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Details of Filing

Document Lodged:	Statement of Claim - Form 17 - Rule 8.06(1)(a)
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Important Information

As required by the Court's Rules, this Notice has been inserted as the first page of the document which has been accepted for electronic filing. It is now taken to be part of that document for the purposes of the proceeding in the Court and contains important information for all parties to that proceeding. It must be included in the document served on each of those parties.

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Amended Statement of claim

Amended on 26 April 2019 and filed pursuant to an order made on 23 April 2019

No. 1388 of 2018

Federal Court of Australia

District Registry: New South Wales

Division: General

KIRSTY JANE BARTLETT and ANOR

Applicants

THE COMMONWEALTH OF AUSTRALIA

Respondent

CONTENTS

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A PRELIMINARY

A.1 The Applicants and the Group Members

1. This proceeding is commenced as a representative proceeding pursuant to Part IVA of the *Federal Court of Australia Act 1976* (Cth) by the Applicants on their own behalf and on behalf of other persons who or which:

   (a) as at 23 November 2016 (**Relevant Date**):

      (i) ~~owned land~~ were the registered owners of a fee simple interest in a lot (within the meaning of the *Land Titles Act 2000* (NT) located in whole or in part within the area delineated by the solid purple line on the map which is Annexure A to this Statement of Claim (the **Relevant Area**); or

      (ii) operated a business situated on land located in whole or in part within the Relevant Area; and

   (b) have suffered loss or damage by or resulting from the conduct of the Respondent pleaded in this Statement of Claim,

   (**Group Members**).

2. At all material times since 9 July 2003, the Applicants have owned land in the Relevant Area, namely the land at 245 Collins Road, Uralla in the Northern Territory (**the Applicants' Land**).

PARTICULARS

(i) The Applicants are the owners as joint tenants of the land known as 245 Collins Road, Uralla in the Northern Territory (being N.T. Portion 2756 from plan LTO87/049A).

3. As at the commencement of this proceeding, there were more than seven Group Members.

A.2 The Respondent

4. The Respondent (**Commonwealth**) is and at all material times was:

   (a) a body politic constituted by the *Constitution of the Commonwealth of Australia*; and

(b) capable of being sued by reason of s 56 of the *Judiciary Act 1903* (Cth).

B THE TINDAL BASE AND SURROUNDS

B.1 The Tindal Base

5. Since about 1987, the Commonwealth has continuously owned and occupied an area of land approximately 122 square kilometres in size and approximately 13 kilometres south-east of Katherine in the Northern Territory known as RAAF Base Tindal (the **Tindal Base**).

PARTICULARS

*(i) Coffey Services Australia Pty Ltd, Department of Defence: RAAF Base Tindal – Detailed Site Investigation Report (12 February 2018) (**Coffey February 2018 Report**) at pp 1 and 7.*

*(ii) Coffey Services Australia Pty Ltd, Department of Defence: RAAF Base Tindal – Interim Human Health Risk Assessment (22 December 2017) (**Coffey December 2017 IHHRA**) at p 9.*

(iii) From time to time the Commonwealth has acquired neighbouring properties which have become incorporated into the land occupied by the Tindal Base.

6. Since about 1990, the Tindal Base has also shared parts of its facilities (being runways, taxiways, and aircraft maintenance facilities) with the Katherine Tindal Civilian Airport.

PARTICULARS

(i) Coffey February 2018 Report at p 7.

(ii) Coffey December 2017 IHHRA at p 9.

7. At all material times, neighbouring land use in the region surrounding the Tindal Base was and is:

(a) in the adjacent north-west quarter, residential and rural allotments in the suburbs of Katherine, Katherine East, Katherine South and Uralla (forming the **Municipality of Katherine**), and comprising residential, rural, industrial, and business/commercial zoned areas; and

(b) in the adjacent north-east, south-east, and south-west quarters, rural allotments used for a range of pastoral, agricultural, and residential purposes.

PARTICULARS

(i) Coffey December 2017 IHHRA at pp vi to ix.

(ii) Coffey February 2018 Report at p 6.

(iii) Northern Territory Planning Scheme, Katherine Area Plan, 1 February 2018.

B.2 The natural features of the Tindal Base and surrounding area

B.2.1 Climate

8. At all material times, the Tindal Base and the Relevant Area were situated in a sub-tropical climate with distinct wet and dry seasons, the wet season being affected by tropical monsoon and tropical cyclone conditions leading to the Katherine River being prone to flooding during that time.

PARTICULARS

Coffey February 2018 Report at p 24.

B.2.2 Topography

9. At all material times, the Tindal Base was relatively flat, sloping gently towards the Katherine River and Tindal Creek in a south-west orientation with some small hills and karstic limestone outcropping, and with elevations ranging from approximately 130 mAHD to 140 mAHD.

PARTICULARS

(i) Coffey February 2018 Report at p 24.

(ii) Coffey December 2017 IHHRA at p 11.

*(iii) Coffey Services Australia Pty Ltd, Department of Defence: RAAF Base Tindal – Human Health Risk Assessment (18 June 2018) (**Coffey June 2018 HHRA**) at pp 15 and 16.*

10. At all material times, the outcrops of karstic limestone on the Tindal Base included pinnacles, sinkholes, fissures, potholes and dissolution features that allowed water to flow through the limestone.

PARTICULARS

(i) *Coffey June 2018 HHRA at p 16.*

(ii) *Coffey February 2018 Report at p 31.*

(iii) *D. Karp, Resource Assessment Branch, Department of Infrastructure, Planning and Environment, "Land Degradation Associated with Sinkhole Development in the Katherine Region" (Technical Report No 11/2002) (February 2002) at p 16.*

11. At all material times, by reason of the matters pleaded in paragraphs 9 and 10, surface water on and around the Tindal Base (including rain water, floodwaters, or overland flow):

(a) generally tends to pool, pond and percolate or permeate into the soil after wet weather or inundation for lengthy periods; and

(b) naturally moves into Tindal Creek, with such natural flow being intersected by road and other developments in areas which direct the water and also permit natural flow via culverts, channels, and other such pathways.

B.2.3 Soils

12. At all material times, the soil on the Tindal Base and in the Relevant Area has predominantly comprised:

(a) Grey-Brown (Cracking) Clays;

(b) Red Earths (with various subgroups);

(c) Yellow Earths;

(d) Earthy Sands;

(e) Lateritic Podzols; and

(f) Lithosols,

each of which permit the passage of rainwater (and surface water) to the subsoil, groundwater and the cave system below the Relevant Area.

PARTICULARS

(i) *Department of Defence, RAAF Base Tindal Draft Environmental Impact Statement (November 1983) (**Tindal Base Environmental Impact Statement**) at 3-11 to 3-12.*

(ii) *Coffey June 2018 HHRA at p 15.*

13. At all material times, the cave systems below the Relevant Area extended from the north west to the south east, and permitted the rapid passage of water through the cave systems to the Katherine River.

PARTICULARS

(i) *Coffey February 2018 Report at p 31.*

(ii) *S.J. Tickell, Department of Natural Resources the Environment and the Arts Natural Resources Division, "Groundwater Resources of the Tindall Limestone" (Report 34/2005) (April 2005) at p 24.*

B.2.4 Hydrology

14. At all material times, Tindal Creek:

(a) was and is an ephemeral waterway with a catchment area of 173 km^2 fed by surface water from bushland and scrubland in upper portions, but becoming ground water fed in the wet season from Uralla through to the southern edge of Katherine;

(b) flowed through the Tindal Base, entering from the south-eastern boundary and flowing in a west and north-westerly direction through the Tindal Base and to the south of base infrastructure and collecting surface water runoff from open drains to the north, then exiting the Tindal Base at the north-western boundary next to the Stuart Highway; and

(c) upon exiting the Tindal Base, flowed to the north of Uralla and the Stuart Highway, crossing to the south of the highway at the western end of Uralla, then flowing to the south-west (south of Katherine East and Katherine) and joining Katherine River to the north of Katherine Tip.

PARTICULARS

Coffey February 2018 Report at pp 24-25.

15. At all material times, the Katherine River:

(a) consisted of an incised channel, generally between 200m to 300m wide and 20m deep, with a wide flat flood plain with heavy vegetation on the main channel;

(b) flowed through Katherine from the north-east to the south-west; and

(c) was prone to flooding during the wet season.

PARTICULARS

(i) *Coffey February 2018 Report at pp 24-25.*
(ii) *Coffey June 2018 HHRA at pp 14 and 15.*

16. At all material times, a number of springs discharged directly into and fed each of Tindal Creek and the Katherine River.

PARTICULARS

Coffey February 2018 Report at pp 24-25.

B.2.5 Hydrogeology

17. At all material times, the Tindal Base and the Relevant Area were situated within the Tindal Creek catchment area of the Daly Basin — a broad basin structure elongated in a north-west/south-east direction, approximately 70km wide by 350km long.

PARTICULARS

Coffey February 2018 Report at pp 26-27.

18. At all material times, the Tindal Base and the Relevant Area were underlain by the Tindal Limestone aquifer (the **Tindal Aquifer**).

PARTICULARS

Coffey February 2018 Report at pp 27-30 and appended figure 6.

19. At all material times, the Tindal Aquifer:

(a) was of karst origin comprised predominantly of medium to coarsely crystalline, styolitic limestone, and dolomitised limestone with minor siltstone interbeds;

(b) was up to 160m thick in and around the Municipality of Katherine, with folding near the Katherine River creating preferential groundwater pathways;

(c) discharged into the Katherine River;

(d) was formed of networks of interconnected fractures, solution cavities, and cave systems trending dominantly north-west to south-east, consequently enhancing groundwater flow to the Katherine River and discharging to springs in the area;

(e) flowed underground from the eastern and western side of the Katherine River in the direction of the River;

(f) was confined by the Oolloo and Jinduckin geological formations to the south of the Municipality of Katherine and south-west of the Tindal Base;

(g) was largely unconfined where it underlay the Tindal Base and the Relevant Area; and

(h) as a result of higher pressure in the confined areas compared to the unconfined areas, was characterised by limited interaction between the two areas.

PARTICULARS

*(i) Coffey Services Australia Pty Ltd, Department of Defence: RAAF Base Tindal – Detailed Site Investigation – Per- and Poly-fluoroalkyl substances Executive Summary (12 February 2018) (**Coffey February 2018 Executive Summary**) at pp iii-iv.*

(ii) Coffey February 2018 Report at pp 27-30.

(iii) Department of Land Resource Management, "Water Allocation Plan – Tindall Limestone Aquifer, Katherine 2016- 2019", 2016, p 4.

(iv) Department of Defence, RAAF Base Tindal – Updated Investigation Area Factsheet, March 2018, p 2.

B.2.6 Flooding

20. At all material times, by reason of the matters pleaded in paragraphs 9 to 19, the Tindal Base and the Relevant Area were prone to flooding and associated overland flow during the wet season.

PARTICULARS

(i) *Coffey February 2018 Report, pp 24-25.*

(ii) *Tindal Base Environmental Impact Statement at 3-19.*

(iii) *Coffey June 2018 HHRA at p 14.*

B.3 The artificial water-related features of the Tindal Base

21. In the course of its occupation and use of the Tindal Base, the Commonwealth constructed, developed, and/or upgraded a drainage system (the **Drainage System**) consisting of an extensive open and closed drainage network comprising concrete and earthen drains directed to two major formalised drainage channels that discharged the bulk of surface water run-off from the Tindal Base into Tindal Creek at a location upstream near the sewage irrigation paddock and a location downstream of the north-western end of the airstrip.

PARTICULARS

(i) Coffey February 2018 Report at pp 25 and 97.
(ii) Further particulars of the Drainage System and other drainage systems on the Tindal Base may be provided after discovery and inspection.

22. In the course of its occupation and use of the Tindal Base, the Commonwealth also installed a surface water drain directing surface water from the fire station located on the northern side of the runway (the **Fire Station**) to nearby wetlands located approximately 60 metres west of the Fire Station (the **Fire Station Drain**).

PARTICULARS

Coffey February 2018 Report at Appendix A p 12 (referring to AECOM (2009a) – Stage 2 (Part III) Environmental Investigation RAAF Base Tindal Katherine, NT).

23. From around 1993, in the course of its occupation and use of the Tindal Base, the Commonwealth also installed three staged evaporation ponds (and an open earth drain for excess fluids) (the **Evaporation Ponds**) to collect fluids discharged from a fire training area installed to the south of the runway, comprising a bunded and lined fire pit, cleared area, practice equipment, an open exercise ground, and a combustion area outside the lined fire pit (the **Fire Training Area**).

PARTICULARS

(i) *Coffey February 2018 Report at pp 12 and 17 to 18, and Appendix A pp 3 to 4 (referring to ERM (2005) Stage 1 Environmental Investigation RAAF Base Tindal, NT).*

(ii) *Coffey December 2017 IHHRA at p 16.*

(iii) *Further particulars may be provided after discovery and inspection.*

24. The Commonwealth, or its predecessors in title, caused or authorised a number of bores to be drilled on the Tindal Base to draw groundwater (including from the Tindal Aquifer), which was and continues to be used by the Commonwealth in the course of its occupation of the Tindal Base.

PARTICULARS

(i) *The best particulars the Applicants can provide of the bores which exist on the Tindal Base are contained in Annexure B:*

(ii) *The Commonwealth used bore water for irrigation, dust suppression and other construction purposes: Coffey June 2018 HHRA p 43.*

B.4 The foreseeable flow of water from the Tindal Base

25. At all material times, by reason of the matters pleaded in paragraphs 9 to 24, it was reasonably foreseeable that waters, liquids, and soluble materials discharged on Tindal Base would:

(a) permeate or percolate into the soil at the Tindal Base;

(b) be transmitted to the groundwater beneath the Tindal Base, including the Tindal Aquifer and mingle and flow with that groundwater (including in a general direction towards the Katherine River);

(c) mingle with other surface water on the Tindal Base (especially after periods of rain), and flow overland in a generally south-west direction, towards and into the surrounding water catchment areas outside the Tindal Base (including Tindal Creek) and:

(i) permeate or percolate into the soil over which the surface water overland flows occurred; and

(ii) be transmitted to the groundwater beneath the soil over which the surface water overland flows occurred, including the Tindal Aquifer; and

(d) be transmitted to the Katherine River.

C WATER USE AT KATHERINE AND THE RELEVANT AREA

C.1 Tindal Creek & the Katherine River

26. At all material times, Tindal Creek has been used by residents of the Municipality of Katherine and the Relevant Area for:

(a) fishing (including for bait and for food); and

(b) swimming,

(**Tindal Creek Usages**).

PARTICULARS

(i) *Coffey December 2017 IHHRA at pp 15 and 25-27.*

(ii) *Coffey June HHRA at pp 18 and 37.*

27. At all material times, the Katherine River has been accessed and used by residents of the Municipality of Katherine and the Relevant Area for:

(a) drinking;

(b) swimming;

(c) fishing (including for bait and for food);

(d) boating;

(e) domestic purposes (including bathing, showering, washing, and cleaning);

(f) irrigation purposes (including by both township and rural properties); and

(g) the Municipality of Katherine water supply (that water supply being predominantly pumped from the Katherine River),

(**Katherine River Usages**).

PARTICULARS

(i) Coffey December 2017 IHHRA at pp 15 and 25-27.

(ii) Department of Defence, RAAF Base Tindal – Katherine Town Water and Interim PFAS Water Treatment Plant Update (October 2017) at p 2.

(iii) Coffey June 2018 HHRA at pp 18 and 37.

C.2 Groundwater

28. At all material times, groundwater from the Tindal Aquifer has been used by residents of the Municipality of Katherine and the Relevant Area for:

(a) drinking;

(b) swimming (including in municipal, residential, and rural swimming pools filled using water from bores);

(c) domestic purposes (including bathing, showering, washing, and cleaning);

(d) irrigation purposes (including by both township and rural properties);

(e) watering of livestock; and

(f) the Municipality of Katherine water supply (that water supply being mixed with groundwater),

(**Groundwater Usages**)

PARTICULARS

(i) Coffey December 2017 IHHRA at pp 15, 30-34 and 25-27.

(ii) Coffey February 2018 Report at p 40-41.

(iii) Department of Defence, RAAF Base Tindal – Katherine Town Water and Interim PFAS Water Treatment Plant Update (October 2017) at p 2.

(iv) Coffey June 2018 HHRA at pp 18 and 42.

29. At all material times, many persons resident in the Municipality of Katherine and surrounding areas, including in the Relevant Area, had private bores on their land which drew water from the Tindal Aquifer (**Private Bores**) and engaged in the Groundwater Usages.

PARTICULARS

(i) Some Private Bores are registered, while some are unregistered.

(ii) The best particulars the Applicants can provide of the Private Bores in the Relevant Area are contained in the Coffey February 2018 Report at p 40-41 and Figure 5, and in Annexure C (which is a map and list of 321 registered bores, but which does not take into account unregistered bores).

(iii) There is a Private Bore on the First and Second Applicants' Land which is known as RN027754 and, as at the time of drilling on 13 June 1991, had the following properties:

A. drilled to a depth of 27m into broken limestone;

B. struck water at 19m;

C. had a standing water level of 12m;

D. supplied water at 4.5L/s; and

E. was described as being of "good" quality.

(iv) Some Group Members have Private Bores on their land. The identity of all those Group Members who have Private Bores will be particularised following opt out, the determination of the Applicants' claim and identified common issues at an initial trial and if and when it is necessary for a determination to be made of the individual claims of those Group Members.

(v) Coffey June 2018 HHRA at p 77.

C.3 The foreseeable usage of water emanating from the Tindal Base

30. At all material times, by reason of the matters pleaded in paragraphs 25 to 29 above, it was reasonably foreseeable that waters, liquids, and soluble materials discharged and/or allowed to escape the Tindal Base which were transmitted to Tindal Creek, the Tindal Aquifer, and the Katherine River would be used by residents of the Municipality of Katherine and the Relevant Area.

D THE COMMONWEALTH'S USE OF AFFF AT THE TINDAL BASE

D.1 Introduction

31. At all material times since the establishment of the Tindal Base, the Commonwealth has been responsible for conducting all of the activities conducted at the Tindal Base.

32. The Katherine Town Council operates the Katherine Tindal Civilian Airport within the Tindal Base.

PARTICULARS

(i) Joint use of the Tindal Base airfield and all civilian operations of the Katherine Regional Airport is managed under a Lease and Operating Agreement between the Commonwealth and the Katherine Town Council: Coffey, Environmental Impact Statement, Flying Operations of the F-35A Lightning II Volume 3: RAAF Base Tindal, April 2014, p 16-6.

(ii) The Katherine Town Council leases land from the Commonwealth for the civil terminal located west of the runway: Coffey, Environmental Impact Statement, Flying Operations of the F-35A Lightning II Volume 3: RAAF Base Tindal, April 2014, p 16-6.

(iii) The lease to the Katherine Town Council expires on 30 September 2027.

(iv) The shared air facilities included the runways, taxiways and air craft maintenance facilities: Coffey June 2018 HHRA at p 12.

D.2 The Commonwealth's use of AFFF

33. As part of the operation of the Tindal Base since or about the time of its establishment, the Commonwealth has regularly conducted fire drills, firefighting training, fire tests, mock emergency aircraft landing and accident drills, foam training, equipment testing (including the testing of nozzles, firefighting trucks, and fire suppression systems), firefighting, fire suppression, and like operations (both on and near Tindal Base) (**Training and Operation Activities**).

PARTICULARS

(i) Coffey February 2018 Report at pp 2, 8-9, 12-14, and 17-23.

(ii) Coffey February 2018 Executive Summary at vii to x.

(iii) Coffey December 2017 IHHRA at p 16.

(iv) Department of Defence, Katherine Community Update Issue 01 (July 2017) p 1.

(v) Further particulars may be provided after discovery and inspection.

34. At all material times in the period from in or about 1987 until a time unknown to the Applicants after about 2004, in the use and occupation of the Tindal Base for the purpose of the Training and Operation Activities, the Commonwealth:

(a) used an aqueous film forming foam fire-fighting product in a liquid form (**AFFF Concentrate**);

(b) mixed the AFFF Concentrate with water to create a working solution (at a concentration rate of 3% or 6%) (**AFFF Working Solution**); and

(c) aspirated the AFFF Working Solution into a foam via nozzles on firefighting trucks and other mechanisms (the aspirated foam being known as **AFFF**).

PARTICULARS

*(i) Department of Defence, RAAF Base Tindal: Environmental Management Plan, Environmental Contingency Plan (October 1987) (**Tindal Base Environmental Management Plan**) at pp 3-8 to 3-9, and Appendix F.*

*(ii) The AFFF Concentrate used was principally a product known as "Light Water™" (being manufactured by the Minnesota Mining and Manufacturing Company (now known as 3M Company) and/or its subsidiary 3M Australia Pty Ltd (**3M**).*

iii) At a time unknown to the Applicants in about 2004, the Commonwealth transitioned to using "Ansulite".

35. The Training and Operation Activities included:

(a) prior to 1993, those in and around an unlined fire pit, south of the sewerage farm; and

(b) from around 1993, those in and around the Fire Training Area.

PARTICULARS

(i) Coffey February 2018 Report at pp 12 and 17 to 18, and Appendix A pp 3 to 4 (referring to ERM (2005) Stage 1 Environmental Investigation RAAF Base Tindal, NT).

(ii) Coffey December 2017 IHHRA at p 16.

(iii) Further particulars may be provided after discovery and inspection.

36. Training and Operation Activities in and around the Fire Training Area:

(a) used AFFF Working Solution and AFFF;

(b) occurred on average twice a week;

(c) involved the spraying and flowing of AFFF Working Solution and AFFF both into the fire pit, the surrounding exercise ground, and areas around the Fire Training Area; and

(d) resulted in fluids containing AFFF Working Solution and AFFF being discharged into the Evaporation Ponds, which would discharge excess fluids into an open earth drain.

PARTICULARS

(i) Coffey February 2018 Report at pp 12 and 17 to 18, and Appendix A pp 3-4 (referring to ERM (2005) Stage 1 Environmental Investigation RAAF Base Tindal, NT).

(ii) Coffey December 2017 IHHRA at p 16.

(iii) Further particulars may be provided after discovery and inspection.

37. The Training and Operation Activities included those in and around the Fire Station.

PARTICULARS

(i) Coffey February 2018 Report at pp 12 and 19.

(ii) Coffey December 2017 IHHRA at p 16.

(iii) Further particulars may be provided after discovery and inspection.

38. Training and Operation Activities in and around the Fire Station:

(a) used AFFF Working Solution and AFFF;

(b) involved daily wet testing of fire hoses on crew changeover;

(c) involved weekly foam testing and additional foam testing each time a vehicle came back from servicing or repair;

(d) involved filling, testing, and cleaning of fire trucks two to three times per week; and

(e) resulted in approximately 104,000 litres of waste water containing residual AFFF Working Solution and AFFF being released on a yearly basis into a storm water drain and evaporation pond.

PARTICULARS

(i) Coffey February 2018 Report at pp 12 and 19, and Appendix A at pp 2 to 4 (referring to URS (2002) Fire Station Contamination

Investigation RAAF Base Tindal, NT, and ERM (2005) Stage 1 Environmental Investigation RAAF Base Tindal, NT).

(ii) Coffey December 2017 IHHRA at p 16.

(iii) Further particulars may be provided after discovery and inspection.

39. The Training and Operation Activities included those in and around the fuel farm located near 75 squadron in the east of Tindal Base (**Fuel Farm 1**) and the fuel farm located to the north of the runway and to the west of the ordinance loading areas on Link Dispersal Road (**Fuel Farm 2**).

PARTICULARS

(i) Coffey February 2018 Report at pp 10, 13, and 21 to 22.

(ii) Coffey December 2017 IHHRA at p 16.

(iii) Further particulars may be provided after discovery and inspection.

40. Each of Fuel Farm 1 and Fuel Farm 2 had a fire suppression system consisting of a ring main of water connected to the Tindal Base fire water supply, which was then connected to the Tindal Base sprinkler system via a fire truck which supplies AFFF Working Solution and AFFF.

PARTICULARS

(i) Coffey February 2018 Report at pp 13 and 21 to 22.

(iii) Further particulars may be provided after discovery and inspection.

41. Training and Operation Activities in and around Fuel Farm 1 and Fuel Farm 2 included the testing of the fire suppression system at those locations using AFFF Working Solution and AFFF.

42. As part of the operation of the Tindal Base since or about the time of its establishment, the Commonwealth has also regularly conducted operations in and around the Mechanical Equipment Operations Maintenance Section located at 17 Squadron in the north-west of the Tindal Base (the **Maintenance Section**).

PARTICULARS

(i) Coffey February 2018 Report at pp 12 and 20.

(ii) Coffey December 2017 IHHRA at p 16.

(iii) Further particulars may be provided after discovery and inspection.

43. Operations in and around the Maintenance Section included maintenance on vehicle and equipment containing AFFF Working Solution and AFFF (**Maintenance Activities**).

PARTICULARS

(i) Coffey February 2018 Report at pp 12 and 20.

(ii) Coffey December 2017 IHHRA at p 16.

(iii) Further particulars may be provided after discovery and inspection.

44. By reason of the matters pleaded in paragraphs 33 to 43 above, the Training and Operation Activities and the Maintenance Activities resulted in:

(a) the discharge to bare ground of a very substantial quantity of AFFF Working Solution and/or AFFF at the Tindal Base (such discharge and its residues being **Spent AFFF**); and/or

(b) the co-mingling of Spent AFFF with combustion by-products created during firefighting and fire-suppression (**Fire Run-Off)**, and the discharge of a very substantial quantity of such material to bare ground at the Tindal Base.

D.3 The Commonwealth's methods for disposal of Spent AFFF

45. At all material times:

(a) Spent AFFF; and/or

(b) Fire Run-Off co-mingled with Spent AFFF,

was generally directed by the Commonwealth towards bare ground, the Evaporation Ponds, the Drainage System, and the Fire Station Drain.

PARTICULARS

(i) Paragraphs 33 to 44 are repeated.

(ii) The Applicants do not, with their present state of knowledge, know the quantities of Spent AFFF and/or Fire Run-Off directed to bare ground and the earthen drains comprising the Drainage System.

(iii) Further particulars may be provided after discovery and inspection.

46. At all material times, to the extent that:

(a) AFFF discharged in the course of the Training and Operations Activities; and/or

(b) Fire Run-Off co-mingled with Spent AFFF,

was directed by the Commonwealth to the Evaporation Ponds, the Drainage System, the Fire Station Drain, they were ineffective to ensure that liquids contained in them did not leak into the soil below and around them.

D.4 Physical properties of AFFF and Spent AFFF

47. At all material times, AFFF Concentrate was soluble in water.

PARTICULARS

(i) AFFF Concentrate was a manufactured product and particular (ii) to paragraph 34 is repeated.

(ii) The fact that AFFF Concentrate was soluble was at all times intrinsic to its property as a concentrate.

48. At all material times AFFF Working Solution, AFFF, and Spent AFFF had the same properties as AFFF Concentrate (as pleaded in paragraph 47 above).

D.5 The foreseeable flow of Spent AFFF from the Tindal Base

49. At all material times, by reason of the matters pleaded in paragraphs 8 to 30 and 47 to 48 above, it was reasonably foreseeable that use of AFFF Working Solution and AFFF on the Tindal Base as pleaded in paragraphs 33 to 44 and/or 45 to 46 above would result in Spent AFFF and/or Fire Run-Off co-mingled with Spent AFFF:

(a) being transmitted to the groundwater beneath the Tindal Base, including the Tindal Aquifer and mingle and flow with that groundwater (including in a general direction towards the Katherine River), and being utilised by persons engaged in the Groundwater Usages;

(b) mingling with other surface water on the Tindal Base (especially after periods of rain), and flowing overland in a generally south-west direction, towards and into the surrounding water catchment areas outside the Tindal Base (including Tindal Creek) and:

(i) permeating or percolating into the soil over which the surface water overland flows occurred; and

(ii) being transmitted to the groundwater beneath the soil over which the surface water overland flows occurred, including the Tindal Aquifer;

and being extracted and utilised by persons engaged in the Groundwater Usages;

(c) mingling with other surface water on the Tindal Base (especially after periods of rain), and flowing overland in a generally south-west direction, towards and into

the surrounding water catchment areas outside the Tindal Base (including Tindal Creek) and then being utilised by persons engaged in the Tindal Creek Usages; and

(d) being transmitted to the Katherine River and then being utilised by persons engaged in the Katherine River Usages.

E THE TOXIC PROPERTIES OF SPENT AFFF

E.1 The potential for AFFF to harm humans and the environment

50. At all material times, AFFF Concentrate was a non-naturally occurring (unnatural) substance.

51. At all material times prior to a time unknown to the Applicants in or after about 2004, the AFFF Concentrate used by the Commonwealth at the Tindal Base contained, among other constituent ingredients, synthetic per- and poly-fluorinated compound chemical surfactants (**PFCs**), including:

(a) perfluoro-octane sulfonate (**PFOS**);

(b) perfluoro-octanoic acid (**PFOA**); and

(c) other PFCs, such as perfluoro-hexane sulfonate.

PARTICULARS

(i) the MSDS sheets for "Light Water™" disclosed that AFFF Concentrate contained various fluoroalkyl substances.

(ii) It was only in about 2004, that the Commonwealth implemented a policy to restrict use of AFFF containing PFOS/PFOA and introduce a training foam called "Ansul" (which the Commonwealth considered to contain no PFOS/PFOA) and a foam for operational purposes called "Ansulite" (which the Commonwealth considered to contain only trace levels of PFOS/PFOA): Coffey February 2018 Executive Summary at p 8.

52. PFCs, and in particular each of PFOS and PFOA (together **PFC Contaminants**), have the following properties:

(a) they are persistent in soil and water;

(b) they are mobile, and can migrate significant distances with little attenuation;

(c) they are bio-accumulative and persistent in the human body and in animals;

(d) they are bio-accumulative in plants;

(e) they bio-magnify in the food chain;

(f) they are readily absorbed by humans and animals, including by:

(i) drinking water containing the compounds;

(ii) consuming produce from land and/or water containing the compounds;

(iii) consuming meat from animals that have grazed on land and/or consumed water or produce grown therewith and/or thereon containing the compounds; and

(iv) inhalation, including inhalation of dust generated from surface soils containing the compounds and dermal contact, including dermal contact with impacted soil and groundwater containing the compounds; and

(g) they are toxic.

PARTICULARS

(i) URS 2010 Final Report at pp ix to xii and 120.

(ii) GHD Transfield Services RAAF Williamtown Stage 1 Conceptual Site model for AFFF contamination (March 2013) at p(i).

(iii) Coleville & McCarron (Environmental, Heritage and Risk Branch), "Environmental Issues Associated with Defence Use of Aqueous Film Forming Foam (AFFF)" (May 2013) at pp.3-4.

(iv) AECOM 2015 PFC Study, pp.1-2, 32-33 & Stage 2 Environmental Investigation – Human Health Risk Assessment, Army Aviation Centre Oakey, 1 September 2016, AECOM at p46.

(v) AECOM, Stage 2C Environmental Investigation – Preliminary Ecological Risk Assessment, Army Aviation Centre Oakey (November 2016) at p 77.

(vi) Australian Government, Foreign Affairs and Trade Committee, Submission by the Department of the Environment in relation to Part B: Inquiry into PFOS and PFOA contamination on other Commonwealth, state and territory sites in Australia where firefighting foams containing PFOS and PFOA were used (2016).

(vii) Coffey December 2017 IHHRA at p 17 and Appendix G.

(viii) Coffey February 2018 Executive Summary at p 3.

(ix) Coffey February 2018 Report at p 2.

(x) Coffey June 2018 HHRA at pp 4 and 21.

53. By reason of the matters pleaded in paragraphs 50 and/or 51 to 52, AFFF Concentrate was:

(a) potentially damaging to the environment; and/or

(b) potentially causative of adverse health effects in humans.

54. At all material times AFFF Working Solution, AFFF, and Spent AFFF had the same properties as AFFF Concentrate (as pleaded in paragraphs 50 and/or 51 to 52 and/or 53 above).

E.2 The foreseeable flow and transmission of a toxic substance

55. At all material times, by reason of the matters pleaded in paragraphs 8 to 30 and 47 to 48 and 53 to 54 above, it was reasonably foreseeable that the use of AFFF on the Tindal Base as pleaded in paragraphs 33 to 44 and/or 45 to 46 above would result in an unnatural soluble substance containing synthetic chemicals:

(a) permeating or percolating into the soil at the Tindal Base;

(b) being transmitted to the groundwater beneath the Tindal Base, including the Tindal Aquifer and mingling and flowing with that groundwater (including in a general direction towards the Katherine River);

(c) mingling with other surface water on the Tindal Base (especially after periods of rain), and flowing overland in a generally south-west direction, towards and into the surrounding water catchment areas outside the Tindal Base (including Tindal Creek) and:

(i) permeating or percolating into the soil over which the surface water overland flows occurred; and

(ii) being transmitted to the groundwater beneath the soil over which the surface water overland flows occurred, including the Tindal Aquifer; and

(d) being transmitted to the Katherine River.

F THE CONTAMINATION OF KATHERINE

F.1 The contamination of Tindal Creek and the Katherine River

56. PFCs and PFC Contaminants have been detected in Tindal Creek and the Katherine River.

PARTICULARS

(i) December 2017 IHHRA at pp vi and 17.

(ii) Coffey February 2018 Report at pp 118 to 119 and 131-132.

(iii) Department of Defence, PFAS Investigation & Management Program Community Information Session – RAAF Base Tindal, NT (4 December 2017) at second slide headed "Stage 2: DSI Summary".

(iv) Department of Defence, RAAF Base Tindal – Investigation Area: PFAS Investigation and Management Program at pp 2-3.

57. The contamination of Tindal Creek and Katherine River with PFCs and PFC Contaminants is the result of discharged AFFF Working Solution and AFFF on the Tindal Base resulting in Spent AFFF:

(a) permeating or percolating into the soil at the Tindal Base;

(b) being transmitted to the groundwater beneath the Tindal Base, including the Tindal Aquifer and mingling and flowing with that groundwater (including in a general direction towards the Katherine River);

(c) mingling with other surface water on the Tindal Base (especially after periods of rain), and flowing overland in a generally south-west direction, towards and into the surrounding water catchment areas outside the Tindal Base (including Tindal Creek) and:

(i) permeating or percolating into the soil over which the surface water overland flows occurred; and

(ii) being transmitted to the groundwater beneath the soil over which the surface water overland flows occurred, including the Tindal Aquifer; and

(d) being transmitted to the Katherine River.

PARTICULARS

(i) Coffey February 2018 Executive Summary at pp v to vi and xi.

(ii) Coffey February 2018 Report at p 15 and Appendix A at p 18 (referring to GHD (2012) Report for Stage Two (Part IV) Environmental Investigation RAAF Tindal NT).

*(iii) Coffey Services Australia Pty Ltd, Department of Defence: RAAF Base Tindal – Human Health Risk Assessment Executive Summary (18 June 2018) (**Coffey June 2018 HHRA Executive Summary**) at p ii.*

58. By reason of the matters pleaded in paragraph 56 and 57 above, the water in the Tindal Creek and Katherine River has become, and is likely to continue to remain, contaminated by, and a receptor of, PFC Contaminants originally emanating from the Tindal Base.

PARTICULARS

Coffey February 2018 Report at pp 118 and 119 and 131 to 133.

59. By reason of the matters pleaded in paragraphs 56 to 5858 above, water in Tindal Creek and the Katherine River have become, and will continue and remain, potentially hazardous and unfit for the Tindal Creek Usages (the **Tindal Creek Contamination**) and the Katherine River Usages (the **Katherine River Contamination**).

PARTICULARS

Coffey June 2018 HHRA at pp 137 and 138.

60. There is no practical or cost-effective way of remediating the Tindal Creek Contamination or the Katherine River Contamination.

F.2 The contamination of Katherine's Groundwater

61. A large and diffuse plume of PFCs and PFC Contaminants emanating from the Tindal Base has been identified in the Tindal Aquifer and under the Relevant Area (or part thereof) (the **Toxic Plume**).

PARTICULARS

(i) Coffey February 2018 Executive Summary at pp iv to v.

(ii) Coffey February 2018 Report at pp 113 to 117.

(iii) Coffey June 2018 HHRA at p 42.

62. The Toxic Plume is the result of discharged AFFF Working Solution and AFFF on the Tindal Base resulting in Spent AFFF:

(a) permeating or percolating into the soil at the Tindal Base;

(b) being transmitted to the groundwater beneath the Tindal Base, including the Tindal Aquifer and mingling and flowing with that groundwater (including in a general direction towards the Katherine River);

(c) mingling with other surface water on the Tindal Base (especially after periods of rain), and flowing overland in a generally south-west direction, towards and into the surrounding water catchment areas outside the Tindal Base (including Tindal Creek) and:

(i) permeating or percolating into the soil over which the surface water overland flows occurred; and

(ii) being transmitted to the groundwater beneath the soil over which the surface water overland flows occurred, including the Tindal Aquifer; and

(d) being transmitted to the Katherine River.

PARTICULARS

(i) Coffey February 2018 Executive Summary at pp v to vi and xi.

(ii) Coffey February 2018 Report at p 15 and Appendix A at p 18 (referring to GHD (2012) Report for Stage Two (Part IV) Environmental Investigation RAAF Tindal NT).

63. By reason of the matter pleaded in paragraphs 61 and 62, groundwater in the Tindal Aquifer and beneath the Relevant Area (including under land owned by the Applicants and many Group Members) has become, and is likely to continue to remain, contaminated by, and a receptor of, PFC Contaminants originally emanating from the Tindal Base.

PARTICULARS

(i) The PFC Contaminant concentrations measured in groundwater (predominantly PFOS and PFHxS) in the Relevant Area exceed the adopted screening criteria for the protection of beneficial use of groundwater for irrigation, potable and non-domestic water use and maintenance of ecosystems (Coffey February 2018, p 130) and is therefore subject to certain specific health precautions issued by the Commonwealth in respect of certain activities including ingestion (both direct and incidental) of contaminated bore water used for domestic (such as drinking water) or recreational purposes (such as filling of swimming pools). and ingestion of contaminated home-grown produce watered with contaminated bore water.

(ii) The groundwater in the Tindal Aquifer, under the First and Second Applicants' Land has been contaminated with high levels of PFC Contaminants:

A. As at 1 October 2016, water drawn from the Private Bore on the Applicants' Land was found to contain PFOS 0.21µg/L, PFHxS 0.29µg/L, which levels exceed the recommended drinking water quality value set by the Food Standards Australia New Zealand in April 2017. (Letter dated 1 November 2016 from Department of Defence to the First and Second Applicants).

(iii) Particulars of the contamination of the groundwater under the land of Group Members will be given following opt out, the determination of the Applicants' claim and identified common issues at an initial trial and if and when it is necessary for a determination to be made of the individual claims of those Group Members.

64. By reason of the matters pleaded in paragraph 63, groundwater in the Tindal Aquifer and beneath the Relevant Area (including land owned by the Applicants and Group Members) has become, and is likely to continue to remain, potentially hazardous and unfit for Groundwater Usages (the **Groundwater Contamination**).

PARTICULARS

(i) The groundwater in the Tindal Aquifer under the Applicants' Land is potentially hazardous and unfit for drinking: Parts E.1 above and F.5 below are repeated.

(ii) The groundwater in the Tindal Aquifer is potentially hazardous and unfit for:

A) irrigation purposes because such usages result in the further spreading of PFC Contaminants to soils and uptake by plants, vegetables and fruits, and the exposure of people to PFC Contaminants: Parts E.1 above and F.5 below are repeated.

B) watering of livestock (including chickens) because such usages may result in the further spreading of PFC Contaminants to soils, uptake of PFC Contaminants by the livestock and the exposure of people to PFC Contaminants (particularly by consumption of livestock and eggs): Parts E.1 above and F.5 below are repeated.

C) swimming, domestic purposes, and the Municipality of Katherine water supply because such usages may result in the further exposure of people to PFC Contaminants: Parts E.1 above and F.5 below are repeated.

(iii) Coffey June 2018 HHRA at pp 47 and 137.

(iv) Further particulars of the contamination of the groundwater in the Tindal Aquifer under the Group Members' land will be given following opt out, the determination of the Applicants' claim and identified common issues at an initial trial and if and when it is

necessary for a determination to be made of the individual claims of those Group Members.

65. There is no practical or cost-effective way of remediating the Toxic Plume, or the Groundwater Contamination.

66. Further, there is no practical, cost-effective or reliable alternative water supply to the Tindal Aquifer for:

(a) irrigation;

(b) watering of livestock; and

(c) use by some Group Members who do not have and/or have never had a mains water supply.

PARTICULARS

(i) *Coffey February 2018 Report at pp 28 to 31 and 34.*

(ii) *Coffey February 2018 Executive Summary at p iv.*

F.3 The contamination of soil in Katherine

67. Soil on the land within the Relevant Area (including soil on land owned by the Applicants and Group Members) has become, and is likely to continue to become and remain, contaminated by PFC Contaminants emanating from the Tindal Base (the **Soil Contamination**) by:

(a) overland flows of surface water commingled with Spent AFFF (containing PFC Contaminants) from the Tindal Base; and

(b) discharge or application of groundwater containing PFC Contaminants extracted from the Tindal Aquifer by persons engaged in Groundwater Usage to the soils (by, in particular, irrigation).

PARTICULARS

(i) Coffey February 2018 Report at pp 67-70, 109-112, and 130.

(ii) The soil on the First and Second Applicants' Land has been contaminated with PFCs. As at 18 November 2016, testing of soil on the First and Second Applicants' Land identified PFOS at 0.0035mg/kg and PFHxS at 0.0004mg/kg.

(iii) Further particulars may be provided may be provided after discovery and inspection.

(iv) Particulars of the contamination of the soils on lands of Group Members will be given following opt out, the determination of the Applicants' claim and identified common issues at an initial trial and if and when it is necessary for a determination to be made of the individual claims of those Group Members.

68. There is no practical or cost-effective way of remediating the Soil Contamination.

F.4 The Broader Biota Contamination

69. Extensive other aspects of the biotic and abiotic matrices within the Relevant Area (including on land owned by the Applicants and Group Members) have become and are likely to continue to remain, contaminated by PFC Contaminants, and be recirculated indefinitely within the Relevant Area (the **Broader Biota Contamination**).

PARTICULARS

(i) Coffey December 2017 IHHRA at pp 46 to 81.

(ii) Fruit and vegetables from residential gardens in the Municipality of Katherine, eggs from locally raised poultry, livestock raised within the Relevant Area, and fish and crustaceans from the Katherine River have been found to contain PFCs and PFC Contaminants to varying degrees.

(iii) Ingestion of produce (including livestock, fruit, vegetables and eggs) irrigated with impacted groundwater (or impacted surface water) and/or fish and crustaceans from the Tindal Creek or Katherine River are secondary sources of PFC contamination: (Department of Defence Tindal Community Walk In Session, Interim Human Health Risk Assessment, December 2017, p 2).

(iv) Secondary sources of PFC contamination, leading to further redistribution of contamination and creation of additional exposure pathways for ongoing contamination of the biota generally (including humans): Braunig J, Baudel C, Heffernan A et al, Fate and redistribution of perfluoroalkyl acids through AFFF-impacted groundwater (2017).

(v) Coffey June 2018 HHRA at pp 53-59 and 137.

70. There is no practical, cost-effective way of remediating the Broader Biota Contamination.

F.5 The announcement of the contamination of Katherine

71. On a date shortly before 23 November 2016 (that is, the Relevant Date), the Commonwealth published a document titled "Department of Defence, RAAF Base Tindal (October 2016)" (the **Contamination Announcement**) which stated:

(a) the Tindal Base had a legacy of using AFFF for emergency firefighting situations and fire fighter training;

(b) PFOS and PFOA belong to a group of chemicals known as per- and poly-fluoroalkyl substances (**PFAS**) and until recently, PFAS were known as 'perfluorinated chemicals' or 'PFCs';

(c) PFAS were an emerging concern around the world because they are persistent in the environment;

(d) that because PFAS persist in humans and the environment, it was recommended that human exposure be minimised;

(e) based on the outcome of preliminary sampling, it had been determined that RAAF Base Tindal would be subject to a detailed environmental investigation;

(f) that the detailed environmental investigation would include:

(i) sampling soil, sediment, surface water, and groundwater on and off Tindal Base to identify PFAS exposure in the vicinity;

(ii) identifying pathways and receptors for the potential migration of PFAS;

(iii) community and stakeholder engagement, including a water-use survey;

(iv) a human health and ecological risk assessment (if required) to evaluate potential risks to the human population and ecology, and inform future action to mitigate risks;

(g) when detailed environmental investigation reports were finalised and publicly released, residents, businesses, and local stakeholders would be consulted;

(h) that a community briefing and information activity would be conducted prior to the commencement of the detailed environmental investigation at the Tindal Base; and

(i) alternative sources of drinking water were being provided to eligible residents located in close proximity to the Tindal Base who did not have a town water connection, and relied on the use of a bore for drinking water, as well as to residents whose drinking water was sourced from a rainwater tank which contained or did contain bore water, and to residents in other exceptional circumstances.

PARTICULARS

(i) The Contamination Announcement referred to a report by Jones Lang LaSalle titled "Defence per- and poly-fluroalkyl Substances (PFAS) – Environmental Management Preliminary Sampling Program – RAAF Base Tindal: Final Report" and date September 2016, which was released publicly on 8 November 2016 and is available at:

http://www.defence.gov.au/Environment/PFAS/docs/General/PSPReports/PSPTindal.pdf

72. On 23 November 2016, the Commonwealth convened a community briefing as publicised in the Contamination Announcement (the **November 2016 Community Information Session**) at which its representatives made the following statements:

(a) there was a history of AFFF being used at the Tindal Base in emergency firefighting situations and for fire fighter training;

(b) the AFFF that had been used at the Tindal Base contained PFAS—namely including perfluorooctane and perfluorooctanoic acid;

(c) PFAS were a class of manufactured chemical that had been used to make products that resist heat, stains, grease, and water;

(d) PFAS were a concern around the world because they persist in the environment;

(e) because PFAS persist in human and the environment, it was recommended that human exposure to them be minimised;

(f) PFAS had been detected in groundwater and surface water samples collected from locations off-base in the vicinity of the Tindal Base;

(g) alternative sources of drinking water were being provided to eligible residents ;

(h) a detailed environmental investigation would be undertaken to determine the nature and extent of PFAS on and in the vicinity of the Tindal Base; and

(i) a human health and ecological risk assessment would be undertaken (if required) to evaluate risks to human health and ecology, and to inform future action to mitigate risks.

PARTICULARS

*(i) The November 2016 Community Information Session was held on 23 November 2016 at Katherine, at which a slideshow presentation entitled "PFAS Investigation and Management: Community Information Session – RAAF Base Tindal Environmental Investigation" dated 23 November 2016, was made (**November 2016 Presentation**). The November 2016 Presentation is published on:*

http://www.defence.gov.au/Environment/PFAS/Docs/Tindal/Presentations/PresentationCommunityWalkinSession23November.pdf

(ii) Each of the statements in subparagraphs (a) to (i) was made in writing in the July 2014 Presentation, and spoken to orally at the meeting by representatives of the Commonwealth.

73. In December 2017, the Commonwealth released a factsheet (the **December 2017 Factsheet**), advising as follows:

(a) an Interim Human Health Risk Assessment (**IHHRA**) was expected to be finalised and released to the public in mid-December 2017;

(b) the IHHRA provides information to allow residents to make informed decisions about ways to reduce their potential exposure to PFAS;

(c) to reduce exposure to PFAS, residents within the Investigation Area should:

(i) avoid drinking PFAS contaminated groundwater (sourced from a bore) or water drawn from the Katherine River downstream of the Katherine Bridge;

(ii) avoid or minimise using contaminated groundwater for filling swimming pools or paddling pools;

(iii) avoid or minimise consumption of eggs from poultry that are watered with groundwater or surface water contaminated with PFAS;

(iv) combine consumption of fruit and vegetables grown with PFAS contaminated bore water, with other sources of fruit and vegetables grown outside of the Investigation Area; and

(v) combine consumption of fish or prawns collected from the Katherine River, with other sources of fish or prawns collected outside the Investigation Area.

PARTICULARS

(i) The December 2017 Factsheet is published on:

http://www.defence.gov.au/Environment/PFAS/docs/Tindal/factsheets/20171129TindalInterimHumanHealthRiskAssessment.pdf

*(ii) The release of the December 2017 Factsheet was accompanied with a community information session held on 4 December at Katherine, at which a slideshow presentation entitled "PFAS Investigation and Management: Community Information Session – RAAF Base Tindal Environmental Investigation" dated 4 December 2017, was made (**December 2017 Presentation**). The December 2017 Presentation is published on:*

http://www.defence.gov.au/Environment/PFAS/docs/Tindal/Presentations/171204CommunityWalkinSessionPresentationDSIAndHHRA.pdf

74. In March 2018, the Commonwealth released a further factsheet (the **March 2018 Factsheet**) providing a summary of the results of the Detailed Site Investigation (**DSI**) and advising as follows:

(a) there are several potential pathways for PFAS to move through the environment, including:

(i) from soil in source areas to the groundwater (into the Tindal Aquifer);

(ii) from soil in source areas to surface water (into drains and Tindal Creek);

(iii) in groundwater flowing towards Uralla, the town of Katherine and the Katherine River;

(iv) from surface water runoff into drains and along Tindal Creek;

(v) uptake by animals and some plants from PFAS contaminated sediment, groundwater and surface water;

(vi) use of groundwater for domestic, irrigation and stock watering purposes;

(b) the following scenarios may pose a potential risk of exposure to PFAS:

(i) ingestion of water from Tindal Creek or Katherine River during recreational activities;

(ii) ingestion of contaminated river water or bore water used for domestic or recreational purposes;

(iii) ingestion of contaminated home-grown produce watered with contaminated bore or river water;

(iv) consuming fish and crustaceans from the creek or river in the vicinity of the Base;

(c) the scenarios described in paragraph (b) above would be explored in depth within the Human Health Risk Assessment (**HHRA**); and

(d) the western edge of the Investigation Area has been modified to reflect localised migration of PFAS west of the Katherine River.

PARTICULARS

(i) The March 2018 Factsheet is published on:

http://www.defence.gov.au/Environment/PFAS/docs/Tindal/factsheets/20180321NewsletterKatherine.pdf

(ii) In conjunction with the release of the March 2018 Factsheet the Commonwealth opened a PFAS Investigation Community Shopfront at Shop 4 in the Katherine Oasis Woolworths Complex on Tuesday 27 and Wednesday 28 March 2018.

75. In June 2018, the Commonwealth released a further factsheet titled "*RAAF Base Tindal – Human Health Risk Assessment Factshee*t" (the **June 2018 Factsheet**) providing a summary of the findings of the HHRA and advising that:

(a) five water-use zones were identified relating to water quality and water use within the Investigation Area characterised by PFAS concentrations;

(b) there is an elevated risk of PFAS exposure from:

(i) drinking bore water from Zone 1 as a primary water source;

(ii) regular consumption of high volumes (>5L/day) of bore water from Zone 2;

(iii) eating home-grown eggs from poultry watered with Zone 1 bore water;

(iv) regular consumption (1 serve/week) of fish from Katherine River;

(v) regular consumption of large volumes of crustaceans from the Katherine River; and

(vi) handling of soils and sediments in the source areas on Base;

(c) there is a marginal risk of PFAS exposure from:

(i) drinking bore water from Zone 2 as a primary water source;

(ii) regular consumption of high volumes (>5L/day) of river water from Zone 3;

(iii) regular consumption by small children of high volumes (1 serve/day) of home grown meat watered with bore water from Zone 1;

(iv) regular consumption by small children of high volumes of fruits and vegetables (0.5kg/ day) watered with bore water from Zone 1 and Zone 2 or river water from Zone 3;

(v) regular consumption by small children of high volumes (4/week) of home-grown eggs from poultry watered with Zone 2 bore water;

(vi) regular consumption of bush foods (snakes, lizards, turtles) from the Investigation Area; and

(vii) regular swimming by small children in pools filled from Zone 1 Bore water.

PARTICULARS

(i) The June 2018 Factsheet is published on:

http://www.defence.gov.au/Environment/PFAS/docs/Tindal/factsheets/201806HHRAFactsheet.pdf

*(ii) The release of the December 2017 Factsheet was accompanied with a community information session held on 4 December at Katherine, at which a slideshow presentation entitled "Community Information Session PFAS Investigation & Management Program" dated 18 June 2018, was made (**June 2018 Presentation**). The December 2017 Presentation is published on:*

http://www.defence.gov.au/Environment/PFAS/docs/Tindal/presentations/201806CommunityWalkinSessionPresentation.pdf

F.6 The injurious affectation to land in the Relevant Area

76. Land in the Relevant Area (including the land of the Applicants and Group Members) has become, and is likely to remain:

(a) affected by the Tindal Creek Contamination; and/or

(b) affected by the Katherine River Contamination; and/or

(c) affected by the Groundwater Contamination; and/or

(d) affected by the Soil Contamination; and/or

(e) affected by the Broader Biota Contamination.

PARTICULARS

(i) As to subparagraph (a), paragraphs 56 to 60 are repeated.
(ii) As to subparagraph (b), paragraphs 56 to 60 are repeated.
(iii) As to subparagraph (c), paragraphs 61 to 66 are repeated.
(iv) As to subparagraph (d), paragraphs 67 to 68 are repeated.
(v) As to subparagraph (e), paragraphs 69 to 70 are repeated.
(vi) Coffey June 2018 HHRA at pp 47, 53-56, 59, 120 and 137 to 138.

77. Further, or alternatively, by reason of:

(a) the Tindal Creek Contamination; and/or

(b) the Katherine River Contamination; and/or

(c) the Groundwater Contamination; and/or

(d) the Soil Contamination; and/or

(e) the Broader Biota Contamination,

land in the Relevant Area (including the land of the Applicants and Group Members) has become, and is likely to remain land, of which occupiers and produce, livestock and biota from which, have ongoing and largely unavoidable exposure to PFC Contaminants through multiple potential pathways (**Ongoing Contaminant Exposure**).

PARTICULARS

(i) Paragraphs 56 to 70 are repeated.

(ii) Coffey December 2017 IHHRA at p ix to xiii, and 46 to 81.

iii) Braunig J, Baudel C, Heffernan A et al, Fate and redistribution of perfluoroalkyl acids through AFFF-impacted groundwater (2017).

78. Further, or alternatively, there exists a material risk that:

(a) land in the Relevant Area (including land owned by the Applicants and Group Members) may be recorded on a register established pursuant to s 9 of the *Waste Management and Pollution Control Act 1998* (NT) (**WMPCA**), pursuant to s 77 of the WMPCA; and

(b) owners of land in the Relevant Area (including land owned by the Applicants and Group Members) may be obligated to disclose to prospective purchasers that land is and/or that there is a risk that land may be contaminated by PFC Contaminants (with any contract of sale subject to rescission if disclosure is not made).

PARTICULARS

(i) As to subparagraph (a):

A) Land may be placed on a register if the owner or occupier of that land is issued a "pollution abatement notice".

B) A "pollution abatement notice" may be issued to the owner or occupier of land that is polluted: s 77 of the WMPCA.

C) Pollution means the presence of a contaminant or waste in the environment as a consequence of an emission, discharge, deposition, escape or disturbance of a contaminant or waste: s4(1) of the WMPCA.

D) PFC Contaminants are a contaminant or waste as defined under s 4(1) of the WMPCA and paragraph 52 is repeated.

(ii) The obligations in subparagraph (b) arise under s 112(2) of the WMPCA if the owner or occupier of land is issued with a "pollution abatement notice" and/or at common law in respect of the risk of contamination to land.

79. Further, or alternatively, by reason of the matters pleaded in paragraphs 56 to 78, there exists a material risk that by reason of the Tindal Creek Contamination and/or the Katherine River Contamination and/or Groundwater Contamination and/or the Soil Contamination and/or the Broader Biota Contamination that persons may be unable to conduct agricultural businesses or activities growing crops, feedstock, fruits and vegetables intended for sale for human consumption, on land in the Relevant Area at all and/or with the same degree of profitability.

PARTICULARS

(i) Parts E.1 above and F.5 below are repeated.

(ii) There is a material risk that persons who supply stock feeds that are grown within the Relevant Area and required to provide a commodity vendor declaration under the LPA may be unable to state that the stock feeds are free of chemical residue and may be obliged to disclose the possible presence of PFOS/PFOA.

(iii) Coffey June 2018 HHRA at pp 47, 53-56, 59, 120, 137-138.

80. By reason of the matters pleaded in paragraphs 56 to 78, land in the Relevant Area has become, and is likely to remain:

(a) land which is, or may be perceived by prospective purchasers of land to be, unfit for residential purposes or human occupancy because occupiers and visitors have ongoing and largely unavoidable exposure to PFC Contaminants through multiple potential pathways;

(b) land which is, or may be perceived by prospective purchasers of land to be unfit for agricultural purposes, including use for growing crops for sale for human consumption, growing feedstock for sale for livestock intended for sale for human consumption, pasture for livestock intended for sale for human consumption and fruits and vegetables intended for sale for human consumption.

PARTICULARS

The particulars to paragraphs 56 to 78 are repeated.

81. By reason of the matters pleaded in paragraph 80, land in the Relevant Area has become, and is likely to remain, injuriously affected in its value (**Contamination Land Value Affectation**).

PARTICULARS

(i) The quantum of the adverse affectation on the value of the Applicants' Land will be particularised following service of the Applicants' opinion evidence in chief.

(ii) The quantum of the adverse affectation on the value of the land of Group Members will be given following opt out, the determination of the Applicants' claim and identified common issues at an initial trial and if and when it is necessary for a determination to be made of the individual claims of those Group Members.

F.7 The injurious affectation to businesses in the Relevant Area

82. By reason of the matters pleaded in paragraphs 56 to 78 and/or 79 to 80, businesses operating from land in the Relevant Area have become, and are likely to remain:

(a) businesses operating from land which is, or may be perceived by prospective purchasers of businesses to be, unfit for human occupancy because occupiers and visitors have ongoing and largely unavoidable exposure to PFC Contaminants through multiple potential pathways;

(b) businesses operating from land which is unfit for conducting business growing crops for sale for human consumption, growing feedstock for sale for livestock intended for sale for human consumption, pasture for livestock intended for sale for human consumption and fruits and vegetables intended for sale for human consumption; and

(c) businesses operating in an area which is economically retarded by reason that actual and prospective consumers of business services perceive it to be affected by the Tindal Creek Contamination and/or the Katherine River Contamination and/or the Groundwater Contamination and/or the Soil Contamination and/or the Broader Biota Contamination and/or the Contamination Land Value Affectation.

83. By reason of the matters pleaded in paragraph 82 businesses operating from land in the Relevant Area have become, and are likely to remain injuriously affected in their profitability and/or value (**Contamination Business Affectation**)

F.8 The reasonable foreseeability of the injurious affectation to the value of land and businesses in the Relevant Area

84. At all material times, by reason of the matters pleaded in paragraphs 8 to 30 and 47 to 55 above, it was reasonably foreseeable that use of AFFF Working Solution and/or AFFF on the Tindal Base as pleaded in paragraphs 33 to 46 would result in:

(a) the Tindal Creek Contamination;

(b) the Katherine River Contamination;

(c) the Groundwater Contamination;

(d) the Soil Contamination;

(e) the Broader Biota Contamination;

(f) the Contamination Land Value Affectation; and/or

(g) the Contamination Business Affectation.

G THE COMMONWEALTH'S ACTS AND OMISSIONS

G.1 The Commonwealth's knowledge

G.1.1 The Commonwealth's knowledge of the Tindal Base and its surrounds

85. At all material times, the Commonwealth knew, or ought reasonably to have known each of:

(a) the matters pleaded in paragraphs 5 to 16 above;

(b) the matters pleaded in paragraphs 17, 18, 19(d) and 19(e) above;

(c) the matters pleaded in paragraph 20 above;

(d) the matters pleaded in paragraphs 21 to 24 above; and

(e) the matters pleaded in paragraph 25 above.

PARTICULARS

(i) as to sub-paragraph (a), these were natural features which ought reasonably to have been known to a reasonable person occupying the land comprising the Tindal Base.

(ii) as to sub-paragraph (b), these were natural features which ought reasonably to have been known to a reasonable person occupying the land comprising the Tindal Base, and who engaged in the activities pleaded in paragraph 24 above.

(iii) as to sub-paragraph (c), these were artificial features which the Commonwealth developed, constructed, upgraded and utilised (as pleaded in paragraphs 21 to 24 *above).*

(iv) as to sub-paragraph (d), this ought reasonably to have been known to a reasonable person who knew or ought reasonably to have known of the matters referred to in sub-paragraphs (a) to (c) above.

G.1.2 The Commonwealth's knowledge of water use at Katherine

86. At all material times, the Commonwealth knew, or ought reasonably to have known each of:

(a) the matters pleaded in paragraph 26 to 27 above;

(b) the matters pleaded in paragraph 28 above;

(c) the matters pleaded in paragraph 29 above; and

(d) the matters pleaded in paragraph 30 above.

PARTICULARS

(i) as to sub-paragraph (a), these were matters which were readily observable to, and ought reasonably to have been known by a reasonable person occupying the land comprising the Tindal Base, having regard to its proximity to the Municipality of Katherine, Tindal Creek, and the Katherine River.

(ii) as to sub-paragraph (b), these were matters which were readily observable to, and ought reasonably to have been known by a reasonable person occupying the land comprising the Tindal Base, having regard to its proximity to the Municipality of Katherine.

(iii) as to sub-paragraph (c), this ought reasonably to have been known to a reasonable person who knew or ought reasonably to have known of the matters referred to in sub-paragraphs (a) and (b) above.

(iv) as to sub-paragraph (d), this ought reasonably to have been known to a reasonable person who knew or ought reasonably to have known of the matters referred to in sub-paragraphs (a) to (c) above.

G.1.3 The Commonwealth's knowledge of the potential flow of Spent AFFF and Fire Run-Off from the Tindal Base

87. At all material times, the Commonwealth knew, or ought reasonably to have known each of:

(a) the matters pleaded in paragraphs 33 to 46;

(b) the matters pleaded in paragraphs 47 to 48; and

(c) the matters pleaded in paragraph 49.

PARTICULARS

(i) as to sub-paragraph (a), these were matters known to the Commonwealth as the entity responsible for conducting the Training and Operation Activities, and using AFFF Concentrate, AFFF Working Solution and AFFF, and disposing of the same.

(ii) as to sub-paragraph (b), these were matters which were readily observable to, and ought reasonably to have been known by a

reasonable person using AFFF Concentrate, AFFF Working Solution and AFFF.

(iii) as to sub-paragraph (c), this ought reasonably to have been known to a reasonable person who knew or ought reasonably to have known of the matters referred to in sub-paragraphs (a) and (b) above, together with the matters pleaded in sub-paragraph 85(d).

G.1.4 The Commonwealth's knowledge of the toxic properties of Spent AFFF and Fire Run-Off

88. At all material times from around 1987, the Commonwealth knew that its Training and Operations Activities at the Tindal Base using AFFF Working Solution and AFFF were:

(a) potentially damaging to the environment; and/or

(b) potentially causative of adverse health effects in humans.

PARTICULARS

(i) See Annexure D.

(ii) As to sub-paragraph (a) see:

a. Tindal Base Environmental Management Plan – Environmental Contingency Plan at pp 3-8 to 3-9 and Appendix F; and

b. Tindal Base Environmental Impact Statement at p 5-5 to 5.8.

(iii) As to sub-paragraph (b), the matters referred to in particular (i) involved knowledge of the contamination of groundwater, and it may be inferred that a person who knew that groundwater was contaminated also knew that there existed a potential for adverse health effects in humans who may consume groundwater.

89. Further, or alternatively, at all material times from no later than 16 May 2000, the Commonwealth knew that AFFF and Spent AFFF was:

(a) potentially damaging to the environment; and/or

(b) potentially causative of adverse health effects in humans,

because it contained PFCs, namely PFOS.

PARTICULARS

(i) See Annexure D, Item D3.

90. Further, or alternatively, at all material times from no later than 2002, the Commonwealth knew or ought reasonably to have known that AFFF Working Solution, AFFF, and Spent AFFF had contaminated groundwater under the Tindal Base.

PARTICULARS

(i) Coffey February 2018 Report at Appendix A page 2

G.2 The Commonwealth's conduct

G.2.1 The Commonwealth's deliberate conduct

91. At all material times, the Commonwealth's:

(a) use of AFFF in the Training and Operations Activities, as pleaded in paragraphs 33 to 44; and/or

(b) method of disposal of AFFF and Spent AFFF, as pleaded in paragraph 45,

was deliberate.

G.2.2 The Commonwealth's careless conduct

92. Further, or alternatively, by reason of the matters pleaded in paragraphs 33 to 46 at all material times on and after each of the times identified in paragraphs 88 to 90 the Commonwealth carelessly:

(a) did the following acts:

(i) it allowed large quantities of AFFF to be discharged to bare ground;

(ii) it allowed Spent AFFF and Fire Run-Off to flow directly onto bare ground in large quantities;

(iii) it allowed Spent AFFF and Fire Run-Off to permeate or percolate into the soil at the Tindal Base;

(iv) it allowed Spent AFFF and Fire Run-Off to be transmitted to the groundwater beneath the Tindal Base, including the Tindal Aquifer (where it was likely to mingle with groundwater underlying areas off-base in the Relevant Area);

(v) it allowed Spent AFFF and Fire Run-Off to drain into the surrounding water catchment areas (including via the Drainage System), including into Tindal Creek and the Katherine River; and/or

(vi) it allowed Spent AFFF and Fire Run-Off to be transmitted to the Katherine River; and/or

(vii) to the extent it stored Spent AFFF, it designed, engineered and/or constructed Evaporation Ponds and drainage pits in a manner that failed to avoid leakage to the surrounding environment;

(b) made the following omissions:

(i) it failed to investigate and assess, or to do so adequately, the risks associated with the use of AFFF before using, or continuing to use AFFF;

(ii) it failed to restrict, or to do so adequately, the use of AFFF Working Solution and AFFF only to emergencies;

(iii) it failed to take any or any adequate steps to contain or limit the use of AFFF Working Solution and AFFF in Training and Operations Activities;

(iv) it failed to take any or any adequate steps to contain, capture, clean up and securely dispose of Spent AFFF and Fire Run-Off, such that it did not:

(A) flow directly onto bare ground;

(B) permeate or percolate into the soil at the Tindal Base;

(C) become transmitted to the groundwater beneath the Tindal Base, including the Tindal Aquifer (where it was likely to mingle with groundwater underlying areas off-base in the Relevant Area);

(D) drain into the surrounding water catchment areas (including via the Drainage System), including into Tindal Creek and the Katherine River; and

(E) transmit to the Katherine River,

(v) it failed to store wastewater from the use of AFFF Working Solution and AFFF in impermeable Evaporation Ponds or drainage pits which did not leak into surrounding soil (so as to avoid leakage to the surrounding environment); and/or

(vi) it failed to take any or any adequate steps to remediate the contamination of the groundwater under the Tindal Base at any time after the time when it knew or ought reasonably to have known that groundwater was contaminated, as pleaded in paragraphs 88 to 90 (to the extent, which is unknown to the Applicant, that the contamination may at one time have been remediable).

PARTICULARS

(i) As to subparagraph (a)(i), paragraphs 33 to 43 are repeated.

(ii) As to subparagraph (a)(ii), paragraphs 44 to 45 are repeated.

(iii) As to subparagraph (a)(iii), paragraphs 44 to 45 and 57 and 61 to 62 are repeated.

(iv) As to subparagraph (a)(iv), paragraphs 61 to 62 are repeated.

(v) As to subparagraph (a)(v), paragraphs 45 and 57 is repeated.

(vi) As to subparagraph (a)(vi), paragraph 45 and 57 is repeated.

(vii) As to subparagraph (a)(vii), paragraph 45 and 46 is repeated.

(viii) As to subparagraph (b)(i), paragraphs 33 to 45 and 88 to 90 are repeated.

(ix) As to subparagraph (b)(ii), paragraphs 33 to 44 are repeated.

(x) As to subparagraph (b)(iii), paragraphs 33 to 44 are repeated.

(xi) As to subparagraph (b)(iv), paragraphs 33 to 45, 57 and 62 are repeated.

(xii) As to subparagraph (b)(v), paragraph 45 and 46 is repeated.

(xiii) As to subparagraph (b)(vi), paragraphs 5 and 88 to 90 are repeated.

93. Further, or alternatively, the Commonwealth:

(a) failed, at all material times after each of the times identified in paragraphs 88 to 90 (**Actual Knowledge Dates**) prior to the Relevant Date, to warn persons resident in the Relevant Area that:

(i) it had been using AFFF Working Solution and AFFF at the Tindal Base since or about 1977;

(ii) Spent AFFF had permeated and percolated into the soil at the Tindal Base and entered and/or contaminated, the Tindal Aquifer, Tindal Creek, and Katherine River; and/or

(iii) Spent AFFF was:

(A) potentially damaging to the environment; and/or

(B) potentially causative of adverse health effects in humans; and/or

(b) failed, at all material times after the inception of the *National Environmental Protection (Assessment of Site Contamination) Measure 1999*, Volume 1, Ch6(6), to comply with that measure by providing all relevant information on site contamination for persons resident in the Relevant Area.

H THE COMMONWEALTH'S LIABILITY

H.1 Nuisance

H.1.1 Liability in nuisance

94. By its use of the Tindal Base as pleaded in paragraphs 33 to 46 and 91 to 92, the Commonwealth has created, and continued, an interference with the use and enjoyment of the land owned by the Applicants and Group Members (**the Nuisance**), in that:

(a) their land is affected by the Tindal Creek Contamination and/or the Katherine River contamination, and such contamination is irremediable (and paragraphs 5659 to 62 are repeated);

(b) they are no longer able safely to use Private Bores on their land to access the Tindal Aquifer as a water supply for Groundwater Usages, given the Tindal Aquifer are irremediably contaminated (and paragraphs 63 to 66 are repeated);

(c) their soil has sustained Soil Contamination, and such contamination is irremediable (and paragraphs 67 to 68 are repeated);

(d) their land is affected by the Broader Biota Contamination, and such contamination is irremediable (and paragraphs 69 to 70 are repeated); and

(e) those occupying their land are subject to the Ongoing Contaminant Exposure.

PARTICULARS

(i) The Applicants' use and enjoyment of the Applicants' Land has been interfered with by reason of the Groundwater Contamination, the Soil Contamination and/or the Broader Biota Contamination.

(ii) The interference with the land of Group Members will be given following opt out, the determination of the Applicants' claim and identified common issues at an initial trial and if and when it is necessary for a determination to be made of the individual claims of those Group Members.

95. Further, by reason of the matters pleaded in paragraphs 25, 30, 49, 55, 84 and/or 85 to 90, at all material times it was reasonably foreseeable to a reasonable person in the Commonwealth's position that persons owning land or businesses in the Relevant Area (including the Applicants and Group Members) would suffer loss by the Commonwealth's use of the Tindal Base as pleaded in paragraphs 33 to 46, being:

(a) pure economic loss, in the form of diminution in the value of land in the Relevant Area; and/or

(b) pure economic loss, in the form of diminution in the value and profitability of businesses conducted on land in the Relevant Area.

PARTICULARS

(i) Paragraphs 25, 30, 49, 55, 84 and/or 85 to 90 are repeated

96. By reason of the matters pleaded in paragraphs 94 and 95, the Nuisance constitutes a substantial and unreasonable interference with the use and enjoyment of the land owned by the Applicants and Group Members.

H.1.2 Causation, loss and damage

97. The Nuisance directly caused:

(a) the Tindal Creek Contamination (as pleaded in paragraph 59);

(b) the Katherine River Contamination (as pleaded in paragraph 59);

(c) the Groundwater Contamination (as pleaded in paragraph 64);

(d) the Soil Contamination (as pleaded in paragraph 67);

(e) the Broader Biota Contamination (as pleaded in paragraph 69);

(f) the Contamination Land Value Affectation (as pleaded in paragraph 81); and/or

(g) the Contamination Business Affectation (as pleaded in paragraph 83), and

the Applicants and Group Members have thereby suffered loss and damage.

PARTICULARS

(i) The First and Second Applicants have suffered loss being:

a. Diminution in the value of the First and Second Applicants' Land;

b. Loss of opportunity to acquire land in a different area;

c. Wasted expenditure in developing the First and Second Applicants' Land so that it could accommodate a mango farm;

d. Distress, annoyance and inconvenience;

(ii) Further particulars of the Applicants' loss (and the quantum thereof) will be particularised following the service of the Applicants' evidence (including opinion evidence) in chief;

(iii) Particulars of the losses of Group Members will be given following opt out, the determination of the Applicants' claim and identified common issues at an initial trial and if and when it is necessary for a determination to be made of the individual claims of those Group Members.

H.1.3 Aggravated and exemplary damages

98. Further, on and from each of the Actual Knowledge Dates, by continuing the Nuisance by:

(a) continuing to do the acts as pleaded in paragraph 91 and/or sub-paragraph 92(a) (and each of them); and/or

(b) continuing to fail to do the things as pleaded in sub-paragraph 92(b) (and each of them),

in circumstances where it had the knowledge as pleaded in paragraphs 85 to 90, the Commonwealth engaged in aggravating conduct, and the Applicants and Group Members claim aggravated damages.

99. Further, or alternatively, on and from each of the Actual Knowledge Dates, by continuing the Nuisance by:

(a) continuing to do the acts as pleaded in paragraph 91 and/or sub-paragraph 92(a) (and each of them); and/or

(b) continuing to fail to do the things as pleaded in sub-paragraph 92(b) (and each of them),

in circumstances where it had the knowledge as pleaded in paragraphs 85 to 90, the Commonwealth engaged in conduct in contumelious disregard for the rights of the Applicants and Group Members, and the Applicants and Group Members claim exemplary damages.

H.2 Negligence

H.2.1 Duty of care

100. At all material times, persons other than the Commonwealth (including the Applicants and Group Members) had no capacity to control the activities of the Commonwealth on the Tindal Base, and in particular the use of AFFF Working Solution and AFFF on the Tindal Base.

101. At all material times, the land in the Relevant Area (including the Applicants' Land, the land owned by Group Members, and the land upon which Group Members' businesses were conducted) was physically proximate to the Tindal Base.

102. At all material times, by reason of the matters pleaded in paragraphs 100 to 101 persons:

(a) owning, or considering purchasing land in the Relevant Area; and

(b) owning, or considering acquiring businesses in the Relevant Area,

(including the Applicants and Group Members) were in a position of vulnerability.

103. By reason of the matters pleaded in paragraphs 25, 30, 49, 55, 84 and/or 85 to 90 a reasonable person in the Commonwealth's position would have foreseen a reasonably foreseeable and not insignificant risk of harm to persons owning, or acquiring land or businesses in the Relevant Area (including the Applicants and Group Members) by the Commonwealth's use of AFFF Working Solution and AFFF on the Tindal Base as pleaded in paragraphs 33 to 46, being:

(a) pure economic loss, in the form of diminution in the value of their land; and

(b) pure economic loss, in the form of diminution in the value, or profitability, of businesses conducted on land in the Relevant Area,

(the **Risk of Harm**).

PARTICULARS

(i) Paragraphs 25, 30, 49, 55, 84 and/or 85 to 90 are repeated

104. By reason of the matters pleaded in paragraphs 100 to 103, the Commonwealth owed a duty to each and all of the Applicants and Group Members to exercise reasonable care, in the use of AFFF Working Solution and AFFF on the Tindal Base not to cause:

(a) pure economic loss, in the form of diminution in the value of land in the Relevant Area; ~~and~~

(b) pure economic loss, in the form of diminution in the value, or profitability, of businesses conducted on land in the Relevant Area,

(**Duty of Care**).

105. By reason of the matters pleaded in paragraphs 100 to 103, on and after each of the Actual Knowledge Dates the Commonwealth owed a duty to each and all of the Applicants and Group Members to exercise reasonable care to warn them that:

(a) it had been using AFFF at the Tindal Base since or about 1987;

(b) Spent AFFF had permeated and percolated into the soil at the Tindal Base and entered and/or contaminated the Tindal Aquifer and/or contaminated Tindal Creek and the Katherine River; and

(c) Spent AFFF was:

(i) potentially damaging to the environment; and/or

(ii) potentially causative of adverse health effects in humans.

(**Duty to Warn**).

H.2.2 Scope of Duty of Care

106. On and from 26 January 1979, the *Control of Waters Ordinance 1938-1959* (**CWO)**, as amended by the *Control of Waters Act 1978* (NT) (**CWA)**:

(a) made it an offence to:

(i) convey, or cause or permit to be conveyed, any rubbish, dirt, filth or other noisome thing into any watercourse or aquifer; or

(ii) cause the water of any sink, sewer or drain or any other filthy water belonging to him or under his control, to run or be brought into any watercourse or aquifer;

(b) defined a "watercourse" to mean a river, stream, creek or natural channel along the bed of which water flows permanently, intermittently or occasionally; and

(c) defined an “aquifer” to mean a geological formation which is capable of accepting, storing or transmitting water.

PARTICULARS

(i) As to subparagraph (a), CWO s 10 and CWA s 5(b).
(ii) As to subparagraph (b), CWA s 10A:
(iii) As to subparagraph (c), CWO s 2.
(iv) As to subparagraph (d), CWA s 3(a).

107. On and from 1 July 1992, the *Water Act 1992* (NT) (**WA)**,:

(a) made it an offence for a person to cause, suffer or permit:

(i) waste (being a matter or thing, whether wholly or partly in a solid, liquid or gaseous state, which, if added to water, may pollute the water) to come into contact with water; or

(ii) water to be polluted.

(b) defined “water” to mean water flowing or contained in a waterway and/or ground water; and

(c) defined “pollute” to mean directly or indirectly altering the physical, thermal, chemical, biological or radioactive properties of the water so as to render it less fit for a prescribed beneficial use for which it is or may reasonably be used, or to cause a condition which is hazardous or potentially hazardous to –

(i) public health, safety or welfare;

(ii) animals, birds, fish or aquatic life or other organisms; or

(iii) plants.

PARTICULARS

(i) As to sub paragraph a) and b), WA s 16.

(ii) As to sub paragraphs c), WA s 4(1).

108. On and from 1 February 1999, the WMPCA:

(a) obliged persons not to cause pollution that results in "environmental harm", being any harm to or adverse effect, or potential harm to or potential adverse effect, on the environment (being land, air, water, organisms and ecosystem and including the well being of humans, amenity values of an area and social, cultural and economic conditions), or that generates or is likely to generate waste (being a solid, liquid or gas, or mixture of such substances, that is or are left over, surplus or an unwanted by product from any activity), unless that person takes all measures that are reasonable and practicable to prevent or minimise the pollution or environmental harm and reduce the amount of waste;

(b) defined "pollution" to mean:

(i) a contaminant or waste that is emitted, discharged, deposited or disturbed or that escapes; or

(ii) a contaminant or waste, effect or phenomenon, that is present in the environment as a consequence of an emission, discharge, deposition, escape or disturbance of a contaminant or waste;

(c) made it an offence to pollute or intentionally pollute the environment, where:

(i) serious environmental harm results and the person knows, or ought reasonably be expected to know, that serious environmental or material environmental harm will or might result from the pollution;

(ii) material environmental harm results and the person knows, or ought reasonably be expected to know, that serious environmental or material environmental harm will or might result from the pollution;

(d) defined "pollute" to mean:

(i) emit, discharge, deposit, or disturb, directly or indirectly, a contaminant or waste; or

(ii) cause, permit, or fail to prevent, directly or indirectly, the emission, discharge, deposition, disturbance or escape of a contaminant or waste;

(e) defined “serious environmental harm” to mean harm that is more serious than material environmental harm and includes environmental harm that:

(i) is irreversible or otherwise of a high impact or on a wide scale;

(ii) damages an aspect of the environment that is of a high conservation value, high cultural value or high community value or is of special significance;

(iii) results or is likely to result in more than $50,000 or the prescribed amount (whichever is greater) being spent in taking appropriate action to prevent or minimise the environmental harm or rehabilitate the environment; or

(iv) results in actual or potential loss or damage to the value of more than $50,000 or the prescribed amount (whichever is greater);

(f) defined “material environmental harm” to mean environmental harm that —

(i) is not trivial or negligible in nature;

(ii) consists of an environmental nuisance of a high impact or on a wide scale;

(iii) results, or is likely to result, in not more than $50,000 or the prescribed amount (whichever is greater) being spent in taking appropriate action to prevent or minimise the environmental harm or rehabilitate the environment; or

(iv) results in actual or potential loss or damage to the value of not more than $50,000 or the prescribed amount (whichever is greater); and

(g) made it an offence to cause an environmental nuisance (being unreasonable interference with or likely unreasonable interference with the enjoyment of the area by persons who occupy a place within the area or are otherwise lawfully in the area).

PARTICULARS

(i) As to sub paragraph (a), WMPCA ss 4 and 12(1).

(ii) As to sub paragraphs (b), (d), (e) and (f), WMPCA s 4.

(iii) As to sub paragraph (c) and (g), WMPCA s 83.

109. At all material times:

(a) from 26 January 1979 to 1 July 1992, the content of the CWO and CWA (as pleaded in paragraph 106);

(b) from 1 July 1992, the content of the WA (as pleaded in paragraph 107); and

(c) from 1 February 1999, the content of the WMPCA (as pleaded in paragraph 108),

bound the Commonwealth by reason of the *Commonwealth Places (Application of Laws) Act 1970* (Cth), and/or informed the scope of what a reasonably person ought do in relation to conduct which it was reasonably foreseeable might result in environmental harm (including the Risk of Harm pleaded in paragraph 103).

110. The Commonwealth had the capacity to exercise control of the Training and Operations Activities and the use of AFFF Working Solution and AFFF on the Tindal Base so as to take the precautions which a reasonable person in its position would have taken against the Risk of Harm, by:

(a) not doing the following acts at all, or alternatively any time after each of Actual Knowledge Dates:

(i) allowing large quantities of AFFF Working Solution and AFFF to be discharged to bare ground;

(ii) allowing Spent AFFF and Fire Run-Off to flow directly onto bare ground in large quantities;

(iii) allowing Spent AFFF and Fire Run-Off to permeate or percolate into the soil at the Tindal Base;

(iv) allowing Spent AFFF and Fire Run-Off to be transmitted to the groundwater beneath the Tindal Base, including the Tindal Aquifer (where it was likely to mingle with groundwater underlying areas off-base in the Relevant Area);

(v) allowing Spent AFFF and Fire Run-Off to drain into the surrounding water catchment areas (including via the Drainage System), including into Tindal Creek;

(vi) allowing Spent AFFF and Fire Run-Off to be transmitted to the Katherine River; and/or

(vii) to the extent it stored Spent AFFF, designing, engineering and/or constructing Evaporation Ponds and/or drainage pits in a manner that failed to avoid leakage to the surrounding environment;

(b) doing the following things, at any time, or alternatively any time after each of the Actual Knowledge Dates:

(i) investigating and assessing the risks associated with the use of AFFF Working Solution and AFFF before using, or continuing to use, AFFF Working Solution and AFFF (and not using them at all);

(ii) restricting the use of AFFF Working Solution and AFFF only for emergency activities;

(iii) taking steps to contain or limit the use of AFFF Working Solution and AFFF in the Training and Operations Activities;

(iv) taking steps to contain, capture, clean up and securely dispose of Spent AFFF and Fire Run-Off, such that it did not:

(A) flow directly onto bare ground;

(B) permeate or percolate into the soil at the Tindal Base;

(C) become transmitted to the groundwater beneath the Tindal Base, including the Tindal Aquifer (where it was likely to mingle with groundwater underlying areas off-base in the Relevant Area);

(D) drain into the surrounding water catchment areas (including via the Drainage System), including into Tindal Creek; and

(E) transmit to the Katherine River;

(v) storing wastewater from the use of AFFF in impermeable Evaporation Ponds or drainage pits which did not leak into surrounding soil (so as to avoid leakage to the surrounding environment); and/or

(vi) taking steps to remediate the contamination of the groundwater under the Tindal Base promptly after the time when it knew or ought reasonably to have known that groundwater was contaminated, as pleaded in paragraphs 88 to 90 (to the extent, which is unknown to the Applicants, that the contamination may at one time have been remediable).

H.2.3 Scope of Duty to Warn

111. At all material times after each of the Actual Knowledge Dates, the Commonwealth had capacity to warn the general public (including the Applicants and Group Members) that:

(a) it had been using AFFF Working Solution and AFFF at the Tindal Base since or about 1987;

(b) Spent AFFF had permeated and percolated into the soil at the Tindal Base and entered and/or contaminated the Tindal Aquifer and/or contaminated Tindal Creek and the Katherine River; and

(c) Spent AFFF was:

(i) potentially damaging to the environment; and/or

(ii) potentially causative of adverse health effects in humans.

H.2.4 Breach of duty

112. By reason of the matters pleaded in paragraphs 33 to 46, 92 and 110, the Commonwealth breached the Duty of Care (**the Negligence**).

113. By reason of the matters pleaded in paragraphs 33 to 46, 93 and 111, the Commonwealth breached the Duty to Warn (**the Negligent Failure to Warn**).

H.2.5 Causation, loss and damage

114. The Commonwealth's Negligence caused:

(a) the Tindal Creek Contamination (as pleaded in paragraph 59);

(b) the Katherine River Contamination (as pleaded in paragraph 59);

(c) the Groundwater Contamination (as pleaded in paragraph 64);

(d) the Soil Contamination (as pleaded in paragraph 67);

(e) the Broader Biota Contamination (as pleaded in paragraph 69);

(f) the Contamination Land Value Affectation (as pleaded in paragraph 81); and/or

(g) the Contamination Business Affectation (as pleaded in paragraph 83), and

the Applicants and Group Members have thereby suffered loss and damage.

PARTICULARS

(i) The particulars to paragraph 97 are repeated.

115. Further, or alternatively, the Commonwealth's Negligent Failure to Warn caused or materially contributed to the Applicants and some Group Members acquiring land in the Relevant Area, and the Applicants and Group Members have thereby suffered loss and damage.

PARTICULARS

(i) The First and Second Applicants would not have acquired the Applicants' Land were it not for the Commonwealth's Negligent Failure to Warn, and have thereby suffered loss, and particulars (i) and (ii) to paragraph 97 is repeated.

(ii) Particulars of the identity of those Group Members who would not have acquired land were it not for the Commonwealth's Negligent Failure to Warn will be given following opt out, the determination of the Applicants' claim and identified common issues at an initial trial and if and when it is necessary for a determination to be made of the individual claims of those Group Members, and particular (iii) to paragraph 97 is repeated.

H.2.6 Aggravated and exemplary damages

116. Further, on and from each of the Actual Knowledge Dates by:

(a) continuing to do the acts as pleaded in paragraph 91 and/or sub-paragraph 92(a) (and each of them); and/or

(b) continuing to fail to do the things as pleaded in sub-paragraph 92(b) (and each of them),

in circumstances where it had the knowledge as pleaded in paragraphs 85 to 90, the Commonwealth engaged in aggravating conduct, and the Applicants and Group Members claim aggravated damages.

117. Further, or alternatively, on and from each of the Actual Knowledge Dates by:

(a) continuing to do the acts as pleaded in paragraph 91 and/or sub-paragraph 92(a) (and each of them); and/or

(b) continuing to fail to do the things as pleaded in sub-paragraph 92(b) (and each of them),

in circumstances where it where it had the knowledge as pleaded in paragraphs 85 to 90, the Commonwealth engaged in conduct in contumelious disregard for the rights of the Applicants and Group Members, and the Applicants and Group Members claim exemplary damages.

H.3 Breach of statutory duty

H.3.1 Liability

118. The Tindal Base is situated on Commonwealth land as defined in ss 27 and 525 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (**EPBC Act**)

119. Pursuant to s 28 of the EPBC Act, the Commonwealth or a Commonwealth agency must not take an action that has, will have, or is likely to have a significant impact on the environment, defined by s 528 non-exhaustively to include:

(a) ecosystems and their constituent parts, including people and communities;

(b) natural and physical resources;

(c) the qualities and characteristics of locations, places and areas;

(d) heritage values of places; and

(e) the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b), (c) or (d).

120. By its use of the Tindal Base on and from 16 July 1999, as pleaded in paragraphs 33 to 46 and 91 and/or 92, the Commonwealth took an action or actions that has or is likely to have a significant impact on the environment.

PARTICULARS

(i) These actions have had such an impact by reason of the matters pleaded in paragraphs 56 to 69, namely the Tindal Creek Contamination, Katherine River Contamination, Toxic Plume, the Groundwater Contamination, the Soil Contamination, and the Broader Biota Contamination

(ii) These actions were likely to have such an impact by reason that they were reasonably foreseeable, by reason of the matters pleaded in paragraphs 25, 30, 49, 55 and 84.

121. By reason of the matters pleaded in paragraph 120, the Commonwealth has contravened s 28 of the EPBC Act (**EPBC Act Breach**).

H.3.2 Causation, loss and damage

122. The EPBC Act Breach caused:

(a) the Tindal Creek Contamination (as pleaded in paragraph 59);

(b) the Katherine River Contamination (as pleaded in paragraph 59);

(c) the Groundwater Contamination (as pleaded in paragraph 64);

(d) the Soil Contamination (as pleaded in paragraph 67);

(e) the Broader Biota Contamination (as pleaded in paragraph 69);

(f) the Contamination Land Value Affectation (as pleaded in paragraph 81); and/or

(g) the Contamination Business Affectation (as pleaded in paragraph 83), and

the Applicants and Group Members have thereby suffered loss and damage arising from the EPBC Act Breach.

PARTICULARS

The particulars to paragraph 97 are repeated.

I CLAIM FOR RELIEF

AND the Applicants claim on their own behalf, and on behalf of Group Members the relief set out in the Originating Application under Part IVA of the *Federal Court of Australia Act 1976* (Cth):

1. Damages (including aggravated and exemplary damages);

2. Further, or alternatively:

   (a) a declaration that by its use of the Tindal Base as pleaded in paragraphs 33 to 46 and 91 and/or 92 of this Statement of Claim, the Commonwealth contravened s 28(1) of the EPBC Act on and from 16 July 1999;

   (b) statutory compensation pursuant to s 500(1) of the EPBC Act;

3. Interest;

4. Costs; and

5. Such further or other relief as the Court thinks fit.

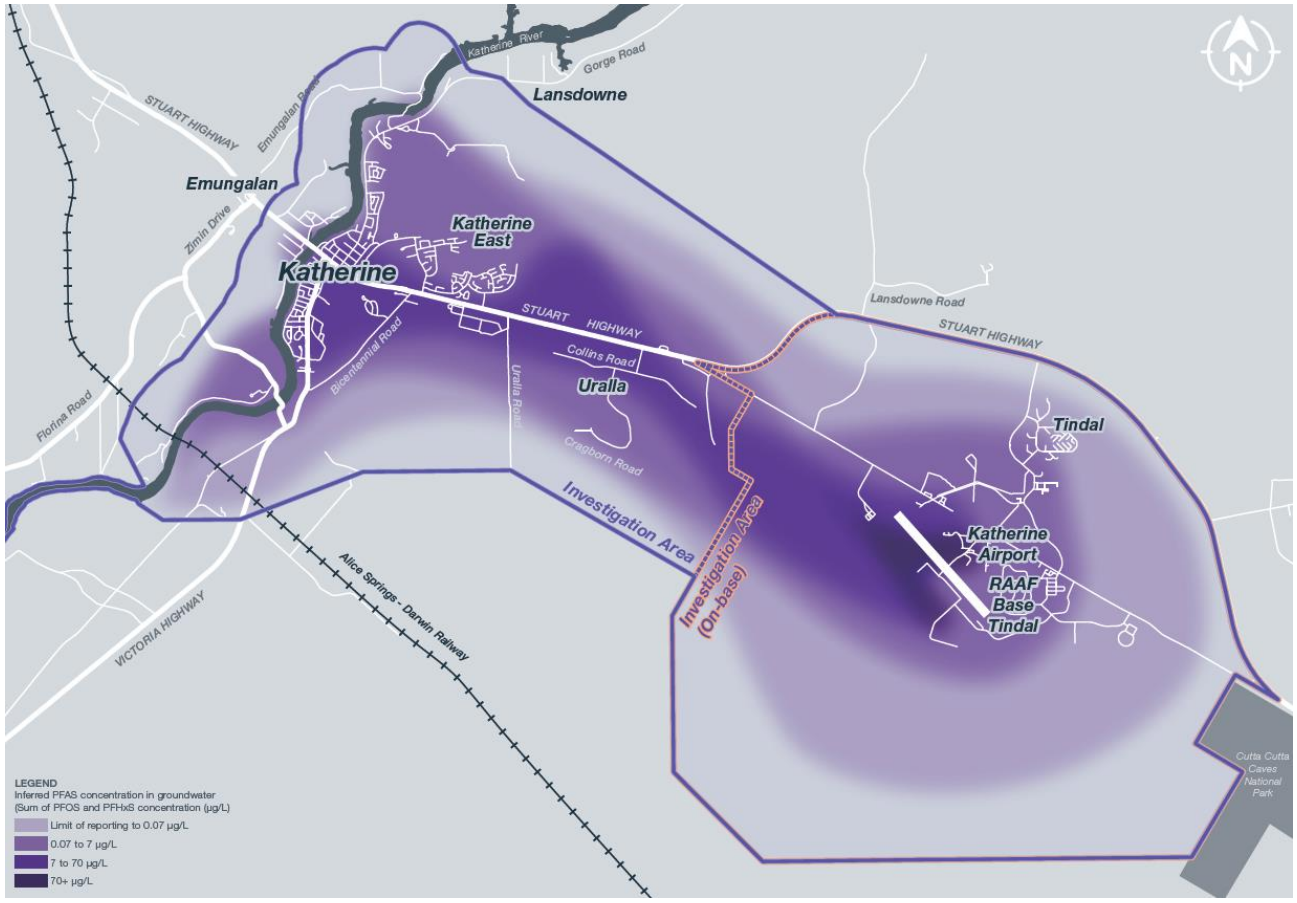
Date: ~~2 August 2018~~ 26 April 2019

Signed by Joshua Aylward
Lawyer for the Applicants

This pleading was prepared by TE O'Brien and WAD Edwards of counsel.

ANNEXURE A

(Relevant Area ~ [1])



ANNEXURE B

(Registered Bores on the Tindal Base ~ [24])

Bore No	Bore Name	Purpose	Compl Date	Drill depth	Latitude	Longitude
RN000148	R.A.A.F NO.465 TINDAL 228M	Unknown			-14.5369	132.3757
RN000408	R.A.A.F. BASE NO. 462 TINDAL 227M	Unknown			-14.4955	132.3836
RN000409	RAAF NO 464 TINDAL	Unknown			-14.5133	132.3748
RN001450	A 381 TINDAL 227M W OF AERODROME	Unknown			-14.5203	132.3754
RN001455	A 473 TINDAL	Unknown			-14.5315	132.3729
RN003025	NO.1 TEST HOLE TINDAL AIR STRIP	Investigation	1962-08-17	12.2	-14.5269	132.3688
RN003026	NO 2 TEST HOLE TINDALL AIRSTRIP	Unknown	1962-08-17	11.6	-14.5144	132.3875
RN003027	TEST HOLE NO 3 TINDAL	Investigation	1962-08-18	4.3	-14.5284	132.3834
RN004077	NO 2 TINDAL AIRSTRIP	Unknown	1963-09-20	32.6	-14.5163	132.3801
RN004143	NO 1 TINDAL AIRSTRIP	Unknown	1963-11-16	43.2	-14.5126	132.3727
RN004277	NO 1 TINDAL AIRSTRIP	Unknown	1963-09-16	12.2	-14.5107	132.3698
RN004600	RAAF NO3 JOB 230 TINDAL AIRSTRIP	Unknown	1964-11-24	46.3	-14.5087	132.3607
RN004648	R.A.AF. NO.5 JOB 241 TINDAL AIRSTRIP	Unknown	1965-01-07	24.4	-14.5107	132.3698
RN004709	RAAF NO 4 JOB 231 TINDAL AIRSTRIP	Unknown	1965-01-19	31.7	-14.5281	132.3873
RN005329	8" BORE TINDAL MARRIED QUARTERS TINDAL	Unknown	1966-02-14	35.6	-14.5252	132.3874
RN005706	TINDAL JOB NO 340 TINDAL	Unknown	1967-02-25	7.6	-14.5207	132.3859
RN005729	TINDAL MARRIED QUARTERS R.A.A.F. BASE TINDAL	Unknown	1967-03-28	18.3	-14.5207	132.3859
RN005732	MARRIED QUARTERS BORE TINDAL	Unknown	1967-03-18	30.5	-14.5207	132.3859
RN005770	NO 8 1ST ATT TINDAL	Unknown	1967-05-25	30	-14.5168	132.3777
RN005771	RAAF NO.8 2ND ATTEMPT TINDAL AIRSTRIP	Unknown	1967-06-04	33.5	-14.5181	132.3819
RN007079	PRODUCTION NO;1 TERMINAL BORE D.C.A. TINDAL	Unknown	1970-05-10	50	-14.5153	132.369
RN007821	Mataranka Station	Production	1971-10-01	64	-14.5465	132.395
RN021322	GILLS NO 1 2820 QUARRY RD	Unknown	1982-01-29	24	-14.4906	132.3526
RN021323	2/81 KUMBIDGEE STATION	Unknown	1981-11-28	26	-14.4936	132.3562
RN021324	1/81 KUMBIDGEE STATION	Unknown	1981-11-27	41	-14.4908	132.3623
RN022392	Tindal - WR 83/7	Monitoring	1983-10-18	80.9	-14.484	132.3643
RN022393	7/83 TINDAL AREA	Unknown	1983-10-19	68.9	-14.5201	132.406
RN023541	R.A.A.F. TINDAL AIRSTRIP	Production	1984-11-26	43.3	-14.5155	132.3995
RN024375	PIONEER CONCRETE TINDAL	Unknown	1985-11-16	60	-14.5195	132.4027
RN024376	PIONEER CONCRETE TINDAL	Unknown	1985-11-20	31	-14.5195	132.4027
RN024422	NO:1 NT P=1549	Unknown	1986-02-25	48	-14.4781	132.3652
RN024423	NO:2 NT P=550	Unknown	1986-03-03	34	-14.4855	132.3355
RN024458	WHITE CONSTRUCTIONS NO:3 TINDAL BYPASS ROAD	Unknown	1986-06-20	28	-14.517	132.4125
RN024555	WATER RESOURCES TINDAL	Unknown	1986-06-28	48	-14.5176	132.3828

RN024589	WHITE CONSTRUCTION NTP=2823	Unknown	1986-04-16	43	-14.4921	132.4028
RN024600	WHITE CONSTRUCTIONS 2823 TINDAL BYPASS RD	Unknown	1986-04-23	43	-14.4824	132.3893
RN024601	DEPT OF HOUSING & CONSTRUCTION TINDAL	Unknown	1986-04-29	49	-14.5197	132.3708
RN024614	COMMONWEALTH GOVERNMENT TINDAL	Unknown	1986-05-27	73	-14.5046	132.4176
RN025650	ORDNANCE RAAF BASE TINDAL	Production	1987-02-26	64	-14.534	132.4025
RN025999	GOLF COURSE PRODUCTION TINDALL	Unknown	1989-09-16	59.5	-14.5064	132.3924
RN026701	FUEL DUMP OBS NO 1 TINDAL	Unknown	1989-09-18	27.5	-14.5378	132.377
RN026702	FUEL DUMP OBS NO 2 TINDALL	Unknown	1989-09-20	29.8	-14.5234	132.397
RN026703	FUEL DUMP PRODUCTION TINDAL	Unknown	1989-09-21	22.9	-14.5234	132.3971
RN026704	SEWERAGE FARM PRODUCTION TINDALL	Unknown	1989-09-21	29	-14.5336	132.3721
RN026705	BOUNDARY PRODUCTION TINDALL	Unknown	1989-09-22	29	-14.5554	132.4251
RN026909	ARMY 955 11/89 TINDAL	Unknown	1989-08-27	29	-14.5116	132.4121
RN026910	ARMY 956 12/89 TINDAL	Unknown	1989-08-28	51	-14.522	132.4176
RN028781	R.A.A.F. BASE SITE 1 TINDAL	Production	1993-05-15	60	-14.4999	132.3954
RN028782	R.A.A.F. Base Site 2	Production	1993-05-17	67	-14.5014	132.3998
RN028783	R.A.A.F. BASE SITE 3 TINDAL	Production	1993-05-18	38	-14.526	132.3974
RN028784	R.A.A.F. BASE SITE 4 TINDAL	Production	1993-05-21	38	-14.5245	132.3978
RN028785	R.A.A.F. BASE SITE 5 TINDAL	Production	1993-05-22	45	-14.5077	132.3953
RN029429	Tindal R.A.A.F - NTG 1/94	Monitoring	1994-08-25	120.1	-14.5323	132.3591
RN029430	Tindal R.A.A.F - NTG 2/94	Monitoring	1994-08-30	127.3	-14.55	132.3511
RN029772	R.A.A.F. BASE TINDAL	Production	1994-07-30	46	-14.5177	132.4063
RN029773	RAAF BASE TINDAL	Production	1994-08-08	48	-14.5103	132.3841
RN035096	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-19	13	-14.5191	132.3844
RN035097	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-20	19	-14.5191	132.3844
RN035098	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-20	19	-14.5191	132.3844
RN035099	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-21	19	-14.5191	132.3844
RN035100	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-21	25	-14.5191	132.3844
RN035101	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-21	24	-14.5191	132.3844
RN035102	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2008-04-22	19	-14.5191	132.3844
RN035103	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-22	19	-14.5191	132.3844
RN035104	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-24	21	-14.5191	132.3844
RN035105	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-24	21	-14.5191	132.3844
RN035106	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-25	21	-14.5191	132.3844
RN035107	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-25	21	-14.5191	132.3844

RN035108	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-25	21	-14.5191	132.3844
RN035109	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-26	21	-14.5191	132.3844
RN035110	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-26	18.3	-14.5191	132.3844
RN035111	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-27	21	-14.5191	132.3844
RN035112	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-27	21	-14.5191	132.3844
RN035116	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-05-22	20	-14.5191	132.3844
RN035117	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-04-25	21	-14.5191	132.3844
RN035118	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-05-23	20	-14.5191	132.3844
RN035119	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-05-23	20	-14.5191	132.3844
RN035160	R.A.A.F. BASE TINDAL (E.R.M. AUST PTY LTD)	Investigation	2006-05-23	20	-14.5191	132.3844
RN037516	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-02-22	29	-14.5051	132.3899
RN037517	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-02-22	19	-14.5051	132.3899
RN037518	GHD R.A.A.F.Base Tindal (Katherine)	Investigation	2012-02-23	19	-14.5051	132.3899
RN037519	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-02-23	20	-14.5051	132.3899
RN037580	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-02-24	19	-14.5051	132.3899
RN037581	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-02-24	24	-14.5051	132.3899
RN037582	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-02-24	24	-14.5051	132.3899
RN037583	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-02-24	19	-14.5051	132.3899
RN037587	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-03-08	18	-14.5051	132.3899
RN037588	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-03-09	25	-14.5051	132.3899
RN037589	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-03-10	18	-14.5051	132.3899
RN037590	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-03-11	18	-14.5051	132.3899
RN037591	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-03-11	20	-14.5051	132.3899
RN037592	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-03-12	19	-14.5051	132.3899
RN037593	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-03-13	20	-14.5051	132.3899
RN037594	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-03-13	20	-14.5051	132.3899
RN037595	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-03-14	20	-14.5051	132.3899
RN037596	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-03-15	20	-14.5051	132.3899
RN037597	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-03-16	19	-14.5051	132.3899

RN037598	GHD R.A.A.F. Base Tindal (Katherine)	Investigation	2012-03-16	19	-14.5051	132.3899
RN038469	R.A.A.F. Base Tindal (Katherine)	Production	2015-09-26	36	-14.4963	132.4018
RN038509	Commonwealth of Australia (R.A.A.F. Base Tindal)	Production	2015-05-11	82.8	-14.4933	132.3956
RN040410	Coffey Services Australia Pty Ltd (Tindal)	Investigation	2017-08-10	20.2	-14.5307	132.3749
RN040411	Coffey Services Australia Pty Ltd (Tindal)	Investigation	2017-08-14	20	-14.5318	132.3754
RN040412	Coffey Services Australia Pty Ltd (Tindal)	Investigation	2017-08-15	20.5	-14.5323	132.3754
RN040477	Contracted by Coffey (Tindal R.A.A.F Base)	Investigation	2017-09-02	19	-14.5197	132.3781

ANNEXURE C

(Registered Private Bores in the Tindal Investigation Area ~ [29])

Bore No	Completion Date	Completion Depth	Latitude	Longitude
RN000150	1943-09-17	35.3	-14.4891	132.2551
RN000159			-14.4711	132.3074
RN000596	1952-11-21	36.6	-14.4738	132.3073
RN001442			-14.4382	132.2816
RN001443			-14.4994	132.249
RN001444			-14.4409	132.2693
RN001445			-14.4933	132.2541
RN001446			-14.4661	132.2639
RN001448			-14.45	132.2691
RN001449			-14.4876	132.2497
RN001999	1958-10-12	24.4	-14.4684	132.256
RN002522			-14.4675	132.3098
RN002888	1961-03-16	40.5	-14.4649	132.3138
RN002889	1961-03-20	30.7	-14.4647	132.3028
RN002890	1961-03-29	23.8	-14.4647	132.3028
RN002946	2016-11-08	0	-14.4735	132.2823
RN003908	1958-10-01	0	-14.467	132.27
RN003909			-14.4845	132.2562
RN004278	1964-03-31	30.5	-14.4747	132.343
RN004282	2001-12-06	0	-14.4646	132.3086
RN004420	1960-12-04	36.6	-14.483	132.3202
RN004523			-14.4832	132.3369
RN004524	1964-09-15	25.6	-14.4661	132.2665
RN004525	1964-09-16	31.7	-14.4661	132.2684
RN004859	1965-05-08	9.7	-14.4383	132.2731
RN004881	1979-12-05	46	-14.4766	132.2603

RN004886	1965-05-18	10.4	-14.4383	132.2731
RN004918	1965-05-22	11	-14.4383	132.2731
RN005154	1965-11-09	6	-14.4217	132.29
RN005155	1965-11-04	7.6	-14.4258	132.294
RN005853	1967-08-12	0	-14.4773	132.2971
RN005854	1967-08-12	30.5	-14.4795	132.2818
RN006238	1968-09-30	45.7	-14.5089	132.3139
RN006662	1969-08-08	40	-14.4596	132.3251
RN006884	1969-12-15	0	-14.4394	132.2957
RN006885	1969-12-09	0	-14.441	132.2799
RN006886	1969-12-03	0	-14.444	132.2838
RN006887	1969-12-05	0	-14.4443	132.2837
RN006959	1970-01-12	0	-14.4447	132.2845
RN006960	1970-01-16	0	-14.444	132.2838
RN006961	1970-01-15	0	-14.4387	132.2954
RN006970	1969-11-24	0	-14.4382	132.2816
RN006971	1970-01-23	0	-14.4391	132.2929
RN006983	1970-03-25	0	-14.4442	132.2852
RN007078	1970-05-07	45.7	-14.4684	132.3083
RN007244	1970-09-23	0	-14.4972	132.2531
RN007435	1970-12-09	30.5	-14.4643	132.2586
RN007437	1970-11-13	35	-14.468	132.2691
RN007788	1971-10-12	46	-14.4571	132.2675
RN007807	1970-12-10	0	-14.4443	132.2854
RN008239	1973-11-10	0	-14.5036	132.2271
RN008658	1974-05-06	67.1	-14.4994	132.249
RN008994			-14.4356	132.2791
RN009035	1977-07-01	44	-14.467	132.3102
RN009064	1977-05-19	0	-14.501	132.2279
RN009065	1977-05-20	0	-14.5011	132.2285
RN009066	1977-05-30	0	-14.5011	132.2276
RN009189	1977-11-02	0	-14.4203	132.2885

RN009190	1977-11-02	0	-14.4285	132.2912
RN009191	1977-11-03	0	-14.4285	132.2912
RN009192	1977-11-07	0	-14.4229	132.2792
RN009210	1977-10-16	33	-14.4687	132.2529
RN009212	1977-11-21	0	-14.4216	132.2797
RN009487	1978-11-12	0	-14.4752	132.2564
RN009488	1978-11-13	0	-14.477	132.2714
RN009489	1978-11-14	30	-14.4456	132.2604
RN009620			-14.4637	132.2671
RN020117	1979-12-11	30	-14.4683	132.2639
RN020118	1979-12-05	0	-14.4741	132.2612
RN020119	1979-12-09	18.5	-14.467	132.2705
RN020741	1981-04-02	24	-14.4611	132.2542
RN020789	1981-06-02	0	-14.4848	132.2481
RN021095	1981-08-12	0	-14.482	132.2421
RN021096	1981-08-09	0	-14.4819	132.2438
RN021097	1981-08-05	0	-14.4828	132.2459
RN021098	1981-08-03	0	-14.4837	132.247
RN021099	1981-07-25	0	-14.4419	132.2716
RN021257	1981-12-03	0	-14.4319	132.2915
RN021258	1981-12-14	0	-14.4319	132.2915
RN021260	1981-11-27	0	-14.4305	132.2901
RN021261	1982-01-07	0	-14.4295	132.2927
RN021262	1982-01-06	0	-14.4308	132.2928
RN021263	1982-01-05	0	-14.4307	132.2911
RN021320	1981-12-16	0	-14.4319	132.2854
RN021321	1982-01-30	0	-14.4311	132.2881
RN021413	1982-05-01	0	-14.489	132.244
RN021417	1982-12-22	0	-14.4882	132.2958
RN021418	1981-12-22	0	-14.4913	132.2962
RN021419	1982-01-25	0	-14.4937	132.2962

RN021420	1982-01-24	0	-14.4961	132.2961
RN021421	1982-01-23	0	-14.4983	132.2964
RN021422	1982-01-22	0	-14.501	132.2964
RN021423	1982-01-20	0	-14.5035	132.2965
RN021447	1982-04-29	29	-14.4667	132.2533
RN021448	1982-05-08	21	-14.4719	132.2519
RN021459	1982-05-24	43	-14.4311	132.2953
RN021463	1982-05-04	0	-14.4304	132.2941
RN021464	1982-05-08	0	-14.4347	132.2831
RN021676	1982-07-08	30	-14.4605	132.254
RN021695	1982-05-02	0	-14.4871	132.246
RN022025	1983-03-17	32	-14.4482	132.2711
RN022026	1983-03-13	27	-14.4737	132.257
RN022027	1983-03-15	30	-14.4531	132.27
RN022130	1983-06-28	42	-14.4551	132.2718
RN022326	1983-09-05	42	-14.4842	132.2479
RN022394	1983-10-21	123.6	-14.5039	132.2958
RN022397	1983-10-24	90	-14.4887	132.2554
RN022447	1983-09-17	33	-14.438	132.2563
RN022475	1983-11-19	30	-14.4781	132.2691
RN022478	1983-11-25	44.3	-14.4387	132.266
RN022486	1983-09-10	48	-14.4577	132.2564
RN022487	1983-11-25	80	-14.5084	132.238
RN022644	1983-11-23	21	-14.4637	132.2673
RN022660	1984-02-17	30	-14.4757	132.2537
RN022661	1984-02-28	37.5	-14.4813	132.2569
RN022662	1984-03-01	36	-14.4422	132.26
RN022772	1984-06-03	30	-14.4304	132.2935
RN022836	1984-06-20	30	-14.4654	132.2803
RN022837	1984-06-21	19	-14.4672	132.2796

RN023327	1984-07-22	30	-14.4402	132.2572
RN023638	1984-06-01	40	-14.4563	132.261
RN023639	1984-06-01	40	-14.455	132.2582
RN023640	1984-06-01	40	-14.4547	132.2647
RN023648	1985-01-22	57	-14.4867	132.2505
RN023854	1985-05-28	31	-14.4714	132.2895
RN023855	1985-05-29	30	-14.4723	132.2909
RN023990	1985-07-22	24	-14.4747	132.2488
RN024050	1985-09-16	45.5	-14.4644	132.2848
RN024051	1985-09-17	38	-14.4662	132.2838
RN024052	1985-12-15	40.8	-14.4644	132.2725
RN024097	1985-07-26	30	-14.4719	132.2615
RN024100	1985-07-25	30	-14.4867	132.324
RN024309	1986-11-27	31	-14.4806	132.3225
RN024329	1985-12-05	24	-14.4637	132.2796
RN024330	1985-11-28	0	-14.4875	132.249
RN024331	1985-11-27	37	-14.4803	132.2401
RN024368	1986-02-03	24	-14.485	132.3178
RN024369	1986-02-03	18	-14.4845	132.3153
RN024370	1986-02-05	24	-14.4862	132.3225
RN024373	1985-11-27	18	-14.48	132.2929
RN024374	1985-11-27	28	-14.4809	132.2942
RN024421	1986-03-14	24	-14.5028	132.2286
RN024454	1985-07-24	0	-14.5005	132.2288
RN024724	1986-08-21	30	-14.4394	132.2577
RN024819	1987-05-20	40.8	-14.4663	132.2837
RN024868	1986-11-12	30	-14.4833	132.2422
RN024869	1986-11-07	30	-14.4309	132.2863
RN024882	1986-11-10	50	-14.503	132.3327
RN024939			-14.4808	132.3133
RN024951			-14.4896	132.2378

RN025013			-14.4899	132.2459
RN025015			-14.4817	132.2411
RN025016			-14.4802	132.2376
RN025079	1987-04-01	30	-14.4903	132.2358
RN025080	1987-04-02	30	-14.4912	132.2354
RN025082	1987-04-09	30	-14.4852	132.3155
RN025124	1987-05-25	38.5	-14.466	132.284
RN025389	1987-11-05	0	-14.4301	132.2913
RN025430			-14.4841	132.3209
RN025452	1987-11-10	17	-14.4849	132.296
RN025477			-14.4853	132.316
RN025478			-14.4874	132.3229
RN025479			-14.4873	132.324
RN025480			-14.4868	132.3189
RN025481			-14.4854	132.3197
RN025482			-14.4878	132.3211
RN025483			-14.4822	132.31
RN025484	1984-04-01	30	-14.4331	132.3028
RN025485			-14.4761	132.2959
RN025495			-14.4821	132.3116
RN025633	1988-02-02	40	-14.4888	132.3265
RN025638	1988-04-08	30	-14.462	132.277
RN025639	1988-05-07	34	-14.4864	132.2559
RN025642			-14.4945	132.2956
RN025643			-14.4845	132.3088
RN025645	1985-02-01	0	-14.4915	132.3273
RN025768	1988-05-23	30	-14.4676	132.2715
RN025769	1988-06-30	0	-14.4833	132.2455
RN025800	1988-06-29	0	-14.482	132.2455
RN026085			-14.4682	132.2715
RN026086	1988-10-14	34	-14.4789	132.2377

RN026088	1988-10-15	34	-14.4758	132.241
RN026146	1989-03-03	46	-14.4322	132.2838
RN026169	1988-11-07	82	-14.4549	132.2581
RN026193	1988-11-11	36	-14.4509	132.2705
RN026359	1989-06-02	77	-14.4949	132.2507
RN026712	1989-10-10	0	-14.486	132.3109
RN026829	1992-11-12	31	-14.4817	132.2475
RN027307	2018-01-09	0	-14.4691	132.2626
RN027539	1990-12-16	30	-14.4794	132.2424
RN027669	1991-08-22	36	-14.482	132.244
RN027707	1992-08-28	30	-14.5012	132.3362
RN027709	1992-08-25	42	-14.4765	132.2393
RN027754	1991-06-13	27	-14.4894	132.3285
RN028003	1992-01-10	33	-14.4782	132.2907
RN028301	1992-08-26	24	-14.482	132.308
RN028306	1992-09-25	30	-14.4399	132.2797
RN028348	1992-11-12	44	-14.4722	132.2702
RN028505	1992-12-18	37	-14.4885	132.3006
RN028774			-14.4893	132.241
RN028787	1993-08-06	31	-14.4373	132.2744
RN028881			-14.4873	132.3131
RN028900	1993-10-01	45	-14.4671	132.3102
RN029217	1993-07-21	45	-14.4639	132.2605
RN029231	1993-04-15	48	-14.4892	132.2402
RN029232	1993-04-16	48	-14.4894	132.2413
RN029233	1993-04-17	50	-14.4895	132.2424
RN029243	1994-03-16	30	-14.4984	132.2964
RN029762	1994-11-20	40	-14.492	132.2344
RN029774	1994-07-27	32	-14.4823	132.3067
RN029775	1994-07-21	36	-14.4904	132.2992
RN029783	1994-11-11	36	-14.4827	132.2959

RN029953	1995-05-07	24.2	-14.4407	132.2823
RN029956	1995-06-06	25.2	-14.4415	132.2816
RN030355	1995-12-21	30	-14.4876	132.3276
RN030531	1996-03-26	24	-14.494	132.2955
RN030532	1996-03-29	21.6	-14.4917	132.2955
RN030648	1996-02-20	61	-14.4887	132.2392
RN030649	1996-02-23	31	-14.4873	132.3265
RN030650	1996-01-15	31	-14.4783	132.2394
RN030662	1996-01-13	40	-14.4691	132.2951
RN030791	1996-12-09	30	-14.4813	132.2484
RN030794	1997-06-05	23.5	-14.4908	132.3285
RN030857	1996-06-22	32	-14.4821	132.305
RN030864	1996-07-25	30	-14.4827	132.2479
RN030904	1996-10-10	45	-14.4252	132.2733
RN030905	1996-10-11	31	-14.426	132.2723
RN030907	1996-10-18	31	-14.4777	132.2388
RN031066	1997-07-09	30	-14.4802	132.2559
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RN031865	1998-11-18	39	-14.4424	132.2729
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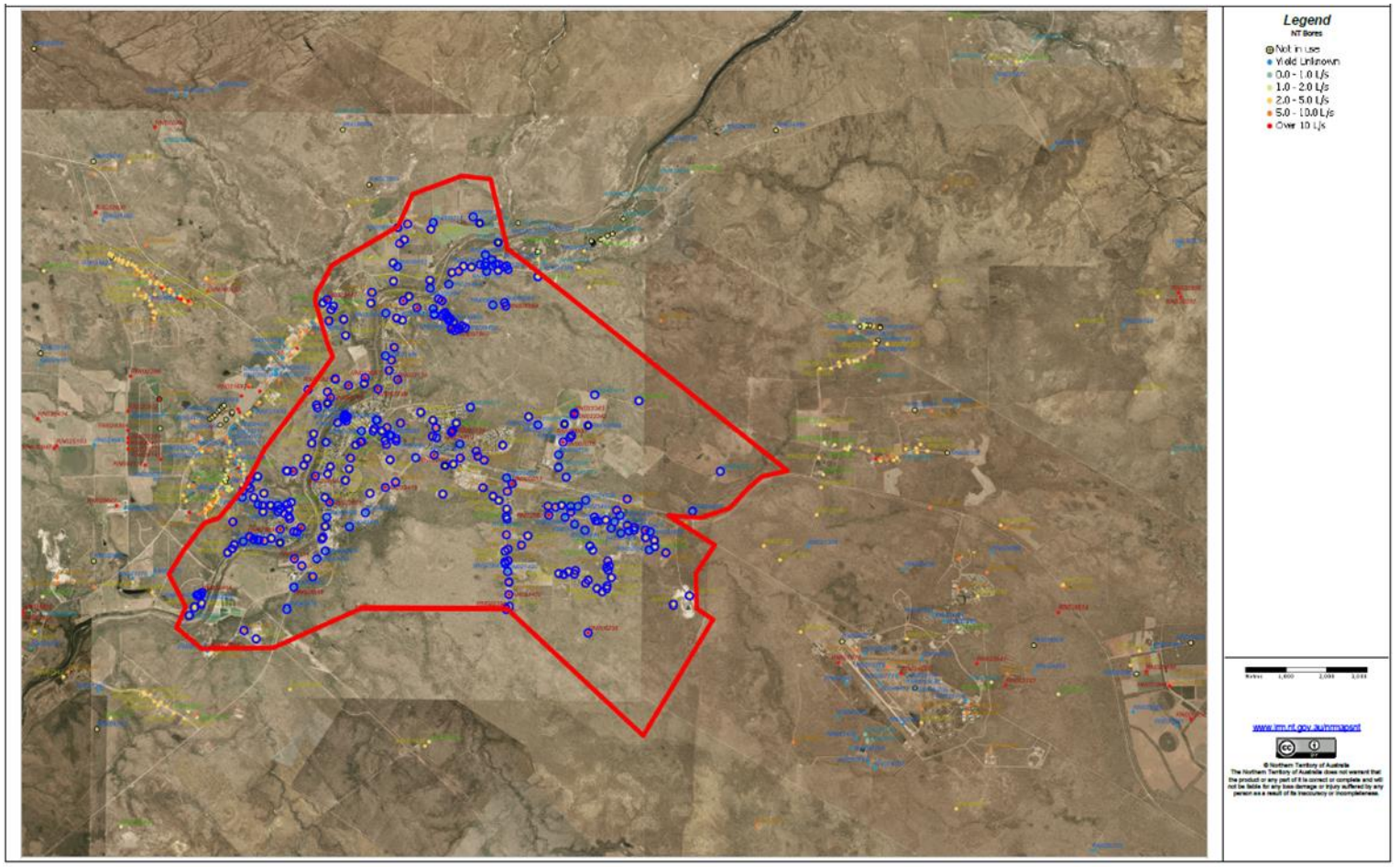
RN031875	1999-01-24	22	-14.4318	132.294
RN031876	1999-01-27	25	-14.4952	132.3179
RN032178	2000-03-27	21	-14.4704	132.2892

RN032320	1999-08-12	24	-14.4966	132.3109
RN032325	1999-11-10	25	-14.4979	132.3139
RN032327	1999-11-26	0	-14.4601	132.2564
RN032328	1999-12-07	32	-14.4573	132.2521
RN032407	1999-10-19	29	-14.4387	132.2554
RN032524	2000-06-04	48.5	-14.4854	132.2355
RN032681	2000-06-20	35.5	-14.4921	132.331
RN032695	2000-10-11	30	-14.4308	132.2959
RN032923	2001-05-01	33	-14.4689	132.2694
RN032924	2001-05-02	22	-14.4712	132.2799
RN033019	2001-07-29	102	-14.4589	132.2571
RN033021	2001-08-16	110	-14.5052	132.2259
RN033028	2001-09-19	33	-14.4916	132.3149
RN033342	2001-11-29	42.1	-14.4625	132.3108
RN033343	2001-12-01	40.8	-14.4622	132.3109
RN033559	2002-09-02	26	-14.4301	132.2709
RN033703	2003-04-03	22.3	-14.4986	132.3133
RN033704	2003-04-03	23.3	-14.4958	132.3111
RN033755	2003-10-24	34	-14.4218	132.2741
RN033756	2003-10-26	26	-14.4411	132.2819
RN033757	1991-10-16	33	-14.4718	132.2857
RN033767			-14.4688	132.2856
RN034043	2004-04-14	31	-14.4428	132.2842
RN034044	2008-03-14	43	-14.4991	132.3181
RN034047	2004-04-23	25	-14.442	132.2832
RN034052	2004-02-07	10.7	-14.463	132.2605
RN034053	2004-02-06	12	-14.4628	132.2604
RN034054	2004-02-06	12	-14.4629	132.2604
RN034055	2004-02-07	12	-14.463	132.2608
RN034380	2004-10-21	15	-14.4631	132.2607
RN034381	2004-10-19	15	-14.4625	132.2603

RN034382	2004-10-20	15	-14.4627	132.2602
RN034383	2004-10-20	15	-14.4634	132.2603
RN034384	2004-10-20	15	-14.4631	132.26
RN034523	2005-03-24	37	-14.4938	132.3182
RN034775	2005-09-13	30	-14.4958	132.3183
RN034929	2005-11-29	0	-14.442	132.2832
RN034950	2005-11-29	43	-14.442	132.2832
RN035113	2006-05-09	30.5	-14.4364	132.2662
RN035114	2006-05-17	70.9	-14.4933	132.2491
RN035242	2006-06-21	31	-14.4961	132.3095
RN035468	2006-11-29	26	-14.4967	132.3085
RN035611	2007-01-12	35	-14.4949	132.3186
RN035612	2007-01-13	43	-14.4997	132.3158
RN035991	2007-11-12	24	-14.4844	132.2958
RN036079	2008-03-11	31	-14.5004	132.317
RN036150	2008-08-09	49	-14.463	132.3007
RN036299	2008-11-19	36	-14.4341	132.2709
RN036540	2009-05-14	28	-14.4965	132.3074
RN037410	2011-09-14	85.6	-14.4745	132.2474
RN037411	2011-09-17	55.1	-14.4746	132.2476
RN037412	2011-09-21	84.8	-14.4339	132.279
RN037413	2011-09-26	64.7	-14.4559	132.2645
RN037668	2012-12-17	42	-14.4424	132.283
RN037695	2011-12-10	26	-14.4974	132.319
RN037696	2011-12-08	31	-14.4906	132.3142
RN037697	2011-12-16	19	-14.4413	132.2799
RN038182	2015-03-05	54	-14.4309	132.2718
RN038183	2015-04-08	70	-14.4226	132.2719
RN038190	2013-05-24	43.1	-14.4685	132.2636
RN038490	2015-10-27	49	-14.444	132.2868
RN039059	2016-09-01	52	-14.4436	132.2861

RN039317	2015-10-25	26.5	-14.4734	132.2512
RN039727	2016-08-31	20.6	-14.4653	132.2695
RN039866	1980-01-01	0	-14.4421	132.2835
RN039981	2016-11-10	33.2	-14.4731	132.2841
RN040364	2018-04-20	32	-14.4794	132.2657
RN040407	2017-10-18	17.8	-14.4671	132.2701
RN040413	2017-08-16	20.5	-14.4759	132.309
RN040414	2017-08-17	20.5	-14.4583	132.3153
RN040415	2017-08-23	20	-14.461	132.2879
RN040416	2017-08-24	19.5	-14.4675	132.2804
RN040417	2017-08-17	19.5	-14.4718	132.2759
RN040472	2017-08-29	20	-14.4835	132.2648
RN040473	2017-08-30	18	-14.4865	132.2612
RN040474	2017-08-31	24.4	-14.4315	132.2962
RN040475	2017-09-01	19.3	-14.4917	132.2559
RN040476	2017-09-01	20	-14.504	132.2474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Over 10 L/s
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ANNEXURE D

D1. Prior to 1987, the Commonwealth knew or ought to have known of the following publications:

(a) Air Force Weapons Laboratory. (1974). *Treatability of Aqueous Film-Forming Foams Used for Firefighting*. New Mexico: Air Force Weapons Laboratory;

(b) Krasner, L. Breen, D. and Fitzgerald, P. (1975). *Fire Protection of Large Airforce Hangars.* Norwood: Air Force Weapons Laboratory;

(c) Naval Facilities Engineering Command. (1980). *Aircraft Fire and Rescue Training Facilities*. Alexandria: Naval Facilities Engineering Command;

(d) Saam, R., Rakowski, P. and Aydlett, G. (1980). *Treatability of Fire Fighting School Wastewaters: US Navy Compliance with POTW Pretreatment Requirements.* Virginia: US Navy;

(e) US Navy, Air Force and Army. (1980). *Membrane Treatment of Aqueous Film Forming Foam (AFFF) Wastes for Recovery of Its Active Ingredients*. Port Hueneme: Georgia Institute of Technology;

(f) Alger, R. and Johnson, W. (1981). *Evaluation of the North Island A/C Crash/Rescue Training Facility*. Alexandria: Naval Facilities Engineering Command;

(g) Booz, Allen & Hamilton Inc. (1981). *Fire Fighter Trainer Environmental Considerations Phase II.* Bethesda: Advanced Technology Systems;

(h) Mitchell, J. (1985). *Engineering Technical Letter*, *86-8 Aqueous Film Forming Foam Waste Discharge Retention and Disposal.* Washington: Department of the Air Force*;*

(i) Salazar, S. (1985). *Toxicity of Aqueous Film Forming Foams to Marine Organisms: Literature Review and Biological Assessment*. San Diego: Naval Ocean Systems Center;

(j) Thurman, E., Barber, L. and LeBlanc, D. (1986). Movement and fate of detergents in groundwater: a field study. *Journal of Contaminant Hydrology*, 1(1-2);

(k) Binovi, R., Tetla, R., Slavich, F. (1987). *Wastewater Characterization and Hazardous Waste Survey.* Texas: USAF Occupational and Environmental Health Laboratory;

(l) Binovi, R., Tetla, R., Slavich, F. (1987). *Wastewater Characterization and Hazardous Waste Survey at George AFB CA.* Texas: USAF Occupational and Environmental Health Laboratory; and

(m) Department of Defence. (1987). *RAAF Base Tindal Environmental Management Plan and Environmental Contingency Plan*. Kinhill Engineers.

D2. Prior to 1999, the Commonwealth knew or ought to have known of the following publications (in addition to the publications referred to in D1 above):

(a) Dharmavaram, S., Knowlton, D., Heflin, C. and Donahue, B. (1988). *Hazardous Waste Minimization Assessment*. Champaign: US Army Construction Engineering Research Laboratory;

(b) Slavich, F. and Atterbery, C. (1988). *Wastewater and Hazardous Waste Survey, England AFB, LA.* Texas: US Air Force Occupational Health Laboratory;

(c) Brittain, J. (1991). *Foams: The Environmental Challenge*. Reims: Second International Oil and Petrochemical Forum;

(d) Garcia, C. (1991). *Water Supply and Service Training.* Washington: Firehouse;

(e) Andrews, R. (1992). *The Environmental Impact of Firefighting Foam Concentrates.* Strategic Analysis of Fire Prevention Programs. Texas: National Fire Academy;

(f) Andrews, R. (1992). *The Environmental Impact of Firefighting Foams.* Industrial Fire Safety. Texas: Refinery Terminal Fire Company;

(g) Brittain, J. (1992) Minimizing the Impact of Foam on the Environment is Now a Challenge. *Fire*, 85(1047);

(h) Holemann, H. (1994). *Environmental Problems Caused by Firefighting Agents.* Wuppertal: International Association for Fire Safety Science;

(i) Wilkinson, M. (1994). *A Review of Fire Fighting Foams to Identify Priorities for EQS Development.* Almondsbury: National Rivers Authority;

(j) Darwin, R., Ottman, R., Norman, E., Gott, J. and Hanauska, C. (1995). Foam and the Environment: a Delicate Balance. *NFPA Journal*, (67);

(k) Stern, J., Routley, J. (1996). *Class A Foam for Structural Fire Fighting.* Emmitsburg: National Fire Data Center;

(l) Lattimer, B., Verdonik, D., Beltel, J. and Hanauska, C. (1997). *Development of Detection Method for Aqueous Film Forming Foam.* Baltimore: United States Air Force Laboratory;

(m) US Army Corps of Engineers. (1997). *Containment and Disposal of Aqueous Film Forming Foam Solution.* Washington: US Army Corps of Engineers;

(n) US National Fire Protection Association. (1997). Foam Environmental Issues. Quincy: NFPA;

(o) Latham, T. (1998). Safety and Spill Control. *Hazardous Materials Management*, 10(2); and

(p) Moody, C. and Field, J. (1999). Determination of Perfluorocarboxylates in Groundwater Impacted by Firefighting Activity. *Environmental Science and Technology*, 33(16).

D3. By no later than 16 May 2000, the Commonwealth knew of the following publications (in addition to the publications of which it knew which it knew or ought to have known referred to in D1 and D2 above):

(a) Environmental Protection Agency (2000). *EPA and 3M Announce Phase Out of PFOS*;

(b) Email received by employees of the Commonwealth of Australia (mark.hyman@ea.gov.au and vickersc@worksafe.gov.au) from Charles Auer of United States Environmental Protection on 16 May 2000 at 11.17AM] regarding Phaseout of PFOS; and

(c) 3M News (2000). *3M Phasing Out Some of its Specialty Materials*.

D4. Between 16 May 2000 and 2008, the Commonwealth knew or ought to have known of the following publications (in addition to the publications of which it knew or ought to have known referred to in D1, D2 and D3 above):

(a) The Federal Register. (2000). *Perfluorooctyl Sulfonates; Proposed Significant New Use Rules.* Washington: The Daily Journal of the United States Government;

(b) "Joint Meeting of the Chemicals Committee and the Working Party on Chemicals, Pesticides and Biotechnology. (2002). *Hazard Assessment of Perfluorooctane Sulfonate and its Salts*. Crystal City: Organisation for Economic Co-Operation and Development;

(c) National Industrial Chemicals Notification and Assessment Scheme. (2002). *NICNAS Alert No. 1 – Existing Chemicals – Perfluorooctanyl sulfonate* (PFOS). Sydney: NICNAS;

(d) National Industrial Chemicals Notification and Assessment Scheme. (2003). *NICNAS Alert No.2 – Existing Chemicals – Perfluorooctane sulfonate (PFOS)*. Brisbane: NICNAS;

(e) Defence Corporate Services Infrastructure Centre. (2003). *Environmental Issues Associated with Defence use of Aqueous Film Forming Foam (AFFF).* Environmental Stewardship, Environment, Heritage and Risk Branch;

(f) Defence Corporate Services Infrastructure Centre. (2003). *RAAF Base Williamtown Fire Training Pit*. Williamtown: Department of Defence;

(g) Directorate of Environmental Impact Management. (2007*). Environmental Guidelines for Management of Fire Fighting Aqueous Film Forming Foam (AFFF) Products*. Canberra: Department of Defence; and

(h) Department of Defence. (2008). *Aqueous Film Forming Foam (AFFF) Procurement and Usage Interim Policy.* Canberra: Department of Defence.

SCHEDULE OF DEFINED TERMS

Certificate of lawyer

I Joshua Aylward certify to the Court that, in relation to the statement of claim filed on behalf of the Applicant, the factual and legal material available to me at present provides a proper basis for each allegation in the pleading.

Date: ~~2 August 2018~~ 26 April 2019

Signed by Joshua Aylward
Lawyer for the Applicants