and assets that have lost value as a result of contamination, Defence reiterated that, whilst it is engaged in talks with approximately 30 people regarding potential claims for losses suffered, no formal claims have been lodged.[34]

3.29 In its Part (a) report, the committee recommended that 'the Commonwealth Government, with the advice of the NSW Department of Primary Industries, develop an initial compensation package for the commercial fishermen affected by the closures of Fullerton Cove and Tilligerry Creek'. The Interim Government Response to the recommendation avoided the issue of compensation, only stating that 'individual claims for compensation received by the Australian Government are handled on a case by case basis', focusing instead on the provision of short-term financial assistance packages.[35]

3.30 The Government noted that the current financial assistance package for fishers and businesses affected by the decision of the NSW EPA to institute fisheries closures will continue to be available until 30 June 2016, when the NSW Government is due to make its decision regarding the closure of the fisheries. On 1 July 2016, a further Business Hardship Payment of up to $20,000 will be made available; and, if the NSW Government does not reopen the fisheries, businesses will be able to apply for a Business Transition Payment of up to $25,000 to 'assist businesses to pursue alternative sources of income if they wish to do so'. The Government also advised the committee that it will continue to provide an Income Recovery Subsidy to 'individuals who have experienced a loss of income' as a result of the closure of the fisheries, for a period of eight weeks after 30 June 2016.[36]

New South Wales

3.31 As discussed in Part (a), the New South Wales Government and Environment Protection Authority (NSW EPA) has demonstrated a precautionary and proactive response to PFOS/PFOA contamination. In September 2015, the NSW Government closed commercial and recreational fisheries and oyster harvesting in Fullerton Cove and Upper Tilligerry Creek for one month,[37] which in October 2015 was extended to a further eight-month ban on fishing while human health risk assessment is undertaken. The NSW Government explained that:

---

34 Mr Steven Grzeskowiak, Deputy Secretary Estate and Infrastructure, Department of Defence, *Committee Hansard*, 7 April 2016, p. 18.

35 Australian Government, *Response to the Senate Foreign Affairs, Defence and Trade References Committee report: inquiry into firefighting foam contamination Part A – RAAF Base Williamtown*, April 2016, p. 6.

36 Australian Government, *Response to the Senate Foreign Affairs, Defence and Trade References Committee report: Inquiry into firefighting foam contamination Part A – RAAF Base Williamtown*, April 2016, p. 6.

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

> 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.[38]

3.32 In November 2015, the NSW Government 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.[39] In addition to Defence's assistance package for commercial fishers affected by the closures announced by the Assistant Defence Minister in November 2015[40], the NSW Government announced an assistance package for Williamtown residents affected by contamination from the RAFF base in December 2015. 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.[41]

Queensland

3.33 As discussed in chapter 2, the Queensland Government took a different and less proactive approach to that of the NSW Government. Dr Jeannette Young, the Queensland Department of Health's Chief Health Officer and Deputy Director-General, explained that, compared to NSW, Queensland 'had a little more time to think things through' and determined that Defence's response to PFOS/PFOA contamination in Oakey was appropriate:

> New South Wales, who I did talk with after they made their comments, decided that, because they were not quite sure what was happening, they would take a very precautionary approach, which is very understandable, and suggest that any exposure be limited. Whereas in Queensland we had had a little more time to think things through. They were told I think a bit later than we were and we were going through and felt that Defence had

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

39 Department of Defence, *Submission 87*, p. 17.

40 Department of Defence, *Submission 87*, p. 17.

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

> very appropriately responded to provide alternative drinking water supplies.[42]

3.34 The Queensland Government advised the committee that it has established an interdepartmental committee to review and monitor Defence's response to PFOS/PFOA contamination in Oakey. The Queensland Government stressed the importance of a nationally consistent approach to PFOS/PFOA contamination which will 'support effective communication about impacts of contamination that is based on rigorous scientific assessment' as well as supporting 'clarity about roles and responsibilities, where there are cross-jurisdictional implications'.[43]

3.35 The Queensland Government advised the committee that it has developed a Draft Policy on Management of Firefighting Foams.[44] However, the draft was criticised by firefighting organisations, which asserted that the Draft Policy takes an overly simplistic approach and does not properly consider the differences between PFOS/PFOA foams and other firefighting foams, nor does it consider other factors such as firefighting performance:

> The C6 foam chemistry is the chemistry that is being used to comply with the US EPA stewardship program. So we would argue that the C6 chemistry has an acceptable environmental profile. Obviously, there still needs to be management practices put in place and containment of effluent from fires and that sort of thing, recognising that all foams have environmental impacts. But C6 chemistry is not the same as PFOS or PFOA chemistry and it should be treated separately. Unfortunately, the Queensland draft policy has taken a very simplistic approach of saying, 'All this stuff's bad. It's all the same as PFOS, therefore, you shouldn't use it.' We are saying that while that is a nice simplistic approach it does not take into consideration a lot of the other factors that need to be considered, as Matthew mentioned before, such as firefighting performance and so on. The fluorinated chemicals—the C6 chemicals—have significant firefighting performance advantages over some of the other technology. As a result, you can use less foam and you have less fire water effluent to manage after an incident. We would argue that in certain applications—we are really talking about major hazard facilities like petrochemical facilities where you potentially have very large severe fires—the use of a C6 fluorinated foam is probably a better choice, from a holistic environmental consideration, putting the fire out quickly and minimising the impact to the community on. That is on the proviso that your fire water effluent is contained after or during an event. We would argue that management practice should apply to all foams whether they are fluorinated or fluorine free. The key issue here is

42 Dr Jeannette Young, Queensland Department of Health's Chief Health Officer and Deputy Director-General, *Committee Hansard*, 9 March 2016, pp 35–36.

43 Queensland Government, *Submission 112*, p. 1.

44 Queensland Government, *Submission 112*, p. 2.

> to contain the fire water effluent and then treat it appropriately after the incident.[45]

3.36 Willson Consulting, technical specialists in firefighting foams, also asserted that the Queensland Government's draft is flawed, providing a detailed assessment of its shortcomings. Willson Consulting noted that 'there is no such thing as "environmentally friendly foams"' and that a range of factors, including firefighting safety and effectiveness, need to be considered when regulating their use.[46]

Victoria

3.37 The Victorian Government demonstrated a proactive approach to PFOS/PFOA contamination. In 2012, the CFA Training College at Fiskville was the subject of an independent report into the historical use of chemicals for live firefighting from 1971 to 1999, known as the Joy Report. In December 2014, the Victorian Parliament's Environment, Natural Resources and Regional Development Committee (ENRRDC) commenced an inquiry into the CFA Training College at Fiskville, which is scheduled to report in May 2016.[47] An interim report was published in June 2015, which made three key recommendations:

> **RECOMMENDATION 1:**
>
> (a) The Victorian Government oversee the thorough testing of soil and water, including tank water, on adjoining or relevant properties and the results assessed in light of the decisions made as Fiskville. It is important to ensure people living or working on those properties are not subject to ongoing unacceptable risks of exposure;
>
> (b) In addition, all information regarding exposure to PFOS, testing results and other decisions from authorities related to contamination should be made available to those property owners; and
>
> (c) Due to market sensitivity regarding contamination of food the Government considers the situation whereby local producers may not be able to sell their livestock or other produce.
>
> **RECOMMENDATION 2:** That the Victorian Government assess the feasibility of providing voluntary testing for PFOS free of charge to firefighters – career and volunteer – current and former staff at Fiskville, other trainees, and people who live or have lived on neighbouring properties. The Government, through the department of Health and Human Services, is to report to the Committee on the feasibility of this process by September 2015.

---

45 Mr Brett Staines, Chair, Technical Advisory Committee for Special Hazard Fire Protection Systems, Fire Protection Association Australia, *Committee Hansard*, 7 April 2016, p. 5.

46 Mr Mike Willson, *Submission 119*, pp 1–11.

47 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, 'Report and Response', Inquiry into the CFA Training College at Fiskville, http://www.parliament.vic.gov.au/enrrdc/article/2526, accessed 22 April 2016.

RECOMMENDATION 3: That the Victorian Government ensures that any person who seeks records and documents relating to their involvement with Fiskville is able to do so from government agencies and departments without hindrance.[48]

3.38 The Victorian Government's response to the ENRRDC was tabled in December 2015. The response agreed with the ENRRDC recommendations and emphasised a proactive approach to the situation, including:

- implementing a number of measures to remediate and manage the surface water and sediments in lake Fiskville and the dams linked to the lake, and stop further discharges of water from the Fiskville water management system;
- extensive testing of the family, livestock, water and soil on the neighbouring properties most at risk of PFOS exposure, with face-to-face briefings providing and explaining the results of the testing;
- Victorian Department of Health and Human Services officials visiting owners of the neighbouring property most at risk of PFOS exposure on a number of occasions to discuss their concerns about PFOS and health;
- providing face-to-face briefings with all neighbouring property owners and occupiers at which officials:
    - explained the soil and water testing already undertaken and offered to test the soil and water on their properties for PFOS;
    - explained the human health testing already undertaken, the testing regime already available and offered to arrange testing; and
    - if the test results disclose any elevated level PFOS levels, will offer to conduct PFOS tests of stock on those properties.
- expanding the CFA health check program to include testing for PFCs to the pathology testing;
- expanding the eligibility of the CFA health check program to people who live or have lived on neighbouring properties or nearby local properties (which can be access either through the 24-hour Health and welfare Hotline or an Independent hotline for vulnerable witnesses);
- representatives of the Chief Veterinary Officer participating in face-to-face briefings with owners and occupiers of the neighbouring properties to address concerns regarding animal health concerns and livestock saleability; and
- emphasising its commitment to transparency and free and unhindered provision of information, records, and documents to people regarding their involvement at Fiskville.[49]

---

48 Parliament of Victoria, Environment, Natural Resources and Regional Development Committee, *Inquiry into the CFA Training College at Fiskville: Interim Report*, June 2015, p. xiii.

49 Victorian Government, *Submission 121*, Attachment 1.

Airservices Australia

3.39 Airservices Australia has been very proactive in its approach to PFOS/PFOA contamination. In 2008, despite an absence of regulatory screening or investigation levels in Australia for PFCs, Airservices Australia conducted a program of preliminary site assessment work to consider the impacts of historical firefighting foam use, focused on the detection of PFOS and PFOA in the soil and groundwater. A program of detailed site assessments was then initiated following a priority risk ranking based at ARFF sites at Brisbane, Sydney, Rockhampton and Perth Airports, with the results of the investigations provided to site owners and regulators. In 2009/2010 Airservices Australia wrote to Commonwealth, state and territory government environmental regulators advising them of its PFC concerns in relation to current and former ARFF facilities.[50] Dr Rob Weaver, Executive General Manager, Safety, Environment and Assurance, described Airservices Australia's approach:

> There are two fundamental planks that have guided our approach. The first is the health and safety of our staff and the community and the second is sharing everything that we know with regulators and airports to ensure that they are aware of our actions and that we are taking on board the latest science on how to treat PFCs. When we made the decision to phase out firefighting foams containing PFCs, we also started to investigate the impacts from its historic use.[51]

3.40 Airservices Australia advised the committee that it is implementing a research and development program with industry to better understand the behaviour of PFCs in the environment, assist in establishing screening criteria, and assist in the development and trialling of treatments to remove PFCs from impacted materials. Airservices Australia noted that its recent trails of products such as MyCelx, MacCARE and RemBind have been 'extremely positive':

> Airservices has in recent years undertaken trials of the RemBind™ product as an immobilising agent for PFCs in impacted soils. Initial laboratory trials of PFC impacted soil from ARFF sites were undertaken by an independent consultancy firm in co-operation with Ziltek, the manufacturer of RemBind™. These trials were highly successful, with immobilisation levels attained up to 99%. Airservices has subsequently used this technology in its operations, with over 700 cubic metres of PFC impacted soil from one site treated and sent to landfill for disposal, and similar uses elsewhere intended in the near future. Further investigations are underway in collaboration with the University of Queensland, to assess the application of RemBind™ as an in-situ treatment for PFC impacted soils.[52]

3.41 Airservices Australia assured the committee that, based on all the evidence it has to date, it has not found any significant migration of PFCs away from its airport

---

50 Airservices Australia, *Submission 113*, pp 12–15.

51 Dr Rob Weaver, Executive General Manager, Safety, Environment and Assurance, Airservices Australia, *Committee Hansard*, 7 April 2016, p. 28.

52 Airservices Australia, *Submission 113*, p. 13.

firefighting grounds and does not believe that its use of firefighting foam has contaminated drinking water at any location.[53]

Regulatory frameworks and coordination between Commonwealth and state governments

3.42 Environment advised the committee that, under the division of powers between the Australian Government and the states and territories under the Australian Constitution, the states and territories have primary responsibility for environmental protection such as air quality, noise, dour or general amenity. There are a number of intergovernmental agreements relating to environmental policy and regulation, including the 1997 Heads of Agreement on Commonwealth and State Roles and Responsibilities for the Environment. Environment noted that 'these intergovernmental agreements outline the broad approach to the different responsibilities of Commonwealth, State and Territory Governments and agencies in relation to environmental management'.[54]

3.43 The committee received evidence from Commonwealth and state agencies highlighting shortcomings of the existing regulatory framework to address legacy contamination as well as identifying shortcomings in the coordination between agencies at different levels of government. The interim report of Professor Mark Taylor into the management of contamination at RAAF Base Williamtown highlighted the lack of clarity regarding to whom the Commonwealth is accountable for contamination caused by it on non-Commonwealth land. The report recommended that:

> **The NSW Government, as a matter priority, should engage with the Commonwealth Government to resolve the ability of states and territories to use their enforcement powers to address environmental contamination on Commonwealth land and the remediation of contamination caused by the Department of Defence (or other Commonwealth polluters) on non-Commonwealth owned land. In particular, the NSW Government should work with the Commonwealth Government to reassess the efficacy of any arrangements put in place with respect to regulating the Department of Defence pursuant to Attachment 3 of the 1997 *Heads of Agreement on Commonwealth and State roles and responsibilities for the Environment.***
>
> It needs to be clear and transparent to whom the Department of Defence is accountable for contamination caused by it on non-Commonwealth land. This would have flow-on benefits for NSW. The Review notes that there

53 Dr Rob Weaver, Executive General Manager, Safety, Environment and Assurance, Airservices Australia, *Committee Hansard*, 7 April 2016, p. 28.

54 Department of the Environment, response to question on notice, 7 April 2016, (received 21 April 2016), p. 3.

> are multiple military and airport sites across NSW (and Australia) that are likely to be similarly affected.[55]

3.44 And that:

> **The NSW EPA, as a matter of priority, should seek legal advice at the highest level to resolve the seeming ambiguity in regard to its powers to (a) regulate and manage contaminated Commonwealth land; and (b) deal with contamination caused by the Department of Defence on non-Commonwealth land.**
>
> This issue is particularly important where it is clear contamination has or is likely to have adverse impacts on surrounding land under the jurisdiction of the NSW Government.[56]

3.45 The EPBC Act is described as 'the Australian Government's central piece of environmental legislation' which 'provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places—defined in the EPBC Act as matters of national environmental significance'.[57] However, despite being the 'central piece of environmental legislation', it appears to have significant limitations in the context of firefighting foam contamination. Environment emphasised its limited power under the EPBC Act, noting that, even if it is made aware of contamination or significant environmental concerns, as in the case of Williamtown, its ability to act is restricted:

> Whenever we get any intelligence or any piece of information that goes to the environment, the first step we take is make a consideration of whether we have got any lawful basis or legal ability to be able to act. It is very important for us as a regulator to be able to say we cannot step up beyond our powers. So, if we get some information going to our compliance area, the first thing we do…is make some inquiries and see if we have any legal power to be able to address that. When it goes to these legacy cases, that power is obviously limited.
>
> When a matter has been referred to us, there is a process about environmental impact studies and a range of other things, and our assessment officers…will ask some questions to be able to see whether or not there are matters that we should be taking into consideration through that referral process, such as contamination. The limitation for us under the act is that, if it is not related to the action itself, we may not have jurisdiction to act. But our posture is to make our best endeavours to find

55 Professor Mark Taylor, *Stage One of Review of the NSW Environment Protection Authority's (EPA) Management of Contaminated Sites Interim Chronology of Williamtown RAAF Base Contamination: Interim Report*, 14 December 2015, pp 27–28.

56 Professor Mark Taylor, *Stage One of Review of the NSW Environment Protection Authority's (EPA) Management of Contaminated Sites Interim Chronology of Williamtown RAAF Base Contamination: Interim Report*, 14 December 2015, pp 27–28.

57 Department of the Environment, http://www.environment.gov.au/epbc, accessed 20 April 2016.

> whether or not there is something that we can address within the legal powers that we have as a department.[58]

3.46 Environment told the committee that, under Part 3 of the EPBC Act, the Commonwealth Environment Minister can only statutorily intervene in environmental matters and make approval decisions in relation to actions that are likely to significantly impact the following nationally protected matters:

- World Heritage properties;
- National Heritage places;
- wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed);
- nationally threatened species and ecological communities;
- migratory species;
- Commonwealth marine areas;
- the Great Barrier Reef Marine Park;
- Nuclear actions (including uranium mining);
- A water recourse, in relation to coal seam gas development and large coal mining development; and
- the whole of the environment, but only in those instances where the actions affect, or taken on, Commonwealth land, or are carried out by a Commonwealth agency.[59]

3.47 Furthermore, Environment advised that approvals under the EPBC Act do not focus on impacts or outcomes but only on the action undertaken:

> The way the act is worded, it talks about approving an action not an impact. You approve an action to be undertaken, so the action is the airport and the normal operation of the airport. The impacts are not what is approved; you approve the action.[60]
>
> …
>
> It is not designed to operate on the basis of whether there is a contamination of a certain thing or because something that is a particular protected matter is at threat, and then the EPBC Act steps in. That is not how it operates. It only operates on the basis of actions and impacts. Because it is designed in that way, it is why, when it was introduced, the exemption provisions my

58 Mr Matt Cahill, First Assistant Secretary, Environmental Standards Division, Department of the Environment, *Committee Hansard*, 7 April 2016, pp 43–44.

59 Department of the Environment, response to question on notice, 7 April 2016, (received 21 April 2016), p. 3.

60 Mr Shane Gaddes, Assistant Secretary, Compliance and Enforcement Branch, Department of the Environment, *Committee Hansard*, 7 April 2016, p. 38.

> colleagues talked about were in place. It is focused on actions and impacts rather than outcomes, if you like.[61]

3.48 Environment advised that it is the responsibility of the person proposing to take an action to 'self-assess' and consider whether their proposal is likely to have a signficiant impact on a nationally protected matter and requires referral for approval under the Part 7 of the EPBC Act.[62] Therefore, under the EPBC Act, Defence is only required to seek an assessment or consideration from Environment if and when Defence decides that one is necessary:

> If Defence want to do something, they have to satisfy themselves. They have to consider whether they are going to have a significant impact on the environment and, if they are, they need to seek an assessment, a consideration by the department. If they decide they are not having a significant impact on the environment, then they do not need to come to us.[63]

3.49 The EPBC Act also contains a range of transitional provisions, including sections 43A and 43B which exempt certain actions from the assessment approval provisions. These sections apply to lawful continuations of land use that started before or actions that were legally authorised before the commencement of the act on 16 July 2000. Environment noted that 'there may be circumstances where activities resulting in PFOS and PFOA contamination would not be subject to the EPBC Act because the actions are covered by one of the above transitional provisions'. Environment advised that any enlargement, expansion, or intensification of an existing use is not a continuation of that use and is not covered by the exemptions.[64] However, this too relies on self-assessment, with landowners determining whether or not they are increasing or intensifying their actions from any grandfathered actions:

> …the primary responsibility lies with the landowner to satisfy themselves they are not having a significant impact on the environment. If the landowners satisfy themselves that they are not having a significant impact—nor are they intensifying, increasing or substantively changing the nature of their operations where there is provision under the act for those things to have been grandfathered…then they would not refer.[65]

3.50 Environment confirmed that it recently received a referral from Defence regarding an intensification of operations at RAAF Base Williamtown due to the Joint

---

61 Mr James Tregurtha, Assistant Secretary, Policy and Reform Branch, Department of the Environment, *Committee Hansard*, 7 April 2016, p. 41.

62 Department of the Environment, response to question on notice, 7 April 2016, (received 21 April 2016), p. 3.

63 Mr James Tregurtha, Assistant Secretary, Policy and Reform Branch, Department of the Environment, *Committee Hansard*, 7 April 2016, p. 37.

64 Department of the Environment, response to question on notice, 7 April 2016, (received 21 April 2016), p. 6.

65 Mr James Tregurtha, Assistant Secretary, Policy and Reform Branch, Department of the Environment, *Committee Hansard*, 7 April 2016, p. 42.

Strike Fighters, but advised that even when an assessment is referred, 'the referrer determines what gets referred to the department'[66] and any actions that are assessed must be linked to the referred action. Therefore, as the primary issues which were raised in that consideration were related to noise impacts and potential contamination of fuel dumping, Environment was unable to consider PFOS/PFOA contamination issues:

> The thing we need to be careful about here is that the fact that someone is undertaking something in an action that may be significant is not a free pass for us to go in and resolve any legacy issues that exist on that site. So, under our statutory authority, we would still be limited, because the actions that need to be assessed must be linked to the referred action. There would need to be a direct link—and there may well be as you were pointing out—between the action that is referred and the larger action. That is the only caution I would put on that. So you cannot say that, if someone referred something on a particular site, we could go in and look at the entire site, as Mr Gaddes has pointed out. An example of that would be that you cannot use a mine extension proposal to require a whole bunch of conditions in relation to the existing mine that had already been operating for 20 years.[67]

3.51 Environment assured the committee that 'whilst the onus is on the person taking an action to 'self-assess'…the department examines all allegations of non-compliance with the EPBC Act on a case-by-case basis to ensure that unapproved actions that have had, or are likely to result in, a significant impact on nationally protected matters receive an appropriate compliance response'.[68] However, in November 2013, the NSW EPA raised the issue of contamination with Environment but did not receive any response. Environment advised the committee that it assessed the circumstances and determined that the EPBC Act 'did not apply':

> As we do with most issues or allegations or incidents like that, we go through and we look at the circumstances around that incident and whether or not the EPBC Act would apply given the circumstances. At that time, that was referred to the compliance officers within the department. The compliance officers spoke to the EPA, sought further information, had a look at the activities that had occurred at that site and deemed that there had not been a significant intensification of the activities and that they were activities which related to legacy activities at the site. Therefore, the act did not apply.[69]

---

66 Mr James Tregurtha, Assistant Secretary, Policy and Reform Branch, Department of the Environment, *Committee Hansard*, 7 April 2016, p. 41.

67 Mr James Tregurtha, Assistant Secretary, Policy and Reform Branch, Department of the Environment, *Committee Hansard*, 7 April 2016, p. 44-45.

68 Department of the Environment, response to question on notice, 7 April 2016, (received 21 April 2016), p. 4.

69 Mr Shane Gaddes, Assistant Secretary, Compliance and Enforcement Branch, Department of the Environment, *Committee Hansard*, 7 April 2016, p. 42.

3.52 Yet Environment did not see fit to advise the NSW EPA of this determination. When asked by the committee, Environment confirmed that it did not write back advising the NSW EPA of its findings as 'there was not a substantive issue for [Environment] to address' and it did not have the resources to provide a response.[70]

Committee view

Interpreting the science of PFOS/PFOA

3.53 The committee's first report made passing reference to the human and environmental health impacts of PFOS/PFOA contamination.[71] In this report the committee has refrained from attempting to engage in a complex and technical debate, which is likely to continue unresolved for some time. However, the committee is able to draw one conclusion from the scientific evidence. The peer-reviewed studies drawn to the committee's attention demonstrate that PFOS and PFOA are persistent, toxic and transboundary organic pollutants that bio-accumulate through the food chain. That is why there is a consensus that PFOS/PFOA should not be used. These contaminants are very difficult to manage in the environment which is also the main reason authorities have struggled to develop effective remediation strategies for the contaminated ground water and mobile plumes at Williamtown and Oakey.

3.54 There is definitely no place for these chemicals at any Commonwealth, state or territory facility where firefighting foams are used. As such, the committee was surprised to learn that there is no Australian legislation that prescribes actions or standards specifically in respect of PFCs.[72] The committee is of the view that, despite evidence that these foams are no longer in use, all PFOS and PFOA firefighting foams should be immediately removed from circulation and storage to avoid increasing existing legacy management issues and locations. To this end, the committee is of the view that legislation should be introduced in the Parliament banning PFOS/PFOA once and for all.

Recommendation 4

3.55 The committee recommends that the Government explicitly legislate for the immediate removal and safe disposal of PFOS and PFOA firefighting foams from circulation and storage at all Commonwealth, state and territory facilities in Australia.

3.56 The committee continued to receive evidence highlighting probable adverse health outcomes of exposure to PFOS/PFOA, including bibliographies, references to international case studies and the outcome of overseas litigation. The committee was at times perplexed by the volume of scientific literature on PFOS/PFOA and the conflicting interpretations arrived at by scientists and health professionals with

70 Mr Shane Gaddes, Assistant Secretary, Compliance and Enforcement Branch, Department of the Environment, *Committee Hansard*, 7 April 2016, p. 45.

71 Foreign Affairs, Defence and Trade References Committee, *Firefighting foam contamination Part A—RAAF Base Williamtown*, February 2016, pp 5–6.

72 Airservices Australia, *Submission 113*, p. 11.

considerable experience and expertise both in Australia and overseas. The committee accepts evidence provided by the National Industrial Chemicals Notification and Assessment Scheme, or NICNAS, and Professor Mueller from Queensland University, that risk is a function of the intrinsic properties of a chemical and the level of exposure and accumulation in the blood stream.[73] The committee agrees that debate around the human toxicological impact of PFOS/PFOA is unlikely to be resolved any time soon and for this reason is unable to formulate an overall conclusion around the science of these contaminants.

3.57 Throughout the inquiry Defence remained steadfast in arguing there is no consistent scientific data linking PFOS/PFOA with adverse human health effects, and reiterating that the health community is not united on the effects of these chemicals.[74] This became Defence's mantra at the committee's four public hearings, with senior officials maintaining that its position aligns with public statements by New South Wales, Queensland and Western Australian state health authorities and most recently by EnHealth. Yet this official position stands in contrast to evidence from expert witnesses critical of the Australian authorities for giving the appearance of downplaying the seriousness of the contamination so as to forestall accepting legal liability. This evidence made the committee aware of decades of scientific research and review by the Stockholm Convention technical committee, which has demonstrated a probable link between PFOS/PFOA and testicular and kidney cancer and a wide range of other serious human health impacts. The accumulation of peer-reviewed scientific studies from the 1970s shows a range of likely adverse human health effects from high level exposure to these contaminants.

3.58 Nonetheless, the lack of definitive scientific consensus regarding the effect of PFOS/PFOA on human health does not alter the fact that people living within and around the contamination zones in Williamtown and Oakey, some of whom have extremely high levels of PFOS/PFOA in their blood for reasons that are not clear, have had their lives and livelihoods turned upside down and sometimes ruined through no fault of their own. The committee understands that for many residents in Williamtown and Oakey it is exposure to risk and linking that exposure to existing health issues including a range of cancers that is the primary cause of concern.

3.59 As such, and as recommended in Chapter 2, the committee supports the provision of voluntary blood testing, which continues to be a major source of contention between Commonwealth and state authorities and residents affected by contamination. The committee believes that the official view taken by state health authorities and EnHealth, which underpinned Defence's official line on blood testing in Williamtown and Oakey, is out of kilter with the views of residents and

---

73 Dr Brian Richards, Director, National Industrial Chemicals Notification and Assessment Scheme, *Committee Hansard*, 7 April 2016, p. 26; and Professor Jochen Mueller, Professor of Environmental Toxicology, University of Queensland, *Committee Hansard*, 9 March 2016, p. 27.

74 Mr Steven Grzeskowiak, Deputy Secretary Estate and Infrastructure, Department of Defence, *Committee Hansard*, 7 April 2016, p. 20.

international experience where blood testing appears to be the norm for residents affected by PFOS groundwater contamination.[75] The committee is of the view that sufficient evidence exists for Commonwealth and state authorities to at least reconsider their position, not only for the residents of Williamtown and Oakey but also in relation to other likely contamination events at other sites around Australia.

Recommendation 5

3.60 The committee recommends that voluntary blood testing be made available to current and former workers at sites where firefighting foams containing PFOS/PFOA have been used, and current and former residents living in proximity to these sites who may be affected by contamination.

The response by the authorities

3.61 Putting to one side the inconclusive scientific evidence, the committee is left in no doubt the residents of Williamtown and Oakey were let down by the tardy and inconsistent response of Commonwealth and state authorities charged with managing legacy contamination of the environment. The committee accepts that contamination caused by firefighting foams is a legacy issue affecting hundreds of sites across Australia. The policy challenges of environmental contamination are complex and will require the boundaries of authority and responsibility between the Commonwealth, states and territories to be challenged and reconfigured in ways probably not seen before. A national policy response to legacy contamination and development of agreed national environmental regulations and guidelines on the use of firefighting foams are urgently required.

3.62 The committee notes the variation in response between the state governments, ranging from the proactive responses in New South Wales and Victoria, to the more reserved approach of Queensland. The committee is satisfied with the proactive approach taken by Air Services Australia to firefighting foam contamination at airports around Australia. It welcomes evidence that it is unlikely the use of firefighting foams at Australian airports has contaminated drinking water at any location. The committee congratulates Air Services Australia for implementing a range of early investigative and intervention practices, as well as its research and development program with industry to better understand the behaviour of PFCs in the environment, assist in establishing screening criteria, and assist in the development and trialling of treatments to remove PFCs from impacted materials.

3.63 However, the committee does not have the same level of confidence in Defence's handling of its estate and the environmental and human threats posed by firefighting foam contamination both on and off a number of bases. Defence's handling of legacy contamination, particularly its response to the situation at RAAF Base Williamtown, leaves a lot to be desired and has definitely compounded the anger, frustration and stress experienced by hundreds of affected residents and businesses. The loss of confidence in government authorities and the sense of betrayal experienced in Williamtown and Oakey is regrettable, all the more so because these

75 Mr Rory Ross, Senior Solicitor, Shine Lawyers, *Committee Hansard*, 9 March 2016, p. 18.

Defence facilities have historically provided an economic and social lifeline for many residents.

3.64 The committee welcomes measures recently initiated by Defence to identify a priority list of facilities around Australia to be tested for PFOS/PFOA contamination. The committee welcomes the sense of urgency around the timely completion of the human health and environmental risk assessments for Williamtown and Oakey conveyed by senior Defence officials. In undertaking a response to contamination of its estate and engaging with other affected communities, the committee encourages Defence to learn from the mistakes of Williamtown and Oakey and adopt a proactive stance in tackling this problem.

3.65 The committee encourages Defence to notify residents as early as possible, work cooperatively with relevant state agencies and engage residents and businesses in practical discussions about remediation, compensation, relocation and where appropriate acquisition of property which is no longer fit for purpose. Communities need to be reassured that Defence is 'open for business' when it comes to accepting liability and offering compensation on just terms.

3.66 The committee acknowledges that the domestic treaty making process for the ratification of the addition of PFOS as an Annex B restricted substance under the Stockholm Convention may be 'substantial'. However it is disappointed that, after more than half a decade, Environment advises that it is still working on releasing a draft consultation Regulatory Impact Statement for public consultation. The committee is unconvinced that this delay is justified and urges Environment to make the completion of the process and ratification of the Convention a priority.

Recommendation 6

3.67 The committee recommends that the Department of the Environment complete the domestic treaty making process for the ratification of the addition of PFOS as an Annex B restricted substance under the Stockholm Convention on Persistent Organic Pollutants before the end of 2016.

A national regulatory approach

3.68 Evidence received from Commonwealth and state agencies has put a spotlight on the shortcomings of the existing regulatory framework to address legacy contamination and the patchy coordination between agencies at different levels of government. The committee is concerned that Environment has not assumed the role of lead agency tackling this issue head-on, leaving state agencies to fill the regulatory void with unintended consequences. The committee fails to see how Environment can be so hamstrung in dealing with an emerging national environmental contamination issue by the key piece of national environmental protection legislation over which it has responsibility—the EPBC Act. Evidence from Environment that an issue as significant as legacy contamination by firefighting foams falls outside the scope of the EPBC Act, including significant base upgrades for the proposed Joint Strike Fighter acquisition, came as a real surprise to the committee and is an area of concern.

3.69 The complexity of the regulatory environment, the interaction of laws and regulations at state and federal levels and the operation of the EPBC Act have together

been detrimental to communities seeking answers and requiring government assistance. Nowhere is the level of regulatory confusion more clear than in the conflicting views of Defence and the NSW EPA about when to notify the Williamtown community of the contamination, which both agencies had known about for some years, and the subsequent unilateral action taken by the EPA out of frustration with Defence's inaction. Furthermore, the inconsistency in agency responses is clearly demonstrated by the contrast between the New South Wales EPA's intervention in Williamtown (a trigger for this inquiry) and the absence of any visible early response by the Queensland Government to the equally serious situation which was already unfolding in Oakey.

3.70 There is an urgent need for Government to undertake a review of the EPBC Act and, if necessary, provide a legislative basis for Environment to assume a national leadership role and intervene early should other legacy contamination events emerge on the scale of Williamtown or Oakey. The committee takes little comfort from the existence of an inter-departmental committee headed by Environment which Defence claimed was looking at the broader problem of PFOS/PFOA contamination. Residents of Williamtown and Oakey expect more than the creation of an interdepartmental committee.

Recommendation 7

3.71 The committee recommends that the Commonwealth Government review the *Environment Protection and Biodiversity Conservation Act 1999* and, if necessary, seek to have it amended to enable the Department of the Environment to assume a national leadership role and intervene early should other legacy contamination events emerge on the scale of Williamtown or Oakey, especially when contamination spreads from land controlled by Defence to non-Commonwealth land.