



MINISTERIAL BRIEF

**Chief Minister, Treasury and Economic  
Development Directorate**

UNCLASSIFIED

<b>To:</b>	Minister for Regulatory Services	<b>Tracking No.:</b> Click here to enter text.
<b>Date:</b>	13 May 2018	
<b>CC:</b>	Minister for Planning and Land Management	
<b>From:</b>	Alison Purvis, Chief Operating Officer	
<b>Subject:</b>	PFAS Contamination in the ACT	
<b>Critical Date:</b>	22 June 2018	
<b>Critical Reason:</b>	Click here to enter text.	

**Purpose**

To provide an update on PFAS issues in the ACT.

**Recommendations**

That you:

1. Note the information contained in this brief.

**Noted / Please Discuss**

MLA ..... /...../.....

Minister's Office Feedback

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**Background**

1. Per- and polyfluoroalkyl substances (PFAS) are a diverse group of compounds resistant to heat, water, and oil. For decades, they have been used in aviation fire-fighting foams (AFFF) as well as being used in a range of industrial/manufacturing processes. The persistent nature of PFAS means it can bio-accumulate in organisms high up in the food chain (ie humans) which represents a potential long term issue.
2. PFAS containing AFFF are no longer used in the ACT by ACT firefighting agencies. The phasing out of AFFF concentrate by ACT Fire & Rescue (ACTF&R) commenced in September 2004 and it was completely withdrawn from service in April 2005 and replaced with fluorine-free foam concentrate. ACTF&R still carry nine (9) litre AFFF fire extinguishers on fire fighting vehicles, with these currently being replaced with fluorine-free alternatives.
3. Governments in Australia now work to a framework for PFAS management in accordance with an Intergovernmental Agreement (February 2018) and the PFAS National Environment Management Plan (NEMP), adopted by all jurisdictions March 2018.
4. The NEMP details the concentrations of PFAS that are currently considered to represent human and ecological harm (essentially defines the level of PFAS in soil & water that is considered ‘contamination’). The NEMP also details methods for site assessments, sampling protocols and analytical determinations.
5. The issues with PFAS that have been widely reported in other jurisdictions have involved direct contamination of drinking water and/or food supplies. Such issues are improbable in the ACT because of the remote catchments used for town water supply and the insignificant volume of food production in the ACT.
6. AFFF was specifically used to suppress flammable liquid fires and was also used in training exercises. There are a number of other facilities in the ACT that are likely to have stored or used AFFF and thus have the potential for PFAS contamination. These sites are listed in table below.

Facility	Location	PFAS Contamination
<b>Commonwealth</b>		
HMAS Harman	Woods Lane, Jerrabomberra, ACT	Potential
Duntroon Royal Military College	Staff Cadet Avenue, Campbell, ACT	Potential
RAAF Fairbairn/ Canberra Airport	Pialligo Avenue, Pialligo, ACT	Confirmed
Majura Firing range	Malcolm Vale Rd, Pialligo, ACT	Potential
Australian Federal Police Majura	1 Tambreet St, Majura, ACT	Potential

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Canberra Deep Space Discovery Centre	Discovery Drive, Paddys River, ACT	Potential
<b>ACT Government</b>		
Charnwood fire station	35 Lhotsky St, Charnwood, ACT	Confirmed
Greenway fire station	201 Scollay St, Greenway ACT	Potential
Belconnen fire station	41 Rae St, Belconnen, ACT	Confirmed
Fyshwick fire station	1 Dalby St, Fyshwick ACT	Potential
Gungahlin fire station	Anthony Rolfe Ave, Gungahlin ACT	Potential
Ainslie fire station	36 Wakefield Ave, Ainslie, ACT	Potential
Phillip fire station	Hindmarsh Dr & Botany St, Phillip ACT	Potential
Kambah fire station	500 Sulwood Dr, Kambah ACT	Potential
Mugga Lane Resource Recovery Facility	499 Mugga Lane, Jerrabomberra, ACT	Potential
West Belconnen Resource Management Centre	181 Parkwood Rd, MacGregor, ACT	Potential
Rail Depot Kingston	Cunningham Street, Kingston, ACT	Potential

7. The Emergency Service Agency (ESA) is seeking budget funding to undertake assessments of its sites to determine if contamination has occurred. These include the former Belconnen Fire Station and Training Centre, the current Fyshwick, Gungahlin, Chisholm, Ainslie, Phillip and Kambah Fire Stations, and the former fire station site Greenway.
8. Prior to adoption of the NEMP, the ACT EPA, in conjunction with the National Capital Authority and Icon Water, undertook sampling across ACT waterways to determine background levels of PFAS. The water sampling results did not detect PFAS in ACT waterways. This sampling was limited and further, more targeted, sampling will be undertaken in accordance with the NEMP.
9. The EPA is also investigating changes to landfill and sewage treatment plant licenses to incorporate sampling for PFAS's in the standard monitoring programs to determine if discharges or inflows of PFAS are occurring at the facilities. Landfills and sewerage treatment works are potential sources as they accumulate PFAS sources from household, commercial and industrial wastes and discharges.
10. The EPA and Environment Planning and Sustainable Development Directorate have developed a sampling program plan to characterise potential PFAS sources and movements in the ACT and ensure the ACT meets the requirements of the NEMP. The sampling plan will involve existing water monitoring sites as well as ACT landfill, fuel storage and sewage treatment plant sites as these are potential sources of PFAS from household, commercial and industrial activities. The detailed sampling program is expected to begin by November 2018.

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**Issues**

11. The ACT Government is unable to progress assessment or remediation at Commonwealth sites because the Commonwealth is not bound by ACT legislation.
12. PFAS contamination was detected in the soil at the former Belconnen site and Charnwood site during the first phase of an assessment process for redevelopment.
13. The Belconnen site is a Government site currently not in use and is awaiting potential redevelopment. Further assessment, in accordance with the Environment Protection Authority (EPA) Contaminated Sites Environment Protection Policy 2017, will determine the level of management or remediation required before redevelopment occurs. There is groundwater extraction near the Belconnen site which used for car washing. This water is not used for drinking supply or agricultural production. Thus the exposure pathways to humans from potential PFAS contamination of groundwater at this site is a negligible risk.
14. At the Charnwood site the infrastructure has been removed and validated with the site being found suitable for community including childcare. The building owners have prepared an OEMP which was endorsed by the EPA on 15 March 2018. Prior to occupancy of the site the lease must be varied to include the approved OEMP and the EPA receive endorsement from a suitably qualified environmental consultant confirming that the mitigation measures required by the OEMP have been successfully installed.

**Financial Implications**

15. ESA to provide information

**Consultation**

Cross Directorate

16. ESA XXX and Daniel Walters, Senior Manager Environment Protection Policy, Environment, Planning and Sustainable Development Directorate have been consulted in the preparation of this brief

External

- 17.

**Benefits/Sensitivities**

- 18.

**Media Implications**

- 19.

Signatory Name:

Phone:

Action Officer:

Phone:

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MINISTERIAL BRIEF

**Chief Minister, Treasury and Economic  
Development Directorate**

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<b>To:</b>	Minister for Regulatory Services	<b>Tracking No.:</b> Click here to enter text.
<b>Date:</b>	18 June 2018	
<b>CC:</b>	Minister for Planning and Land Management	
<b>From:</b>	Alison Purvis, Chief Operating Officer	
<b>Subject:</b>	PFAS Contamination in the ACT	
<b>Critical Date:</b>	22 June 2018	
<b>Critical Reason:</b>	Must be considered prior to Estimates	

**Purpose**

To provide an update on PFAS issues in the ACT.

**Recommendations**

That you:

1. Note the information contained in this brief.

**Noted / Please Discuss**

MLA ..... /...../.....

Minister's Office Feedback
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### Background

1. Per- and polyfluoroalkyl substances (PFAS) are a diverse group of compounds resistant to heat, water, and oil. For decades, they have been used in aviation fire-fighting foams (AFFF) as well as being used in a range of industrial/manufacturing processes. The persistent nature of PFAS means it can bio-accumulate in organisms high up in the food chain (ie humans) which represents a potential long term issue.
2. PFAS containing AFFF are no longer used in the ACT by ACT firefighting agencies. The phasing out of AFFF concentrate by ACT Fire & Rescue commenced in September 2004. It was completely withdrawn from service in April 2005 and replaced with fluorine-free foam concentrate. ACT Fire & Rescue still carry nine (9) litre AFFF fire extinguishers on fire fighting vehicles, which are currently being replaced with fluorine-free alternatives.
3. Governments in Australia now work to a framework for PFAS management in accordance with the *Intergovernmental Agreement on a National Framework for Responding to PFAS Contamination* (February 2018) and the PFAS National Environment Management Plan (NEMP), adopted by all jurisdictions March 2018.
4. The NEMP details the concentrations of PFAS that are currently considered to represent human and ecological harm (essentially defines the level of PFAS in soil & water that is considered 'contamination'). The NEMP also details methods for site assessments, sampling protocols and analytical determinations.
5. The issues with PFAS that have been widely reported in other jurisdictions have involved direct contamination of drinking water and/or food supplies. Such issues are improbable in the ACT because of the remote catchments used for town water supply and the insignificant volume of food production in the ACT.
6. AFFF was specifically used to suppress flammable liquid fires and was also used in training exercises. There are a number of other facilities in the ACT that are likely to have stored or used AFFF and thus have the potential for PFAS contamination. These sites are listed in Table 1 below.

Table 1: Potential PFAS contaminated sites in the ACT

Facility	Location	PFAS Contamination
<b>Commonwealth</b>		
HMAS Harman	Woods Lane, Jerrabomberra, ACT	Potential
Duntroon Royal Military College	Staff Cadet Avenue, Campbell, ACT	Potential
RAAF Fairbairn/ Canberra Airport	Pialligo Avenue, Pialligo, ACT	Confirmed
Majura Firing range	Malcolm Vale Rd, Pialligo, ACT	Potential
Australian Federal Police Majura	1 Tambreet St, Majura, ACT	Potential
Canberra Deep Space Discovery Centre	Discovery Drive, Paddys River, ACT	Potential
<b>ACT Government</b>		
Charnwood fire station (former)	35 Lhotsky St, Charnwood, ACT	Confirmed
Greenway fire station (former)	201 Scollay St, Greenway ACT	Potential
Belconnen fire station	41 Rae St, Belconnen, ACT	Confirmed

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Fyshwick fire station	1 Dalby St, Fyshwick ACT	Potential
Gungahlin fire station	Anthony Rolfe Ave, Gungahlin ACT	Potential
Ainslie fire station	36 Wakefield Ave, Ainslie, ACT	Potential
Phillip fire station	Hindmarsh Dr & Botany St, Phillip ACT	Potential
Kambah fire station	500 Sulwood Dr, Kambah ACT	Potential
Mugga Lane Resource Recovery Facility	499 Mugga Lane, Jerrabomberra, ACT	Potential
West Belconnen Resource Management Centre	181 Parkwood Rd, MacGregor, ACT	Potential
Rail Depot Kingston	Cunningham Street, Kingston, ACT	Potential

7. The Emergency Service Agency (ESA) is seeking budget funding to undertake assessments of its sites to determine if contamination has occurred. These include the former Belconnen Fire Station and Training Centre, the current Fyshwick, Gungahlin, Chisholm, Ainslie, Phillip and Kambah Fire Stations, and the former fire station site Greenway.
8. Prior to adoption of the NEMP, the ACT EPA, in conjunction with the National Capital Authority and Icon Water, undertook sampling across ACT waterways to determine background levels of PFAS. The water sampling results did not detect PFAS in ACT waterways. This sampling was limited and further, more targeted, sampling will be undertaken in accordance with the NEMP.
9. The EPA is also investigating changes to landfill and sewage treatment plant licenses to incorporate sampling for PFAS's in the standard monitoring programs to determine if discharges or inflows of PFAS are occurring at the facilities. Landfills and sewerage treatment works are potential sources as they accumulate PFAS sources from household, commercial and industrial wastes and discharges.
10. The EPA and Environment Planning and Sustainable Development Directorate have developed a sampling program plan to characterise potential PFAS sources and movements in the ACT and ensure the ACT meets the requirements of the NEMP. The sampling plan will involve existing water monitoring sites as well as ACT landfill, fuel storage and sewage treatment plant sites as these are potential sources of PFAS from household, commercial and industrial activities. The detailed sampling program is expected to begin by November 2018.
11. CMTEDD is separately briefing the Chief Minister on issues with PFAS in Jervis bay Territory (JBT). ACT Health is currently working with NSW EPA to develop community health advice relating to the consumption of marine life in JBT as a result of Defence's ongoing PFAS investigation in JBT. A copy of this briefing will be provided to you when complete.

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**Issues**

12. The ACT Government is unable to progress assessment or remediation at Commonwealth sites because the Commonwealth is not bound by ACT legislation.
13. PFAS contamination was detected in the soil at the former Belconnen site and Charnwood site during the first phase of an assessment process for redevelopment.
14. The Belconnen site is a Government site currently not in use and is awaiting potential redevelopment. Further assessment, in accordance with the Environment Protection Authority (EPA) Contaminated Sites Environment Protection Policy 2017, will determine the level of management or remediation required before redevelopment occurs. There is groundwater extraction near the Belconnen site which used for car washing. This water is not used for drinking supply or agricultural production. Thus the exposure pathways to humans from potential PFAS contamination of groundwater at this site is a negligible risk.
15. At the Charnwood site the infrastructure has been removed and validated with the site being found suitable for community including childcare. The building owners have prepared an OEMP which was endorsed by the EPA on 15 March 2018. Prior to occupancy of the site the lease must be varied to include the approved OEMP and the EPA receive endorsement from a suitably qualified environmental consultant confirming that the mitigation measures required by the OEMP have been successfully installed.

**Financial Implications**

16. ESA to provide information

**Consultation**

Cross Directorate

17. ESA XXX and Daniel Walters, Senior Manager Environment Protection Policy, Environment, Planning and Sustainable Development Directorate have been consulted in the preparation of this brief

External

- 18.

**Benefits/Sensitivities**

- 19.

**Media Implications**

- 20.

Signatory Name:

Phone:

Action Officer:

Phone:

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MINISTERIAL BRIEF

**Chief Minister, Treasury and Economic  
Development Directorate**

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<b>To:</b>	Minister for Regulatory Services	Tracking No.: Click here to enter text.
<b>Date:</b>	19 June 2018	
<b>CC:</b>	Minister for Planning and Land Management	
<b>From:</b>	Alison Purvis, Chief Operating Officer	
<b>Subject:</b>	PFAS contamination issues in the ACT	
<b>Critical Date:</b>	22 June 2018	
<b>Critical Reason:</b>	Must be considered prior to Estimates	

**Purpose**

To provide an update on PFAS contamination issues in the ACT.

**Recommendations**

That you:

1. Note the information contained in this brief.

**Noted / Please Discuss**

MLA ..... /...../.....

Minister's Office Feedback

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## **Background**

### **PFAS - Nationally**

1. The compounds known as perfluorooctanesulfonic acid (PFOS) and perfluorooctanesulfonate (PFOA) were used to make aqueous film forming foam (AFFF), a component of fire-fighting foams. Collectively these compounds are referred to as per- and polyfluoroalkyl substances (PFAS).
2. PFAS are part of a diverse group of man-made chemicals also found in a range of common household products including non-stick cookware, fabric, furniture and food packaging. They are resistant to heat, water, and oil.
3. For decades, PFAS were used in AFFF as well as a range of industrial/manufacturing processes.
4. PFAS are very stable compounds and do not break down in the environment, that is, they persist in the environment and in human bodies for a long time.
5. Australian health authorities, including ACT Health, report that there is no conclusive proof that PFAS causes any specific illnesses in humans, including cancer. There is also no consistent evidence that PFAS causes adverse human health outcomes in pregnant women of their babies.
6. Despite the current lack of certainty regarding the adverse effects of PFAS on organisms, the persistent nature of PFAS means a precautionary approach for managing PFAS has been adopted.
7. Governments in Australia work to a framework for PFAS management in accordance with the *Intergovernmental Agreement on a National Framework for Responding to PFAS Contamination* (February 2018) and the PFAS National Environment Management Plan (NEMP), adopted by all jurisdictions in March 2018.
8. The ACT is a participant on the Heads of Environment Protection Authorities Australia and New Zealand (HEPA) National Chemicals Working Group, which developed the PFAS National Environment Management Plan (NEMP).
9. The NEMP defines the level of PFAS in soil and water that is considered contamination. The NEMP also details methods for site assessments, sampling protocols and analytical determinations.
10. Issues with PFAS that have been widely reported in other jurisdictions have involved direct contamination of drinking water and/or food supplies.
11. Such issues are improbable in the ACT because of the remote catchments used for town water supply and the insignificant volume of food production in the ACT.

### **PFAS – Jervis Bay Territory**

12. The ACT Government is contracted by the Commonwealth Government to supply certain services to Jervis Bay Territory (JBT), including education, licences, justice services and environmental water testing.
13. Chief Minister Treasury and Economic Development Directorate (CMTEDD) is briefing the Chief Minister on issues with PFAS in JBT. ACT Health is currently working with NSW EPA to develop community health advice relating to the consumption of marine life in JBT as a result of Defence's ongoing PFAS investigation. A copy of this briefing will be provided to you when complete.
14. The ACT Government is unable to progress assessment or remediation at

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Commonwealth sites because the Commonwealth is not bound by ACT legislation.

**PFAS in the ACT**

15. AFFF containing PFAS are no longer used in the ACT by ACT firefighting agencies. The phasing out of AFFF concentrate by ACT Fire & Rescue commenced in September 2004. It was completely withdrawn from service in April 2005 and replaced with fluorine-free foam concentrate.
16. ACT Fire & Rescue still carry nine (9) litre AFFF fire extinguishers on fire fighting vehicles, which are currently being replaced with fluorine-free alternatives.

**Issues**

**The ACT and PFAS**

17. There are three known PFAS affected sites in the ACT: Canberra Airport which is located on Commonwealth land and the former Charnwood and Belconnen Fire Station sites, located on Territory land.
18. AFFF was specifically used to suppress flammable liquid fires and was also used in training exercises. There are a number of other facilities in the ACT that are likely to have stored or used AFFF and thus have the potential for PFAS contamination.
19. In addition, landfills and waste water/sewerage treatment plants are potential sources of PFAS contamination from household, commercial and industrial wastes and discharges.
20. Potential PFAS contaminated sites in the ACT are listed in Table 1 below.

**Table 1: Potential PFAS contaminated sites in the ACT**

Facility	Location	PFAS Contamination
<b>Commonwealth</b>		
HMAS Harman	Woods Lane, Jerrabomberra, ACT	Potential
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Canberra Deep Space Discovery Centre	Discovery Drive, Paddys River, ACT	Potential
<b>ACT Government</b>		
Charnwood fire station (former)	35 Lhotsky St, Charnwood, ACT	Confirmed
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Gungahlin fire station	Anthony Rolfe Ave, Gungahlin ACT	Potential
Ainslie fire station	36 Wakefield Ave, Ainslie, ACT	Potential
Phillip fire station	Hindmarsh Dr & Botany St, Phillip ACT	Potential
Kambah fire station	500 Sulwood Dr, Kambah ACT	Potential
Mugga Lane Resource Recovery Facility	499 Mugga Lane, Jerrabomberra, ACT	Potential
West Belconnen Resource Management Centre	181 Parkwood Rd, MacGregor, ACT	Potential

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Rail Depot Kingston	Cunningham Street, Kingston, ACT	Potential
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**ACT Fire and Rescue/ACT Emergency Services Agency (ESA)/ACT Health/Worksafe ACT**

21. The ACT ESA have been working hard to ensure equipment is replaced and changed over.
22. There is no perceived benefit in blood screening for PFAS in ACT firefighters as there are no benchmarks to relate the results to.
23. The ACT ESA is working with WorkSafe ACT to ensure work health and safety obligations are met.
24. The ACT ESA has undertaken a risk assessment to prioritise the testing of remaining sites and further testing will be done at the higher priority locations in the near future **(need advice on how the sites are to be prioritised and an anticipated date for near future)**
25. ESA is seeking budget funding to undertake assessments of its sites (refer to Table 1) to determine if contamination has occurred.
26. ESA is responsible for its sites and under the polluter pays principle in the *Environment Protection Act 1997*, has responsibility for remediation of contamination at the Belconnen site.

**EPA**

27. The EPA is changing landfill and sewage treatment plant licenses to incorporate sampling for PFAS's in the standard monitoring programs to determine if discharges or inflows of PFAS are occurring at the facilities.
28. The EPA and the Environment, Planning and Sustainable Development Directorate have developed a sampling program to characterise potential PFAS sources and movements in the ACT and ensure the ACT meets the requirements of the NEMP. The sampling plan includes existing water monitoring sites and landfill, fuel storage and sewage treatment plant sites This detailed sampling program is expected to begin by November 2018.
29. The former Charnwood Fire Station has been redeveloped as a childcare center. The infrastructure was removed and validated with the site being found suitable for community use including childcare. The building owners have prepared an Operational Environmental Management Plan (OEMP) which was endorsed by the EPA on 15 March 2018. Prior to occupancy of the site, the lease must be varied to include the approved OEMP and the EPA receive endorsement from a suitably qualified environmental consultant confirming that the mitigation measures required by the OEMP have been successfully installed.
26. The former Belconnen Fire Station and Greenway Fire Station sites are Government sites which are currently not in use and waiting potential redevelopment. Further assessment, in accordance with the EPA Contaminated Sites Environment Protection Policy 2017, will determine the level of management or remediation required before redevelopment occurs. There is groundwater extraction near the Belconnen site which used for car washing. This water is not used for drinking supply or agricultural production. Thus the exposure pathways to humans from potential PFAS contamination of groundwater at this site is a negligible risk.

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**Financial Implications**

30. **ESA to provide information**

**Consultation**

Cross Directorate

31. Dominic Lane ESA, Mark Brown ACT Fire and Rescue, Conrad Barr ACT Health, Dr Paul Kelly ACT Health, Greg Jones, Worksafe, David Clapham CMTEDD and Daniel Walters, Environment, Planning and Sustainable Development Directorate have been consulted in the preparation of this brief.

External

32. Nil

**Benefits/Sensitivities**

33. The United Firefighters Union have recently raised concerns around potential health impacts for firefighters who may have come into contact with PFAS.

**Media Implications**

34. The Access Canberra Communications and Media Team have developed speaking points for this matter which has high media interest.

Signatory Name: Alison Purvis

Phone: 55275

Action Officer: Narelle Sargent

Phone: 75782

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MINISTERIAL BRIEF

**Chief Minister, Treasury and Economic  
Development Directorate**

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<b>To:</b>	Minister for Regulatory Services	<b>Tracking No.:</b> Click here to enter text.
<b>Date:</b>	20 June 2018	
<b>CC:</b>	Minister for Planning and Heritage	
<b>From:</b>	Alison Purvis, Chief Operating Officer	
<b>Subject:</b>	PFAS contamination issues in the ACT	
<b>Critical Date:</b>	22 June 2018	
<b>Critical Reason:</b>	Must be considered prior to Estimates	

**Purpose**

To provide an update on PFAS contamination issues in the ACT.

**Recommendations**

That you:

1. Note the information contained in this brief.

**Noted / Please Discuss**

MLA ..... /...../.....

Minister's Office Feedback

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## **Background**

### **PFAS - Nationally**

1. The compounds known as perfluorooctanesulfonic acid (PFOS) and perfluorooctanesulfonate (PFOA) were used for decades in firefighting foam concentrates such as Aqueous Film Forming Foam (AFFF) as well as a range of industrial/manufacturing processes. These compounds are collectively referred to as per- and poly-fluoroalkyl substances (PFAS).
2. PFAS are part of a diverse group of man-made chemicals also found in a range of common household products including non-stick cookware, fabric, furniture and food packaging. They are resistant to heat, water and oil.
3. PFAS are very stable compounds and do not break down in the environment, that is, they persist in the environment and in human bodies for a long time.
4. Australian health authorities, including ACT Health, report that there is no conclusive proof that PFAS causes any specific illnesses in humans, including cancer. There is also no consistent evidence that PFAS causes adverse human health outcomes in pregnant women or their babies.
5. Despite the current lack of certainty regarding the adverse effects of PFAS on organisms, the persistent nature of PFAS means a precautionary approach for managing PFAS has been adopted.
6. Governments in Australia work to a framework for PFAS management in accordance with the *Intergovernmental Agreement on a National Framework for Responding to PFAS Contamination* (February 2018) and the PFAS National Environment Management Plan (NEMP), adopted by all jurisdictions in March 2018.
7. The ACT Environment Protection Authority (EPA) is a participant on the Heads of Environment Protection Authorities Australia and New Zealand (HEPA) National Chemicals Working Group, which developed the PFAS National Environment Management Plan (NEMP).
8. The NEMP details environmental concentrations of PFAS for use in ecological and human health risk assessments, based on a precautionary approach. The NEMP also details methods for site assessments, sampling protocols and analytical determinations.
9. Issues with PFAS that have been widely reported in other jurisdictions have involved direct contamination of drinking water and/or food supplies.
10. Such issues are improbable in the ACT because of the remote catchments used for town water supply and the insignificant volume of food production in the ACT.

### **PFAS in Jervis Bay Territory**

11. The ACT Government is contracted by the Commonwealth Government to supply certain services to Jervis Bay Territory (JBT), including education, licences, justice services and environmental water testing.
12. The Commonwealth Department of Defence is leading the PFAS investigation in JBT, centred on the Jervis Bay Range Facility. The ACT Government is a member of Defence's Project Control Group and provides advice and support where required.
13. Chief Minister Treasury and Economic Development Directorate (CMTEDD) is briefing the Chief Minister on issues with PFAS in JBT. On the basis of preliminary testing, ACT

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Health is currently working with NSW EPA to advise the Commonwealth Government on community health advice relating to the consumption of marine life in JBT. A copy of this briefing will be provided to you when complete.

14. The ACT Government is unable to progress assessment or remediation at Commonwealth sites because the Commonwealth is not bound by ACT legislation.

**PFAS in the ACT**

15. Foam concentrates containing PFAS are no longer used in the ACT by ACT firefighting agencies. The phasing out of AFFF concentrate by ACT Fire & Rescue commenced in September 2004. It was completely withdrawn from service in April 2005 and replaced with fluorine-free foam concentrate.
16. ACT Fire & Rescue replaced its nine (9) litre portable AFFF fire extinguishers on fire fighting vehicles with fluorine-free alternatives in early 2017.

**Issues**

**The ACT and PFAS**

17. There are three known PFAS affected sites in the ACT: Canberra Airport which is located on Commonwealth land and the former Charnwood and Belconnen Fire Station and Training Centre sites, located on Territory land.
18. Under the polluter pays principle in the *Environment Protection Act 1997*, firstly the polluter has responsibility for management and/or remediation of their contamination. If the polluter is not identifiable the next most appropriate person is responsible which, is usually the land owner.
19. The Territory Government (ESA) has responsibility for the Belconnen site whilst the Commonwealth Government has responsibility for the Airport site.
20. AFFF was specifically used to suppress flammable liquid fires and was used in training exercises. There are a number of other facilities in the ACT that are likely to have stored or used AFFF and thus have the potential for PFAS contamination.
21. In addition, landfills and waste water/sewerage treatment plants are potential sources of PFAS contamination from household, commercial and industrial wastes and discharges.
22. Potential PFAS contaminated sites in the ACT are listed in Table 1 below.

**Table 1: Potential PFAS contaminated sites in the ACT**

Facility	Location	PFAS Contamination
<b>Commonwealth Land</b>		
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Canberra Airport	Pialligo Avenue, ACT	Confirmed
Majura Firing range	Malcolm Vale Road, Pialligo, ACT	Potential
Australian Federal Police Majura	1 Tambreet St, Majura, ACT	Potential
Canberra Deep Space Discovery Centre	Discovery Drive, Paddys River, ACT	Potential
Lawson Naval Base	Baldwin Drive	Potential
AFP Weston Creek	2 Unwin Street Weston, ACT	Potential

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<b>Territory Land</b>		
Charnwood Fire Station (former)	35 Lhotsky St, Charnwood, ACT	Confirmed
Belconnen Fire Station & Training Centre (former)	41 Rae St, Belconnen, ACT	Confirmed
Forrest Fire Station (former)	Empire Circuit, Forrest	Potential
Fyshwick Fire Station	1 Dalby St, Fyshwick ACT	Potential
Gungahlin Fire Station	Anthony Rolfe Ave, Gungahlin ACT	Potential
Ainslie Fire Station	36 Wakefield Ave, Ainslie, ACT	Potential
Chisholm Fire Station	6 Benham Street, Chisholm	Potential
Phillip Fire Station	Hindmarsh Dr & Botany St, Phillip ACT	Potential
Kambah Fire Station	500 Sulwood Dr, Kambah ACT	Potential
Greenway Ambulance Station (former Greenway Fire Station)	201 Scollay St, Greenway ACT	Potential
Mugga Lane Resource Recovery Facility	499 Mugga Lane, Jerrabomberra, ACT	Potential
West Belconnen Resource Management Centre	181 Parkwood Rd, MacGregor, ACT	Potential
Rail Depot Kingston	Cunningham Street, Kingston, ACT	Potential
Weston Creek Sewerage Treatment Works	Brackenreg Road, Weston ACT	Potential
Lower Molonglo Waste Water Treatment Works	446 Stockdill Drive, Holt ACT	Potential
Oaks Estate Sewerage Treatment Works	Cnr Nimrod Road & Mountain Road, Oaks Estate, ACT	Potential
Kingston Foreshore	11 Wentworth Avenue, Kingston ACT	Potential
Fuel Depots (Fyshwick/Oaks Estate)	16 Ipswich St & 13-17 Barrier St, Fyshwick, ACT and 22 Railway Street Oaks Estate, ACT	Potential

**ACT Fire & Rescue/ACT Emergency Services Agency (ESA)/ACT Health/Worksafe ACT**

23. ACT Fire & Rescue advise that most of the fire appliances and firefighting equipment used by ACT Fire & Rescue were acquired after AFFF had been phased out. Those vehicles and equipment that were in service prior to this have been thoroughly cleaned and are not considered to pose any risk.
24. ACT Health advise there is no perceived benefit in blood screening for PFAS in ACT firefighters as there are no benchmarks to relate the results to.
25. The ESA is working with WorkSafe ACT to ensure work health and safety obligations are met.
26. The ESA has undertaken a risk assessment to prioritise the testing of remaining sites and further testing will be done at the higher priority locations in the near future.
27. The ESA sites were prioritised according to the likelihood that training involving AFFF was undertaken on-site. The lower ranked sites are fire stations where there is limited yard space to undertake extensive training, but it was probable that some training took place (Refer to Attachment A).

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The ESA is seeking budget funding to undertake assessments of its sites (refer to Table 1) to determine if contamination has occurred.

**EPA**

28. The EPA is changing landfill and sewage treatment plant licenses to incorporate sampling for PFAS's in the standard monitoring programs to determine if discharges or inflows of PFAS are occurring at the facilities.
29. The EPA and the Environment, Planning and Sustainable Development Directorate (EPSSD) have developed a sampling plan that should quantify (occurrence and concentration) of PFAS across the ACT. Sampling will involve existing government water monitoring sites as well as, landfill, industrial, and sewage treatment sites. The sampling program will follow the methods outlined in the NEMP and is expected to begin by November 2018.
30. The former Charnwood Fire Station site is being redeveloped as a childcare centre. This site was assessed and found suitable by ACT Health and the EPA for community use including a childcare centre, if suitable mitigation measures are implemented. The building owners have prepared an Operational Environment Management Plan (OEMP) which was endorsed by the EPA on 15 March 2018. A condition of the EPA's endorsement is that prior to occupancy of the site, the lease must be varied to include the approved OEMP and the EPA must receive endorsement from a suitably qualified environmental consultant confirming that the mitigation measures required by the OEMP have been successfully installed.
31. In addition, ACT Health approval is conditional on the applicant providing ACT Health with details of where each proposed mitigation barrier will be implemented across the site and an onsite inspection undertaken by Health Protection Service officers following the installation of mitigation measures.
32. The former Greenway Fire Station site was readapted as an Ambulance Station about 18 months ago.
26. The former Belconnen Fire Station is a Government owned site which is currently not in use and waiting potential redevelopment. Further assessment, in accordance with the EPA Contaminated Sites Environment Protection Policy 2017 and the NEMP, will determine the level of management or remediation required before redevelopment occurs.
27. There is groundwater extraction near the Belconnen site which used for car washing. This water is not used for drinking supply or agricultural production. Thus the exposure pathways to humans from potential PFAS contamination of groundwater at this site is a negligible risk.

**Financial Implications**

33. ESA advise that the indicative cost to conduct assessments, including sampling and analysis of the ACT Fire & Rescue sites listed in Table 1 is approximately \$55,000 per site.

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## **Consultation**

### Cross Directorate

34. Dominic Lane Commissioner, ESA, Mark Brown Chief Officer, ACT Fire & Rescue, Conrad Barr Executive Director HPS ACT Health, Dr Paul Kelly Chief Health Officer, ACT Health, Greg Jones, Worksafe Commissioner, David Clapham Acting Manager, Strategic Policy & Cabinet, CMTEDD and Daniel Walters, Senior Manager, Environment Protection Policy, EPSDD have been consulted in the preparation of this brief.

### External

35. Nil

## **Benefits/Sensitivities**

36. The United Firefighters Union have recently raised concerns around potential health impacts for firefighters who may have come into contact with PFAS.

## **Media Implications**

37. The Access Canberra Communications and Media Team have developed speaking points for this matter which has high media interest.

Signatory Name:	Alison Purvis	Phone: 55275
Action Officer:	Narelle Sargent	Phone: 75782

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MINISTERIAL BRIEF

**Chief Minister, Treasury and Economic  
Development Directorate**

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<b>To:</b>	Minister for Regulatory Services	Tracking No.: Click here to enter text.
<b>Date:</b>	20 June 2018	
<b>CC:</b>	Minister for Environment and Heritage Minister for Planning and Land Management Minister for Police and Emergency Services	
<b>From:</b>	Alison Purvis, Chief Operating Officer	
<b>Subject:</b>	PFAS contamination issues in the ACT	
<b>Critical Date:</b>	22 June 2018	
<b>Critical Reason:</b>	Must be considered prior to Estimates	

**Purpose**

To provide an update on PFAS contamination issues in the ACT.

**Recommendations**

That you:

1. Note the information contained in this brief.
2. Note the attached speaking points

**Noted / Please Discuss**

MLA ..... /...../.....

Minister's Office Feedback
----------------------------

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## **Background**

### **PFAS - Nationally**

1. The compounds known as perfluorooctanesulfonic acid (PFOS) and perfluorooctanesulfonate (PFOA) were used for decades in firefighting foam concentrates such as Aqueous Film Forming Foam (AFFF) as well as a range of industrial/manufacturing processes. These compounds are collectively referred to as per- and poly-fluoroalkyl substances (PFAS).
2. PFAS are part of a diverse group of man-made chemicals also found in a range of common household products including non-stick cookware, fabric, furniture and food packaging. They are resistant to heat, water and oil.
3. PFAS are very stable compounds and do not break down in the environment, that is, they persist in the environment and in human bodies for a long time.
4. Australian health authorities, including ACT Health, report that there is no conclusive proof that PFAS causes any specific illnesses in humans, including cancer. There is also no consistent evidence that PFAS causes adverse human health outcomes in pregnant women or their babies.
5. Despite the current lack of certainty regarding the adverse effects of PFAS on organisms, the persistent nature of PFAS means a precautionary approach for managing PFAS has been adopted.
6. Governments in Australia work to a framework for PFAS management in accordance with the *Intergovernmental Agreement on a National Framework for Responding to PFAS Contamination* (February 2018) and the PFAS National Environment Management Plan (NEMP), adopted by all jurisdictions in March 2018.
7. The ACT Environment Protection Authority (EPA) is a participant on the Heads of Environment Protection Authorities Australia and New Zealand (HEPA) National Chemicals Working Group, which developed the PFAS National Environment Management Plan (NEMP).
8. The NEMP details environmental concentrations of PFAS for use in ecological and human health risk assessments, based on a precautionary approach. The NEMP also details methods for site assessments, sampling protocols and analytical determinations.
9. Issues with PFAS that have been widely reported in other jurisdictions have involved direct contamination of drinking water and/or food supplies.
10. Such issues are improbable in the ACT because of the remote catchments used for town water supply and the insignificant volume of food production in the ACT.

### **PFAS in Jervis Bay Territory**

11. The ACT Government is contracted by the Commonwealth Government to supply certain services to Jervis Bay Territory (JBT), including education, licences, justice services and environmental water testing.
12. The Commonwealth Department of Defence is leading the PFAS investigation in JBT, centred on the Jervis Bay Range Facility. The ACT Government is a member of Defence's Project Control Group and provides advice and support where required.
13. Chief Minister Treasury and Economic Development Directorate (CMTEDD) is briefing the Chief Minister on issues with PFAS in JBT. On the basis of preliminary testing, ACT

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Health is currently working with NSW EPA to advise the Commonwealth Government on community health advice relating to the consumption of marine life in JBT. A copy of this briefing will be provided to you when complete.

14. The ACT Government is unable to progress assessment or remediation at Commonwealth sites because the Commonwealth is not bound by ACT legislation.

**PFAS in the ACT**

15. Foam concentrates containing PFAS are no longer used in the ACT by ACT firefighting agencies. The phasing out of AFFF concentrate by ACT Fire & Rescue commenced in September 2004. It was completely withdrawn from service in April 2005 and replaced with fluorine-free foam concentrate.
16. ACT Fire & Rescue replaced its nine (9) litre portable AFFF fire extinguishers on fire fighting vehicles with fluorine-free alternatives in early 2017.

**Issues**

**The ACT and PFAS**

17. There are four known PFAS affected sites in the ACT: Canberra Airport which is located on Commonwealth land and the former Charnwood and Belconnen Fire Station and Training Centre sites and the West Belconnen Resource Management Centre (landfill), located on Territory land.
18. Under the polluter pays principle in the *Environment Protection Act 1997*, firstly the polluter has responsibility for management and/or remediation of their contamination. If the polluter is not identifiable the next most appropriate person is responsible which, is usually the land owner.
19. The Territory Government (ESA) has responsibility for the Belconnen and West Belconnen sites whilst the Commonwealth Government has responsibility for the Airport site.
20. The former Charnwood site has been sold and is now privately owned.
21. AFFF was specifically used to suppress flammable liquid fires and was used in training exercises. There are a number of other facilities in the ACT that are likely to have stored or used AFFF and thus have the potential for PFAS contamination.
22. In addition, landfills and waste water/sewerage treatment plants are potential sources of PFAS contamination from household, commercial and industrial wastes and discharges.
23. Potential PFAS contaminated sites in the ACT are listed in Table 1 below.

**Table 1: Potential PFAS contaminated sites in the ACT**

Facility	Location	PFAS Contamination
<b>Commonwealth Land</b>		
HMAS Harman	Woods Lane, Jerrabomberra, ACT	Potential
Duntroon Royal Military College	Staff Cadet Avenue, Campbell, ACT	Potential
Canberra Airport	Pialligo Avenue, ACT	Confirmed
Majura Firing range	Malcolm Vale Road, Pialligo, ACT	Potential
Australian Federal Police Majura	1 Tambreet St, Majura, ACT	Potential

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Canberra Deep Space Discovery Centre	Discovery Drive, Paddys River, ACT	Potential
Lawson Naval Base	Baldwin Drive	Potential
AFP Weston Creek	2 Unwin Street Weston, ACT	Potential
<b>Territory Land</b>		
Charnwood Fire Station (former)	35 Lhotsky St, Charnwood, ACT	Confirmed
Belconnen Fire Station & Training Centre (former)	41 Rae St, Belconnen, ACT	Confirmed
Forrest Fire Station (former)	Empire Circuit, Forrest	Potential
Fyshwick Fire Station	1 Dalby St, Fyshwick ACT	Potential
Gungahlin Fire Station	Anthony Rolfe Ave, Gungahlin ACT	Potential
Ainslie Fire Station	36 Wakefield Ave, Ainslie, ACT	Potential
Chisholm Fire Station	6 Benham Street, Chisholm	Potential
Phillip Fire Station	Hindmarsh Dr & Botany St, Phillip ACT	Potential
Kambah Fire Station	500 Sulwood Dr, Kambah ACT	Potential
Greenway Ambulance Station (former Greenway Fire Station)	201 Scollay St, Greenway ACT	Potential
Mugga Lane Resource Recovery Facility	499 Mugga Lane, Jerrabomberra, ACT	Potential
West Belconnen Resource Management Centre	181 Parkwood Rd, MacGregor, ACT	Confirmed
Rail Depot Kingston	Cunningham Street, Kingston, ACT	Potential
Weston Creek Sewerage Treatment Works	Brackenreg Road, Weston ACT	Potential
Lower Molonglo Waste Water Treatment Works	446 Stockdill Drive, Holt ACT	Potential
Oaks Estate Sewerage Treatment Works	Cnr Nimrod Road & Mountain Road, Oaks Estate, ACT	Potential
Kingston Foreshore	11 Wentworth Avenue, Kingston ACT	Potential
Fuel Depots (Fyshwick/Oaks Estate)	16 Ipswich St & 13-17 Barrier St, Fyshwick, ACT and 22 Railway Street Oaks Estate, ACT	Potential

**ACT Fire & Rescue/ACT Emergency Services Agency (ESA)/ACT Health/WorkSafe ACT**

24. ACT Fire & Rescue advise that most of the fire appliances and firefighting equipment used by ACT Fire & Rescue were acquired after AFFF had been phased out. Those vehicles and equipment that were in service prior to this have been thoroughly cleaned and are not considered to pose any risk.
25. ACT Health advise there is no perceived benefit in blood screening for PFAS in ACT firefighters as there are no benchmarks to relate the results to.
26. The ESA is working with WorkSafe ACT to ensure work health and safety obligations are met.
27. The ESA has undertaken a risk assessment to prioritise the testing of remaining sites and further testing will be done at the higher priority locations in the near future.

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28. The ESA sites were prioritised according to the likelihood that training involving AFFF was undertaken on-site. The lower ranked sites are fire stations where there is limited yard space to undertake extensive training, but it was probable that some training took place (Refer to Attachment A).  
The ESA is seeking budget funding to undertake assessments of its sites (refer to Table 1) to determine if contamination has occurred.

**EPA**

29. The EPA is changing landfill and sewage treatment plant licenses to incorporate sampling for PFAS's in the standard monitoring programs to determine if discharges or inflows of PFAS are occurring at the facilities.
30. The EPA and the Environment, Planning and Sustainable Development Directorate (EPSSD) have developed a sampling plan that should quantify (occurrence and concentration) of PFAS across the ACT. Sampling will involve existing government water monitoring sites as well as, landfill, industrial, and sewage treatment sites. The sampling program will follow the methods outlined in the NEMP and is expected to begin by November 2018.
31. The former Charnwood Fire Station site is being redeveloped as a childcare centre. This site was assessed and found suitable by ACT Health and the EPA for community use including a childcare centre, if suitable mitigation measures are implemented. The building owners have prepared an Operational Environment Management Plan (OEMP) which was endorsed by the EPA on 15 March 2018. A condition of the EPA's endorsement is that prior to occupancy of the site, the lease must be varied to include the approved OEMP and the EPA must receive endorsement from a suitably qualified environmental consultant confirming that the mitigation measures required by the OEMP have been successfully installed.
32. In addition, ACT Health approval is conditional on the applicant providing ACT Health with details of where each proposed mitigation barrier will be implemented across the site and an onsite inspection undertaken by Health Protection Service officers following the installation of mitigation measures.
33. The former Greenway Fire Station site was readapted as an Ambulance Station about 18 months ago.
26. The former Belconnen Fire Station is a Government owned site which was transferred from ESA to ACT Property Group in May 2018. The ACT Property Group are working with the Suburban Land Agency (SLA) are working on it demolition and remediation of the site.
27. There is groundwater extraction near the Belconnen site which used for car washing. This water is not used for drinking supply or agricultural production. Thus the exposure pathways to humans from potential PFAS contamination of groundwater at this site is a negligible risk.

**Financial Implications**

34. ESA advise that the indicative cost to conduct assessments, including sampling and analysis of the ACT Fire & Rescue sites listed in Table 1 is approximately \$55,000 per

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site.

### **Consultation**

#### Cross Directorate

35. Dominic Lane Commissioner, ESA, Mark Brown Chief Officer, ACT Fire & Rescue, Conrad Barr Executive Director HPS ACT Health, Dr Paul Kelly Chief Health Officer, ACT Health, Greg Jones, Worksafe Commissioner, David Clapham Acting Manager, Strategic Policy & Cabinet, CMTEDD and Daniel Walters, Senior Manager, Environment Protection Policy, EPSDD have been consulted in the preparation of this brief.

#### External

36. Nil

### **Benefits/Sensitivities**

37. The United Firefighters Union have recently raised concerns around potential health impacts for firefighters who may have come into contact with PFAS.

38. There is likely to be heightened community interest due to media coverage and if further sites are identified as impacted by PFAS.

### **Media Implications**

39. The Access Canberra Communications and Media Team in consultation with relevant Directorates have developed speaking points for this matter which has high media interest.

Signatory Name: Alison Purvis

Phone: 55275

Action Officer: Narelle Sargent

Phone: 75782

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MINISTERIAL BRIEF

Chief Minister, Treasury and Economic  
Development Directorate

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**To:** Minister for Regulatory Services

Tracking No.: MIN:2018/002552

**Date:** 20 June 2018

**CC:** Minister for Environment and Heritage  
Minister for Planning and Land Management  
Minister for Police and Emergency Services

**From:** Alison Purvis, Acting Chief Operating Officer, Access Canberra

**Subject:** PFAS contamination issues in the ACT

**Critical Date:**

**Critical Reason:**

**Purpose**

To provide an update on PFAS contamination issues in the ACT.

**Recommendations**

That you:

1. Note the information contained in this brief; and
2. Note the attached speaking points.

**Noted / Please Discuss**

Gordon Ramsay MLA ..... /...../.....

Minister's Office Feedback

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## Background

### PFAS – Nationally

1. The compounds known as perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) were used for decades in firefighting foam concentrates such as Aqueous Film Forming Foam (AFFF) as well as a range of industrial/manufacturing processes. These compounds are collectively referred to as per- and poly-fluoroalkyl substances (PFAS).
2. PFAS are part of a diverse group of man-made chemicals also found in a range of common household products including non-stick cookware, fabric, furniture and food packaging. They are resistant to heat, water and oil.
3. PFAS are very stable compounds and do not easily break down in the environment. As a result, they persist in the environment and in human bodies for a long time.
4. There is no conclusive proof that PFAS causes any specific illnesses in humans, including cancer. There is also no consistent evidence that PFAS causes adverse human health outcomes in pregnant women or their babies.
5. Despite the current lack of certainty regarding the adverse effects of PFAS on organisms, the persistent nature of PFAS means a precautionary approach for managing PFAS has been adopted.
6. Governments in Australia work to a framework for PFAS management in accordance with the *Intergovernmental Agreement on a National Framework for Responding to PFAS Contamination* (February 2018) and the PFAS National Environment Management Plan (NEMP), adopted by all jurisdictions in March 2018.
7. The ACT Environment Protection Authority (EPA) is a participant on the Heads of Environment Protection Authorities Australia and New Zealand (HEPA) National Chemicals Working Group, which developed the PFAS National Environment Management Plan (NEMP).
8. The NEMP details environmental concentrations of PFAS for use in ecological and human health risk assessments, based on a precautionary approach. The NEMP also details methods for site assessments, sampling protocols and analytical determinations.
9. Issues with PFAS that have been widely reported in other jurisdictions have involved direct contamination of drinking water and/or food supplies.
10. Such issues are improbable in the ACT because of the remote catchments used for town water supply, the insignificant volume of food production in the ACT and potentially contaminated sites not being agricultural land or sources of drinking water.
11. In recent years the ACT EPA, in conjunction with the National Capital Authority and Icon Water, undertook sampling across ACT waterways to determine background levels of PFAS. The water sampling results did not detect PFAS in ACT waterways.

### PFAS in Jervis Bay Territory

12. The ACT Government is contracted by the Commonwealth Government to supply certain services to Jervis Bay Territory (JBT), including education, licences, justice

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services and environmental water testing.

13. The Commonwealth Department of Defence is leading the PFAS investigation in JBT, centred on the Jervis Bay Range Facility. The ACT Government is a member of Defence's Project Control Group and provides advice and support where required.
14. Chief Minister Treasury and Economic Development Directorate (CMTEDD) is briefing the Chief Minister on issues with PFAS in JBT. On the basis of preliminary testing, ACT Health is currently working with NSW EPA to advise the Commonwealth Government on community health advice relating to the consumption of marine life in JBT. A copy of this briefing will be provided to you when complete.
15. The ACT Government is unable to progress assessment or remediation at Commonwealth sites because the Commonwealth is not bound by ACT legislation.

**PFAS in the ACT**

16. Foam concentrates containing PFAS are no longer used in the ACT by ACT firefighting agencies. The phasing out of AFFF concentrate by ACT Fire & Rescue commenced in September 2004. The AFFF concentrates were completely withdrawn from service in April 2005 and replaced with fluorine-free foam concentrate.
17. Once a viable alternative was available, ACT Fire & Rescue replaced its nine litre portable AFFF fire extinguishers on fire fighting vehicles with fluorine-free alternatives. This occurred in early 2017.

**Issues**

**The ACT and PFAS**

18. There are four known PFAS affected sites in the ACT. These are Canberra Airport which is located on Commonwealth land and the former Charnwood Fire Station, the Belconnen Fire Station and Training Centre sites and the West Belconnen Resource Management Centre (landfill) which are located on Territory land.
19. Under the polluter pays principle, outlined in the Environment Protection Act 1997, it is the polluter who has primary responsibility for management and/or remediation of their contamination. If the polluter is not identifiable the next most appropriate person is responsible, which is usually the land owner.
20. The Territory Government has responsibility for the Belconnen Fire Station and Training Centre (ESA) and the West Belconnen Resource Management Centre (Transport Canberra and City Services) sites, whilst the Commonwealth Government has responsibility for Canberra Airport.
21. The former Charnwood Fire Station site has been sold and is now privately owned.
22. AFFF was specifically used to suppress flammable liquid fires and was used in training exercises. There are a number of other facilities in the ACT that are likely to have stored or used AFFF and thus have the potential for PFAS contamination.
23. In addition, landfills and waste water/sewerage treatment plants are potential sources of PFAS contamination from household, commercial and industrial wastes and discharges.
24. Potential PFAS contaminated sites in the ACT are listed in Table 1 below.

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**Table 1: Potential PFAS contaminated sites in the ACT**

Facility	Location	PFAS Contamination
<b>Commonwealth Land</b>		
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Majura Firing range	Malcolm Vale Road, Pialligo, ACT	Potential
Australian Federal Police Majura	1 Tambreet St, Majura, ACT	Potential
Canberra Deep Space Discovery Centre	Discovery Drive, Paddys River, ACT	Potential
Lawson Naval Base	Baldwin Drive	Potential
AFP Weston Creek	2 Unwin Street Weston, ACT	Potential
<b>Territory Land</b>		
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Fyshwick Fire Station	1 Dalby St, Fyshwick ACT	Potential
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Kingston Foreshore	11 Wentworth Avenue, Kingston ACT	Potential
Fuel Depots (Fyshwick/Oaks Estate)	16 Ipswich St & 13-17 Barrier St, Fyshwick, ACT and 22 Railway Street Oaks Estate, ACT	Potential

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**ACT Fire & Rescue/ACT Emergency Services Agency (ESA)/ACT Health/Worksafe ACT**

25. ACT Fire & Rescue advise that most of the fire appliances and firefighting equipment used by ACT Fire & Rescue were acquired after AFFF had been phased out. Those vehicles and equipment that were in service prior to this have been thoroughly cleaned and are not considered to pose any risk.
26. Expert advice currently does not advise any specific biochemical or disease screening for groups exposed to PFAS outside of specific research studies.
27. The ESA is working with WorkSafe ACT to ensure work health and safety obligations are met.
28. The ESA has undertaken a risk assessment to prioritise the testing of remaining sites and further testing will be done at the higher priority locations in the near future.
29. The ESA sites were prioritised according to the likelihood that training involving AFFF was undertaken on-site. The lower ranked sites are fire stations where there is limited yard space to undertake extensive training, but it was probable that some training took place (Refer to Attachment A).
30. The ESA is seeking budget funding to undertake assessments of its sites (refer to Table 1) to determine if contamination has occurred.

**EPA**

31. The EPA is changing landfill and sewage treatment plant licenses to incorporate sampling for PFAS's in the standard monitoring programs to determine if discharges or inflows of PFAS are occurring at the facilities.
32. The EPA and the Environment, Planning and Sustainable Development Directorate (EPSSD) have developed a sampling plan that should quantify (occurrence and concentration) of PFAS across the ACT. Sampling will involve existing government water monitoring sites as well as, landfill, industrial, and sewage treatment sites. The sampling program will follow the methods outlined in the NEMP and is expected to begin by November 2018.
33. The former Charnwood Fire Station site is being redeveloped as a childcare centre. This site was assessed and found suitable by ACT Health and the EPA for community use including a childcare centre, if suitable mitigation measures are implemented. The building owners have prepared an Operational Environment Management Plan (OEMP) which was endorsed by the EPA on 15 March 2018. A condition of the EPA's endorsement is that prior to occupancy of the site, the lease must be varied to include the approved OEMP and the EPA must receive endorsement from a suitably qualified environmental consultant confirming that the mitigation measures required by the OEMP have been successfully installed.
34. In addition, ACT Health approval is conditional on the applicant providing ACT Health with details of where each proposed mitigation barrier will be implemented across the site and an onsite inspection undertaken by Health Protection Service officers following the installation of mitigation measures.
35. The former Greenway Fire Station site was readapted as an Ambulance Station about 18 months ago.

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36. The former Belconnen Fire Station and Training Centre is a Government owned site, which was transferred from ESA to ACT Property Group in May 2018. The ACT Property Group are working with the Suburban Land Agency (SLA) on the demolition and remediation of the site.
37. There is groundwater extraction near the Belconnen site which used for car washing. This water is not used for drinking supply or agricultural production. Thus the exposure pathways to humans from potential PFAS contamination of groundwater at this site is a negligible risk.

**Financial Implications**

38. ESA advise that the indicative cost to conduct assessments, including sampling and analysis of the ACT Fire & Rescue sites listed in Table 1 is approximately \$55,000 per site.

**Consultation**

Cross Directorate

39. Dominic Lane Commissioner, ESA; Mark Brown Chief Officer, ACT Fire & Rescue; Conrad Barr Executive Director HPS ACT Health; Dr Paul Kelly Chief Health Officer, ACT Health; Dr Andrew Pengilly, Senior Specialist ACT Health; Greg Jones, WorkSafe Commissioner; Adam Stankevicius, Director, Government and Regulatory Reform, CMTEDD; David Clapham Acting Manager, Strategic Policy & Cabinet, CMTEDD; Daniel Walters, Senior Manager, Environment Protection Policy, EPSDD; Luigina Corich, Manager Infrastructure and Business Management Justice and Community Safety Directorate; Neil Bulless, Deputy Chief Executive Officer SLA; Garry Gordon, Director, Property Group, Treasury, and Mike Brown, Senior Manager, Treasury.

External

40. Nil

**Benefits/Sensitivities**

41. The United Firefighters Union have recently raised concerns around potential health impacts for firefighters who may have come into contact with PFAS.
42. There is likely to be heightened community interest due to media coverage and if further sites are identified as impacted by PFAS.

**Media Implications**

43. The Access Canberra Communications and Media Team in consultation with relevant Directorates have developed speaking points for this matter which has high media interest. The speaking points contain more detailed information, some of which is not covered in this brief.

Signatory Name:	Alison Purvis	Phone:	6205 5275
Action Officer:	Narelle Sargent	Phone:	6207 5782

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**Progression of ACT requirements under the PFAS Intergovernmental Agreement &  
National Environment Management Plan (NEMP)**

**Meeting 1**

**Date:** 5 July 2018

**Time:** 2.00 pm – 3.30 pm

**Venue:** EPA Meeting Room, Ground Level TransACT House, 470 Northbourne Avenue Dickson ACT

**Purpose:** This meeting will focus on two of the action items from the NEMP:

1. Site prioritisation - preliminary prioritisation of sites likely to have PFAS contamination.
2. PFAS monitoring - the NEMP provides advice for the two forms of monitoring programs: ambient and site-specific.

**Agenda**

**1.0 Background**

- IGA and NEMP
- Jurisdictional boundaries (what ACT can and can't do with Commonwealth sites)

Discussion of sites in the ACT

Discussion of ambient sampling plan

**2.0 Site prioritisation**

PFAS contamination is known to have occurred at three sites in the ACT. A high level conceptual model of PFAS sources in the ACT indicates that there will be more sites with some level of PFAS contamination. Sites have been listed and given a preliminary ranking (probability and extent) for PFAS. Further analysis of the sites will refine the ranking which will also have an effect on the environmental sampling plan.

Facility	Rank	PFAS Contamination
<b>Commonwealth Land</b>		
Canberra Airport	1	Confirmed
<b>Territory Land</b>		
Belconnen Fire Station & Training Centre (former)	2	Confirmed
Charnwood Fire Station (former)	3	Confirmed
West Belconnen Resource Management Centre	4	Confirmed
Mugga Lane Resource Recovery Facility	5	Potential
Forrest Fire Station (former)	7	Potential
Ainslie Fire Station	8	Potential
Phillip Fire Station	9	Potential
Fyshwick Fire Station	10	Potential
Kambah Fire Station	11	Potential
Chisholm Fire Station	12	Potential
Greenway Ambulance Station (former Greenway Fire Station)	13	Potential
Gungahlin Fire Station	14	Potential
Weston Creek Sewerage Treatment Works	16	Potential
Oaks Estate QBN Sewerage Treatment Works	17	Potential
Lower Molonglo Waste Water Treatment Works	18	Potential
Kingston Foreshore	19	Potential
Rail Depot Kingston	20	Potential
Fuel Depots (Fyshwick/Oaks Estate)	21	Potential
<b>Commonwealth Land</b>		
AFP Weston Creek	22	Potential
Lawson Naval Base	23	Potential
Canberra Deep Space Discovery Centre	24	Potential
Duntroon Royal Military College	25	Potential
Majura Firing range	26	Potential
HMAS Harman	27	Potential
Australian Federal Police Majura	28	Potential

### 3.0 Sampling Plan

EPA and EPSDD have a draft ambient sampling plan and it will have some interaction with site prioritisation actions and site specific monitoring.

An initial sampling round was conducted in November 2016 to give an indication of the PFAS across ACT waterways. The activity was opportunistic and piggybacked off existing water quality monitoring programs (eg location, timing and sample type).

The sampling did not detect PFAS.

PFAS contamination is confirmed at three sites in the ACT. A high level conceptual model of PFAS sources in the ACT indicates that there will be more sites with some level of PFAS contamination and therefore the potential for offsite PFAS impacts.

A draft sampling plan (sites and sample type) has developed that should more accurately determine the PFAS concentrations in receiving environments across the ACT.

It is proposed that a minimum of two sampling events be performed, to account for the variability in concentrations that occur in surface water. Two sampling events will give reasonable confidence in the results should PFAS not be detected at a site. Sites where PFAS is detected will be evaluated further to determine if more (and expanded) sampling is required.

The proposed sampling locations are below in Table 1 and Map 1.

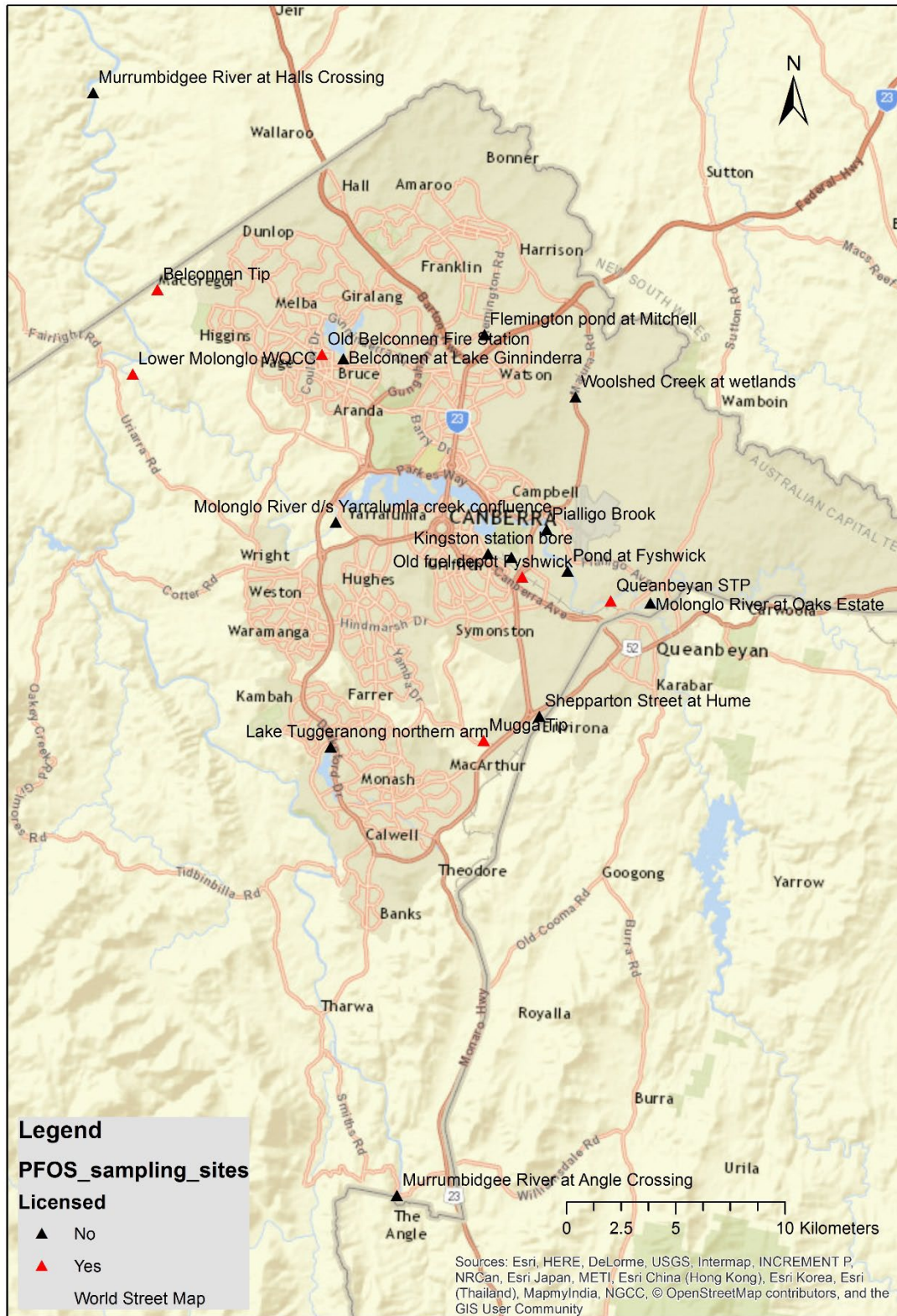
Table 1: Proposed PFAS Sampling Locations

Location Name	Analytes	Samples	Licensed
Molonglo River (downstream of Yarralumla creek confluence)	PFOS	S/water *, Sediment	No
Flemington pond at Mitchell	PFOS, PAH, TPH	S/water, Sediment	No
Shepparton Street at Hume	PFOS, PAH, TPH	S/water, Sediment	No
Pond on Jerrabomberra Creek	PFOS, PAH, TPH	S/water, Sediment	No
Pond at Fyshwick	PFOS, PAH, TPH	S/water, Sediment	No
Pialligo Brook	PFOS	S/water, Sediment	No
Belconnen at Lake Ginninderra	PFOS	S/water, Sediment	No
Lake Tuggeranong northern arm	PFOS	S/water, Sediment	No
Molonglo River at Oaks Estate	PFOS, OCP, OPP	S/water, Sediment	No
Murrumbidgee River at Angle Crossing	PFOS, OCP, OPP	S/water, Sediment	No
Murrumbidgee River at Halls Crossing	PFOS, OCP, OPP	S/water, Sediment	No
Woolshed Creek at wetlands	PFOS	S/water, Sediment	No
Kingston station bore	PFOS	G/water **	No
Mugga Tip	PFOS	S/water, G/water, sediment	Yes
Queanbeyan STP	PFOS	S/water, Sediment	Yes
Lower Molonglo WQCC	PFOS	S/water, Sediment	Yes
Belconnen Tip	PFOS	G/water, sediment	Yes
Old Belconnen Fire Station	PFOS	S/water, G/water, sediment	Yes
Old fuel depot Fyshwick	PFOS	S/water, G/water, sediment	Yes
Tip creek	PFOS	S/water, Sediment	No

\* Surface water

\*\*Groundwater

Map 1: PFAS Sampling Sites





# ANNUAL REPORT HEARING BRIEF

**Portfolio:** Environment and Heritage

**ISSUE:** PFAS CONTAMINATION

**Talking points:**

- Per- and poly-fluoroalkyl substances (PFAS) are man-made chemicals that have been used in industry and consumer products worldwide since the 1950s.
- They have been used in aviation firefighting foams (AFFF), non-stick cookware, water-repellent clothing, stain-resistant fabrics and carpets, some cosmetics, and products that resist grease, water, and oil.
- Firefighting foam concentrates used to suppress flammable liquid fires previously contained PFAS.
- Phasing out of these concentrates by ACT Fire & Rescue commenced in September 2004, and completely withdrawn from service in April 2005.
- PFAS are very stable compounds and do not break down in the environment (i.e. they persist in the environment and in human bodies for a long time).
- There is no conclusive proof that PFAS cause any specific illnesses in humans, including cancer.
- Despite the current lack of certainty regarding the adverse effects of PFAS on organisms, the persistent nature of PFAS means a precautionary approach for managing PFAS has been adopted.
- Governments in Australia work to a framework for PFAS management in accordance with the *Intergovernmental Agreement on a National Framework for Responding to PFAS Contamination* (February 2018) and the PFAS National Environment Management Plan (NEMP), adopted by all jurisdictions March 2018.
- The NEMP defines the level of PFAS in soil and water that require further investigation. It also details methods for site assessments, sampling protocols and analytical determinations.
- Commonwealth, state and territory governments are currently working nationally to update the NEMP, which will be considered by Environment Ministers at their meeting in November, to ensure it remains current and scientifically robust.

Cleared as complete and accurate: 30/10/2018  
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## ANNUAL REPORT HEARING BRIEF

- Issues with PFAS widely reported in other jurisdictions have involved direct contamination of drinking water and/or food supplies.
- Such issues are improbable in the ACT because of the remote catchments used for town water supply and the insignificant volume of food production in the ACT.
- There are four known affected sites for PFAS in the ACT: Canberra Airport, the former Charnwood Fire Station, the former Belconnen Fire Station and Training Centre and the West Belconnen Resource Management Centre (landfill).
- In recent years the ACT EPA, in conjunction with the National Capital Authority and Icon Water, undertook sampling across ACT waterways to determine background levels of PFAS. The water sampling results did not detect PFAS in ACT waterways.
- The EPA and the Environment, Planning and Sustainable Development Directorate have developed a sampling plan that should quantify (occurrence and concentration) of PFAS across the ACT. Sampling will involve existing government water monitoring sites as well as, landfill, industrial, and sewage treatment sites. The sampling program will follow the methods outlined in the NEMP and is expected to begin by November 2018.
- The EPA is changing landfill and sewage treatment plant licenses to incorporate sampling for PFAS's in the standard monitoring programs to determine if discharges or inflows of PFAS are occurring at the facilities.
- An assessment is also being undertaken by the ACT Government to determine what further investigations may be required of ACT sites, in accordance with the NEMP.

### Key Information

#### Charnwood (former Fire Station) site

- PFAS levels at the Charnwood site are below criteria for its proposed use as a childcare centre and the site is subject to the implementation of an EPA approved Operational Management Plan and a Landscape Plan.

#### Belconnen (former Fire Station and Training Centre)

- The former Belconnen Fire Station and Training Centre is on the Register of Contaminated Sites as it is subject to a formal EPA required environmental audit to enable its redevelopment.

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# ANNUAL REPORT HEARING BRIEF

## Remaining ESA Fire Station Sites

- ESA has undertaken a risk assessment to prioritise the testing of remaining fire station sites and further testing will be done at the higher priority locations in the near future.

## West Belconnen Resource Management Centre

- There will be further sampling undertaken at the West Belconnen Resource Management Centre as part of the EPA required environmental audit that is being undertaken for its redevelopment, consistent with NEMP.

## Canberra Airport

- Canberra Airport is on Commonwealth land and is therefore regulated by the Commonwealth Government and should be managed in accordance with the PFAS National Environment Management Plan.

## PFAS in Jervis Bay Territory

- The ACT Government is contracted by the Commonwealth Government to supply certain services to Jervis Bay Territory (JBT), including education, licences, justice services and environmental water testing.
- The Commonwealth Department of Defence is leading the PFAS investigation in JBT, centred on the Jervis Bay Range Facility. The ACT Government is a member of Defence’s Project Control Group and provides advice and support where required.

## Potential PFAS contaminated sites in the ACT

- AFFF was specifically used to suppress flammable liquid fires and was used in training exercises. There are a number of other facilities in the ACT that are likely to have stored or used AFFF and thus have the potential for PFAS contamination.
- In addition, landfills and waste water/sewerage treatment plants are potential sources of PFAS contamination from household, commercial and industrial wastes and discharges.
- The ACT Government is unable to progress assessment or remediation at Commonwealth sites because the Commonwealth is not bound by ACT legislation.
- Potential PFAS contaminated sites in the ACT are listed in Table 1 below.

**Table 1: Potential PFAS contaminated sites in the ACT**

Facility	Location	PFAS Contamination
<b>Commonwealth Land</b>		
HMAS Harman	Woods Lane, Jerrabomberra, ACT	Potential
Duntroon Royal Military College	Staff Cadet Avenue, Campbell, ACT	Potential
Canberra Airport	Pialligo Avenue, ACT	<b>Confirmed</b>
Majura Firing range	Malcolm Vale Road, Pialligo, ACT	Potential
Australian Federal Police Majura	1 Tambreet St, Majura, ACT	Potential
Canberra Deep Space Discovery Centre	Discovery Drive, Paddys River, ACT	Potential
Lawson Naval Base	Baldwin Drive	Potential
AFP Weston Creek	2 Unwin Street Weston, ACT	Potential

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## ANNUAL REPORT HEARING BRIEF

<b>Territory Land</b>		
Charnwood Fire Station (former)	35 Lhotsky St, Charnwood, ACT	<b>Confirmed</b>
Belconnen Fire Station & Training Centre (former)	41 Rae St, Belconnen, ACT	<b>Confirmed</b>
Forrest Fire Station (former)	Empire Circuit, Forrest	Potential
Fyshwick Fire Station	1 Dalby St, Fyshwick ACT	Potential
Gungahlin Fire Station	Anthony Rolfe Ave, Gungahlin ACT	Potential
Ainslie Fire Station	36 Wakefield Ave, Ainslie, ACT	Potential
Chisholm Fire Station	6 Benham Street, Chisholm	Potential
Phillip Fire Station	Hindmarsh Dr & Botany St, Phillip ACT	Potential
Kambah Fire Station	500 Sulwood Dr, Kambah ACT	Potential
Greenway Ambulance Station (former Greenway Fire Station)	201 Scollay St, Greenway ACT	Potential
Mugga Lane Resource Recovery Facility	499 Mugga Lane, Jerrabomberra, ACT	Potential
West Belconnen Resource Management Centre	181 Parkwood Rd, MacGregor, ACT	<b>Confirmed</b>
Rail Depot Kingston	Cunningham Street, Kingston, ACT	Potential
Weston Creek Sewerage Treatment Works	Brackenreg Road, Weston ACT	Potential
Lower Molonglo Waste Water Treatment Works	446 Stockdill Drive, Holt ACT	Potential
Oaks Estate Sewerage Treatment Works	Cnr Nimrod Road & Mountain Road, Oaks Estate, ACT	Potential
Kingston Foreshore	11 Wentworth Avenue, Kingston ACT	Potential
Fuel Depots (Fyshwick/Oaks Estate)	16 Ipswich St & 13-17 Barrier St, Fyshwick, ACT and 22 Railway Street Oaks Estate, ACT	Potential

### Background Information

- PFAS contamination in the ACT is likely to be limited due to the lack of significant industrial activity and Defence establishments associated with fire training activities which have resulted in the majority of significant contamination identified to date nationally.
- The most significant use of fire fighting foams in the ACT was associated with the fire training facilities operated by Air Services (Commonwealth) at the Canberra Airport. The Airport is regulated by the Commonwealth Department of Infrastructure and Regional Development.
- The contamination of soil and groundwater at the airport is reportedly contained within the site and has not migrated off site into Territory land.
- The EPA is in liaison with Air Services and Canberra Airport regarding the assessment of the contamination at the airport site.

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FAQs  
PFAS – Pialligo

Minister: Various  
Date: 3 December 2018

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**SUBJECT:** PFAS - Pialligo  
**ISSUE:** Positive detections in Pialligo area

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### Key Questions and Answers:

#### What is the situation?

As part of a proactive testing program by the ACT Environment Protection Authority (in accordance with the *PFAS National Environment Management Plan 2018*) in areas that may be impacted by PFAS (Per- and poly-fluoroalkyl substances), detections above national standards have been identified in the Pialligo area: in six groundwater bores, Pialligo Brook and Kallaroo Road stormwater drainage lines.

It has also been detected in a groundwater bore at Canberra Concrete Recycling which is on Defence/Commonwealth land. The water is used for dust suppression. **(Note the business has yet to be advised so this should not go public at this stage.)**

The Canberra community is advised that based on the available information there are no public health concerns arising from these detections and no **known** reasons to be concerned about the animals which reside there. Eating any produce from Pialligo as part of a broad-based diet is unlikely to affect a person's overall exposure to PFAS.

#### What is PFAS?

PFAS are man-made chemicals that have been used in industry and consumer products worldwide since the 1950s.

They have been used in some firefighting foams, non-stick cookware, stain-resistant fabrics, some cosmetics, and products that resist grease, water, and oil.

The release of PFAS into the environment has become a concern because these chemicals do not break down easily by any natural process, so they can persist in humans, animals and the environment.

Governments across Australia are recommending that people reduce their exposure to PFAS wherever possible, as a precaution, while further research on the potential human health effects continues.

#### Are there any potential health risks from PFAS?

There is no conclusive evidence that PFAS causes any specific illness in people, pets or livestock.

Most people in the community will have consumed detectable levels of PFAS through food and water throughout their lives, but health advice is based on the level of PFAS a person can consume on a regular basis over a lifetime without any significant risk to health.

Based on current understanding, exposure to water used for washing (e.g. through splashing) presents a negligible risk to human or animal health.

Due to the low level of risk to human health, expert advice currently does not advise any specific biochemical or disease screening for groups exposed to PFAS outside of specific research studies.

### **Are there any environmental risks from PFAS?**

The release of PFAS into the environment is an emerging concern globally because these chemicals are highly persistent, bio-accumulate and can move long distances in the environment.

Further assessments will be undertaken as part of the broader study to understand the extent and level of PFAS in the area and any risk to the environment.

### **Why did testing take place in Pialligo?**

Pialligo Brook and two bores were tested as part of a proactive schedule the ACT committed to as part of the *PFAS National Environment Management Plan* (NEMP). Canberra's airport was already known as one of five sites affected by PFAS in the ACT, so testing in this area was a priority.

### **What has been tested in Pialligo and what were the results?**

After detecting PFAS in two groundwater bores and surface water at Pialligo Brook, additional testing was undertaken in the area.

Eleven bores in Pialligo have been tested and PFAS found in six of them at concentrations above the recommended level for drinking water. The water in four of those bores also contained PFAS above the recommended level for recreational use, like swimming or filling pools.

Test results are still coming for one of the 11 bores.

None of the affected bore owners reported they are using their bore water for drinking.

Elevated levels of PFAS were also detected in the Pialligo Brook and Kallaroo Road stormwater drainage lines, which are not accessible to the public. PFAS was detected at very low levels, below the national standard levels, in Woodshed Creek and the Molonglo River.

The ACT's drinking water remains unaffected.

### **What were the bores tested for (i.e. other than PFAS)?**

The groundwater bores were tested for PFAS, metals and hydrocarbons. No hydrocarbons or metals were detected above recommended levels.

### **When were the results received?**

The first round of testing was conducted on 30 October 2018 and results were received on 6 November 2018. The second round of sampling was on 12 and 13 November 2018 and results were received on 21 November 2018.

**Is this the first time the bores were tested for PFAS?**

Yes.

**What is the water from the bores used for?**

The bores are primarily used for stock water and irrigations. They are not used for drinking water as mains water is supplied to Pialligo by Icon Water.

An expert environmental health consultant is currently developing a comprehensive understanding of water use around Pialligo, including meeting with each affected bore owner. Initial discussions with landholders who assisted with access to their bores for testing used their bore water for livestock watering and washing, paddock irrigation and other irrigation.

Governments across Australia are recommending people reduce their exposure to PFAS wherever possible, as a precaution, while further research on the potential human health effects continues.

**Were landowners advised the bores were being tested for PFAS?**

Yes.

**What waterways have been tested in the area for PFAS?**

Molongo River and Lake Burley Griffin were previously tested in 2016 and no PFAS were detected.

Retesting in November 2018, using updated techniques that can detect chemicals at extremely low concentrations, found very low levels (below national standard threshold levels) in Woodshed Creek and the Molonglo River.

The levels detected are below the environmental standards for ecosystem protection and are also below the drinking and recreational water standards.

Further testing to confirm the results will be undertaken as part of the broader study to understand the extent of PFAS contamination in the area.

The ACT's drinking water remains unaffected.

**Who may be affected locally?**

All affected bores are on private land, so the government is working with those landholders.

Pialligo is connected to domestic water supply and bore owners have advised they have not been drinking their bore water. As with all bore water, residents have been reminded to not drink it as a precautionary approach. They have also been informed not to use it for recreational purposes like filling swimming pools.

There are no other restrictions on the use of the bore water at this time but residents might choose to limit their use of this water for irrigation or watering their animals so as to minimise exposure due to the persistent nature of PFAS in the environment.

**Which businesses are affected?**

Some residential and some commercial properties have access to bore water containing PFAS in Pialligo, but none are using their bore water in a way that presents a health risk to themselves or the broader community based upon the initial water use survey results.

In the absence of any expected potential health risk to the broader community, the government is focused on working with landholders/businesses in the area on the use of their bore water going forward.

### **What are the next steps the ACT Government is taking?**

The government has engaged an expert environmental health consultant, GHD, to work with landholders and provide advice on the use of their bore water.

A meeting is also taking place with the Pialligo Residents Association on Tuesday 4 December 2018.

Further investigation into the scale of contamination across potentially impacted land in the Pialligo area will be undertaken, as well as investigation into the source of the PFAS. The investigation will also set out the management options for PFAS at Pialligo.

The government will continue providing information to the Pialligo community, the broader community and the Commonwealth government as we continue a schedule of testing around the ACT, in accordance with the *PFAS National Environment Management Plan*.

PFAS are quite mobile in the environment and persist for long periods. The expert environmental health consultant engaged to assess the extent of the impacts at Pialligo will also provide advice on any required monitoring to determine the levels of PFAS throughout the environment.

The government continues to monitor the latest PFAS research and participate in the review of the *PFAS National Environment Management Plan* which guides management of PFAS nationally.

The government will continue sampling for PFAS throughout the ACT during the next two years as part of the ACT PFAS Action Plan.

### **What is the potential extent of contamination at Pialligo?**

While the PFAS levels found in some samples around Pialligo are above national standards, they are in the order of 20 times lower than in other known contaminated sites like Williamtown, NSW.

Importantly, the groundwater in Pialligo is not used by humans for drinking water. This means it presents a low risk of exposure to humans, as drinking water represents the primary route of potential exposure to PFAS.

Discussions with landholders/businesses and testing will continue to enhance our understanding of the extent and level of PFAS in Pialligo.

### **Is the PFAS contained?**

PFAS are very stable compounds that are quite mobile in the environment.

Existing contamination is already known at Canberra's airport from historic fire training activities.

Firefighting foam containing PFAS, one of the main sources of PFAS contamination, is no longer used in the ACT so there is a low risk of any new contamination.

Further environmental testing is underway to confirm the extent of PFAS on and near the airport, while routine testing for PFAS continues across the ACT.

The Commonwealth regulates any PFAS found on the airport land.

**How long is PFAS expected to remain detectable?**

PFAS are very stable compounds and do not break down easily in the environment (i.e. they persist in the environment for a long time).

**Where is the contamination coming from?**

This is yet to be fully determined. Further testing will identify the source of the PFAS.

**How long is it likely to have been in the water? Could it have been at higher concentrations in the past?**

This is not known at this stage but at the current low levels there is no immediate health risk. The expert consultant will look further into these aspects.

**Is this related to the airport?**

It is known that firefighting foam concentrates containing PFAS have been used at airports generally and that includes Canberra's airport.

Pialligo was identified as a site for testing given its proximity to Canberra's airport, which was already known to be affected by PFAS.

Environmental regulation of Federally-leased airports including Canberra Airport is the responsibility of the Commonwealth Department of Infrastructure, Regional Development and Cities.

**How fast does it travel from the contamination site and will it get worse before it gets better?**

This will be assessed as part of the environment study taking place at the moment.

**How do the levels of contamination identified at Pialligo compare with other sites around Australia?**

Guidance on the health standards for PFAS (as detailed in the *PFAS National Environment Management Plan 2018*) in drinking and recreational water are conservative and based on the level of PFAS a person can consume on a regular basis over a lifetime without any significant risk to health.

The levels of PFAS detected at Pialligo are at the low end of the range compared to other locations such as Williamstown, NSW and Katherine, NT that have been affected by PFAS.

Importantly, the groundwater in Pialligo is not used by humans for drinking water and therefore presents a low risk of exposure.

**Will the ACT Government provide compensation or financial assistance to affected businesses and landowners?**

We are supporting businesses and customers to understand what it means to have PFAS in bore water and brook water around Pialligo, and how to minimise their exposure.

We're focused on completing a comprehensive assessment of the extent and cause of PFAS in Pialligo.

There's no conclusive evidence PFAS causes any specific illness in people, pets or livestock.

**Does this contamination have any impact on the ACT's drinking water catchment?**

No.

**What testing occurs around drinking water?**

The drinking water Icon Water supplies to Canberra and Queanbeyan is safe. Icon Water works closely with the ACT Government and stakeholders to protect the quality of water supplies in the catchments, which includes advice on the types of activities and land-use in those catchments that can potentially impact water supplies.

Icon Water has participated with the ACT Government in specific studies of PFAS and PFOS (perfluorooctane, the PFAS compound most commonly encountered in environmental samples) which has confirmed drinking water catchments are safe.

Testing of the water supply occurs for a range of chemical and biological parameters based on licencing requirements, the Australian Drinking Water Guidelines and our hazard assessment system. Routine testing for PFAS compounds is outside current requirements for drinking water.

Management of PFAS is being coordinated at a national level, and Icon Water continues to work with the ACT Government and follow authorised advice in regards to any future management requirements.

**How are livestock exposed to PFAS?**

Livestock, like people, can potentially be exposed to PFAS through the things they eat and drink.

Livestock can potentially absorb PFAS through contaminated pasture, ground water, surface water or soil, however there is no known evidence that PFAS has affected the health or productivity of grazing livestock in Australia.

Exposure to PFAS mainly occurs via ingestion. The risk associated with absorption through the skin is extremely low in comparison. Activities such as washing animals therefore do not pose a significant risk.

The exposure of livestock to PFAS from eating lucerne or grass that has been irrigated with water containing PFAS, or incidentally consuming contaminated soil, would be minimal in comparison to consuming contaminated drinking water.

Animal owners in areas with elevated levels of PFAS may choose to take steps to minimise their animals' exposure. PFAS accumulate over time so the less exposure an animal has, the less PFAS it will accumulate.

The key way to reduce your animals' exposure to PFAS is to provide drinking water that is not impacted with PFAS (i.e. by providing mains water). All properties in Pialligo are connected to domestic water supply.

If your animal is not well you should contact your veterinarian. At this time testing animal blood or tissue for PFAS is not recommended as it is unclear if, how or at what levels the chemicals affect animals.

There are no Australian or international restrictions on the production, movement or sale of animals or animal products from areas affected by PFAS.

### **Does PFAS affect the sale of livestock products such as meat and eggs?**

We have not found any chicken owners in Pialligo who have reported raising their chickens using bore water containing PFAS.

There are currently no restrictions on domestic or international trade in agricultural products in relation to PFAS.

Chickens that consume PFAS can pass on some PFAS in the eggs they lay. The amount depends on how much PFAS they consume.

The PFAS concentrations in eggs will decrease over time when exposure of backyard chickens to water, soil and feed containing detectable PFAS can be prevented.

### **Should water from the bores in Pialligo or Pialligo Brook be used for stock/crop watering?**

PFAS are emerging contaminants and there is a lot we don't know about how these chemicals affect animals and the impacts they have.

The ACT Chief Veterinarian advises there is no known evidence of PFAS affecting the health or production of grazing livestock in Australia.

There is also no reason to be concerned about using your water supply for washing livestock and on pasture – including for the making of hay and silage, unless you are advised by your relevant authority not to do so.

### **What about pets? Can PFAS affect domestic animals?**

While there is little information on the effect of PFAS on the health of pets, it is unlikely to cause harmful effects.

Animals which reside temporarily in Pialligo and drink PFAS-contaminated bore water for a short period are very unlikely to absorb sufficient PFAS to increase their lifetime exposure to these chemicals.

When animals have an alternative water supply which is not impacted by PFAS, levels of PFAS in their body will gradually drop at a rate which depends on an animal's species age, sex and reproductive status.

If farmers/pet owners are concerned regarding the potential effects of PFAS contamination on animals they should consider watering animals and providing their drinking water from the mains supply.

At this time testing animal blood or tissue for PFAS levels in animals is not recommended as it is unclear if, how or at what levels the chemicals can affect animals. If your animal is not well you should contact your veterinarian.

For more information about PFAS regarding animals refer to:

[NSW Department of Primary Industries PFAS contamination and animal health](#) Factsheet.

### **What should Canberrans do if they have bought products from Pialligo businesses, such as edible goods or plants?**

Please continue to support your local businesses at Pialligo as usual as any potential impact to produce grown at Pialligo is not anticipated to result in significant exposure to individuals purchasing their products.

Current PFAS detections in some private groundwater bores in Pialligo are not expected to pose any health risk to the bore owners, other Pialligo residents and the broader Canberra community.

Nursery plants irrigated with bore water containing PFAS are not anticipated to pose any risk to anyone eating a broad-based diet.

While specific testing of crops and animal produce in Pialligo has not yet been conducted, discussions with landholders have confirmed very few animals and plants have been watered from bores affected by PFAS.

Previous studies across Australia and internationally have indicated the potential for PFAS uptake in plants is limited.

### **Has contamination been detected at any other sites in the ACT?**

PFAS has been detected at six other sites around Canberra associated with landfilling and fire training activities.

Belconnen Fire Station & Training Centre (former)
Charnwood Fire Station (former)
West Belconnen Resource Management Centre
Mugga Lane Resource Recovery Facility
West Belconnen Sewerage Treatment Plant (former) (Jarramalee off-set)
Canberra Concrete Recycling* (They are not informed yet)

### **Where is the ACT Government testing next?**

A high level conceptual model of PFAS sources in the ACT indicates there will be more sites with some level of PFAS contamination. Sites have been listed and given a preliminary ranking (probability and extent) for PFAS. Further analysis of the sites will refine the ranking which will also have an effect on the environmental sampling plan.

The priority sites are listed below:

<b>Facility</b>
<b>Territory Land</b>
Forrest Fire Station (former)
Ainslie Fire Station
Phillip Fire Station
Fyshwick Fire Station
Kambah Fire Station
Chisholm Fire Station
Greenway Ambulance Station (former Greenway Fire Station)
Gungahlin Fire Station
Weston Creek Sewerage Treatment Works
Oaks Estate Queanbeyan Sewerage Treatment Works
Lower Molonglo Waste Water Treatment Works
Kingston Foreshore
Rail Depot Kingston
Fuel Depots (Fyshwick/Oaks Estate)
<b>Commonwealth Land</b>
AFP Weston Creek
Lawson Naval Base
Canberra Deep Space Discovery Centre
Duntroon Royal Military College
Majura Firing range
HMAS Harman
Australian Federal Police, Majura

**Is there national guidance and agreement on managing PFAS contaminated sites?**

The Commonwealth, states and territories have developed the *2018 Intergovernmental Agreement on a National Framework for Responding to PFAS Contamination*, which provides the protocols for governments to manage PFAS contaminated sites. The IGA is supported by the *2018 PFAS National Environment Management Plan*, which provides guidance on the assessment and management of PFAS contaminated sites.

**Where can Canberrans get more information?**

[www.act.gov.au/PFAS](http://www.act.gov.au/PFAS) **once this is live** PFAS IGA and PFAS NEMP links to be added.

or

Access Canberra **once this is updated**

[https://www.accesscanberra.act.gov.au/app/answers/detail/a\\_id/4222/](https://www.accesscanberra.act.gov.au/app/answers/detail/a_id/4222/)

Access Canberra on 13 22 81.

The government is already in direct contact with affected landowners/businesses. GHD has distributed an 1800 number – 1800 066 243 – to these people. They also have an email address – [contact@ghd.com](mailto:contact@ghd.com) to send any questions.

**Action officer:** Geoff Virtue (x50312)

**Approvals:** Geoffrey Rutledge, Narelle Sargent, Daniel Walters, Dr Wendy Townsend, Kerryn Coleman, Vanessa Johnston, Dominic Lane and David Clapham

**Date:** 30 November 2018

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DRAFT

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**From:** [REDACTED]@lendlease.com>  
**Sent:** Wednesday, 21 April 2021 11:30 AM  
**To:** Contaminated Sites  
**Subject:** RE: [EXT]:RE: In-situ Categorisation Report - Block 2249 Jerrabomberra  
**Attachments:** JC0720 PB2249 Jerrabomberra SCR#02 Issue.pdf; Douglas Partners DSI.pdf

**CAUTION:** This email originated from outside of the ACT Government. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi Jianmin.

The large quantity of material generated across concurrent projects on the Base prevents re-use. Agon Environmental have updated their attached report to comment on this.

The Douglas Site Investigation is also attached for your information.

Regards,

[REDACTED]



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**From:** Zhang, Jianmin **On Behalf Of** Contaminated Sites  
**Sent:** Tuesday, 20 April 2021 10:50 AM  
**To:** [REDACTED]  
**Subject:** [EXT]:RE: In-situ Categorisation Report - Block 2249 Jerrabomberra

**OFFICIAL**

Hi [REDACTED]

The Office of the Environment Protection Authority (the OEPA) has reviewed the report titled “In-situ Categorisation Report – REV#01 Reuse Request – Block 2249 Jerrabomberra, ACT” dated 15 April 2021 by Agon Environmental Pty Ltd and provides the following comments:

- In accordance with [ACT EPA Information Sheet 4](#), the EPA encourages effective waste management by promoting onsite reuse, where appropriate, as the preferred option for dealing with excess soil. As Block 2249 Jerrabomberra is a large Defence site and has the potential to reuse the material onsite, please include additional information in the report as to why the material cannot be reused on-site.
- EPA records indicate the OEPA has not reviewed the Douglas (2020) Report on Detailed Site Investigation for Contamination. Project Roger, Part Rural Block 2249 Jerrabomberra. To facilitate the review process, please provide a copy of the Douglas report to the OEPA.

Should you have any questions regarding the above comments, please feel free to contact me.

Regards  
Jianmin

**Jianmin Zhang | Environment Protection Officer, Environmental Quality  
Office of the Environment Protection Authority**

**Access Canberra | Chief Minister Treasury and Economic Development Directorate | ACT**

Phone: 02 6207 2157 | Email: [jianmin.zhang@act.gov.au](mailto:jianmin.zhang@act.gov.au)

480 Northbourne Avenue, Dickson | GPO Box 158 Canberra ACT 2601 | [www.act.gov.au/accessCBR](http://www.act.gov.au/accessCBR)



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**From:** [REDACTED]@lendlease.com>  
**Sent:** Thursday, 15 April 2021 2:51 PM  
**To:** Contaminated Sites <[ContaminatedSites@act.gov.au](mailto:ContaminatedSites@act.gov.au)>  
**Subject:** In-situ Categorisation Report - Block 2249 Jerrabomberra

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*Contaminated Sites,*

*See attached REV#01 of Agons report summarising the assessment of shallow in-situ Fill (typically*

*Please let me know if the OEPA has any comment on the report prepared by Agon.*

*Thanks,*



**lendlease**

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**From:** [REDACTED]@veolia.com>  
**Sent:** Friday, 1 April 2022 5:39 PM  
**To:** Contaminated Sites  
**Cc:** [REDACTED]  
**Subject:** Offsite beneficial reuse application  
**Attachments:** SP02- 2022-03-31\_MLB22R137887\_Soil\_Class\_Letter\_FINAL\_rev1.pdf

**CAUTION:** This email originated from outside of the ACT Government. Do not click links or open attachments unless you recognise the sender and know the content is safe.

HI ACT EPA,

I would like to apply for the material at our site to be classified as Beneficial reuse within the ACT.

The attached soil classification letter contains all aspects requested in REQUIREMENTS FOR THE REUSE AND DISPOSAL OF CONTAMINATED SOIL IN THE ACT for an assessment report.

within the attached letter are the following:

- acceptance letter
- tabulated analytical results and lab report with reuse assessment criteria
- sample methodology and field notes
- sample frequency inline with IWRG 702
- all sampling data from both sampling events

We are seeking ACT EPA review and approval of this material as offsite beneficial reuse within the ACT.

Please contact me should you require any additional information or want to discuss further.

Kind regards

[REDACTED]  
**VEOLIA AUSTRALIA AND NEW ZEALAND**

[REDACTED]  
[www.veolia.com/anz](http://www.veolia.com/anz)