

|  |
|--|
| <p>3. [REDACTED] Factual letters grouped by logical areas, will be issued for all sample results to the PCG. The complete data sets for most areas should be received from the laboratories mid June, with some data sets expected late June. The datasets will then be verified by GHD and factual letters issued over the remaining June period to early July.</p> <p>4. [REDACTED] Figures for each area and group will be produced to accompany factual letters. These figures will group the data by trophic type, showing plants, vertebrates &amp; invertebrates separately colour coded with results concentrations.</p> <p>5. [REDACTED] Highlighted the factual letters and figures are currently being produced and when issued will provide a good representation of the sample location, type and PFAS concentrations recorded by area.</p> <p>6. <b>Comments Requested</b></p> <ul style="list-style-type: none"> <li>• [REDACTED] Are results all coming together or staggered as groups of data? [REDACTED] A staggered verified dataset by area will be issued as results are received from the labs:</li> <li>• [REDACTED] and [REDACTED] requested schedule for issue of factual result letters</li> <li>• [REDACTED] Is there any requirement to offer advice to the local base or community based on results received so far? [REDACTED] GHD is waiting on complete dataset results to be received and interpreted against the conceptual site model before any assessment is made.</li> <li>• [REDACTED] It is fair to say that some advice will likely be issued for some of the tributaries. [REDACTED] Agreed this is a fair assumption.</li> </ul> |
| <p><b>Future Stages - Human Health and Ecological Risk Assessment (HHERA)</b></p> <p>7. [REDACTED] The conceptual site model has been completed as part of the initial studies and development of the SAQP. When the dataset is developed to a point where it can be relied upon, the risk assessments will commence.</p> <p>8. [REDACTED] In relation to groundwater modelling, GHD have selected twelve surface water monitoring locations which are currently being monitored to understand the flux of ground and surface water movements from the source areas to the receptor areas. Hydraulic conductivity testing has occurred for the shallow and deeper aquifers, which will also inform the groundwater model. It is expected a draft groundwater modelling report may be available late August.</p> <p>9. <b>Comments Requested</b></p> <ul style="list-style-type: none"> <li>• Nil</li> </ul>  |
| <p><b>Site Auditor Update</b></p> <p>10. [REDACTED] Awaiting results and data.</p> <p>11. <b>Comments Requested</b></p> <ul style="list-style-type: none"> <li>• Nil</li> </ul>  |
| <p><b>Stakeholder Engagement</b></p> <p>12. [REDACTED] Upcoming events include a meeting with WBACC board to discuss the results that have been received up to the 11 May 2018. This discussion will include some figures to assist in the discussion of results. A second meeting with WBACC has also been scheduled on the 26 June to discuss results that are still to be received. A BBQ with the community is also being planned after the board meeting to discuss and manage the communication of the investigation results.</p> <p>13. [REDACTED] Results letters to WBACC and JBTA for the testing of garden/vegetable will also be prepared and delivered in the near future.</p> <p>14. <b>Comments Requested</b></p> <ul style="list-style-type: none"> <li>• [REDACTED] Noted the recent health advice from the expert panel to government regarding PFAS, which does not change the overall message, but provides additional detail.</li> <li>• [REDACTED] Noted this particular community may not always receive such messaging and therefore requires additional effort to communicate and address the communities concerns.</li> <li>• [REDACTED] commented that the regulatory agencies will be expected to keep the community apprised, in collaboration with Defence, of any forthcoming advisories stemming out of the investigation..</li> <li>• [REDACTED] Requested to be informed of how discussions with WBACC are received and recommended Booderee National Parks are engaged with respect to tourism visiting the park.</li> </ul>  |
| <p><b>Community Enquiries</b></p> <p>15. No activity or calls to the Community Information line or email inbox, noting the interactions with the WBACC board and support staff is ongoing.</p>   |

| <b>Risks and Issues and Other Business</b>   |
|--|
| <p>16. <b>Comments Requested</b></p> <ul style="list-style-type: none"> <li>• ( ) Confidence that the drinking water has no detects for PFAS. ( ) Potable water has been tested at the source, Lake Windermere, treatment plant and its storage tanks with no detects. These locations have recently been retested to confirm 2017 results.</li> <li>• ( ) All campgrounds, Wreck Bay Village, Defence sites and all other areas in JBT are supplied by the potable supply, with Western leasehold areas near Christians Minde the only areas not connected to JBT potable supply.</li> <li>• ( ) Key risk is maintaining the collaborative relationship with the community, especially now that results are beginning to become available where values are elevated.</li> <li>• ( ) Agency requirements to release advice prior to informing the community.</li> <li>• ( ) NSW EPA will support ACT EPA with recommendations. ( ) ACT will provide DIRDC (JBTA) with recommendations for advice. ( ) JBTA understand the importance of community engagement prior to announcements.</li> <li>• ( ) Challenges associated with the remediation and contamination management plan. Discussion on the PFAS Management Area Plan will be included in the next PCG.</li> </ul> |
|  |
| Meeting Close - 14:50 PM   |
| <b>Actions</b>   |
| Nil  |



|            |            |
|------------|------------|
| [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] |

|                          |  |
|--------------------------|--|
| <b>Agenda</b>            |  |
| Introductions            |  |
| Investigation Progress   | <ul style="list-style-type: none"> <li>- <b>Detailed Site Investigation (DSI)</b></li> <li>- SAQP &amp; Conceptual Site Model (CSM)</li> <li>- Factual memorandums</li> </ul>              |
| Future Stages (schedule) | <ul style="list-style-type: none"> <li>- Human Health and Ecological Risk Assessment (HHERA)</li> <li>- Numerical Groundwater Model</li> <li>- PFAS Management Area Plan (PMAP)</li> </ul> |
| Site Auditor             | <ul style="list-style-type: none"> <li>- Update from site auditor</li> </ul>   |
| Stakeholder Engagement   | <ul style="list-style-type: none"> <li>- Meetings and briefs</li> <li>- Community enquiries</li> </ul>   |
| Risks and Issues         |  |
| Other Business           |  |
| Close                    |  |

**White, Sarah-Jane (Health)**

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**From:** Hudson, Lyndell (Health)  
**Sent:** Friday, 15 June 2018 4:20 PM  
**To:** [REDACTED]  
**Subject:** FW: Request for biota consumption information - Wreck Bay Community [SEC=UNCLASSIFIED]

Hi Michael

Have you had a chance to review my request for consumption data I sent to the Wreck Bay Aboriginal Community Council?

Regards,



Lyndell Hudson | Senior Manager Environment and Radiation Safety  
 Health Protection Service | [health.act.gov.au](http://health.act.gov.au)  
 Phone (02) 6205 0956 | Mobile [REDACTED]

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**From:** [REDACTED]  
**Sent:** Friday, 8 June 2018 6:09 AM  
**To:** Hudson, Lyndell (Health) <Lyndell.Hudson@act.gov.au>  
**Subject:** FW: Request for biota consumption information - Wreck Bay Community [SEC=UNCLASSIFIED]

Hi Lyndell,

I have forwarded your email of 5/6/18 (below) to Mr [REDACTED] from GHD who is working with Defence on this contamination matter.

His email address is:- [REDACTED]@ghd.com

Kind Regards,

[REDACTED]  
 Wreck Bay Aboriginal Community Council

---

**From:** [REDACTED]  
**Sent:** Tuesday, 5 June 2018 1:43 PM  
**To:** [REDACTED]  
**Subject:** FW: Request for biota consumption information - Wreck Bay Community [SEC=UNCLASSIFIED]

Hi Team,

Please see below an email I received from Health ACT Government regarding some studies relating to the PFAS/Environmental investigation.

Can either of you please respond.

Kind regards,

[REDACTED]  
 [REDACTED]



Wreck Bay Aboriginal Community Council

[wbacc.gov.au](mailto:wbacc.gov.au)

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You must not disclose, copy or rely on any part of this correspondence if you are not the intended recipient.

**From:** Hudson, Lyndell (Health) [<mailto:Lyndell.Hudson@act.gov.au>]

**Sent:** Tuesday, 5 June 2018 1:27 PM

**To:** [REDACTED] >

**Subject:** Request for biota consumption information - Wreck Bay Community [SEC=UNCLASSIFIED]

Hello [REDACTED]

Thank you for speaking with me today and for offering to pass on my email.

As discussed biota samples have been collected within Wreck Bay as part of the PFAS investigation. To accurately calculate dietary advice, additional information is needed regarding the consumption of sampled species by the local Wreck Bay community.

Would it be possible for advice to be provided regarding if the samples species are regularly consumed, parts of the organism that are eaten and where the species are usually caught?

The main aquatic organisms within the sample include:

- A) Fish (Bream, Mullet, Whitebait, Leatherjacket, Bonito, Flathead)
- B) Crustacea (Shrimp, Yabby)
- C) Bivalves (oysters)
- D) Gastropods (mud whelk and abalone)
- E) Echinoderm (sea urchin)
- F) Polychaetes (marine worms)
- G) Aquatic plants (Macrophyte, Kelp, Ribbonweed, Neptunes Necklace)

Can you please provide as much information as possible on (regarding the samples species above):

Fish

- What part of the fish is typically eaten (the whole fish or only fillets)?
- How much fish is typically eaten per serve?
- What percentage of fish is consumed as part of the community's diet?
- Where is fish mainly sources/caught (are they caught in the bay)?

Crustacea, bivalves, gastropods, echinoderms, polychaetes

- What percentage of the diets consists of these species?

- Where are these species usually caught?
- Are shrimp, urchins, oysters and abalone sourced from the bay?

#### Aquatic Plants

- Are aquatic plants eaten and used as a food source?
- If aquatic plants are eaten, what type and percentage is consumed as part of the community's diet?

Terrestrial organisms captured in the sampling include Fox and Rabbit

- Are these mammals eaten as part of the community's diet?
  - If so, what portions are eaten?
  - What percentage of the diet consists of these mammals?

Any information that can be provided would greatly assist in being able to provide dietary advice and progress with the investigation.

Please email or call if you have any questions.

Regards,



Lyndell Hudson | Senior Manager Environment and Radiation Safety  
Health Protection Service | [health.act.gov.au](http://health.act.gov.au)  
Phone (02) 6205 0956 | Mobile [REDACTED]

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**Stedman, Andrew (Health)**

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**From:** [REDACTED]  
**Sent:** Monday, 18 June 2018 2:29 PM  
**To:** [REDACTED]; Clapham, David; Chester, Heath; [REDACTED]; Stedman, Andrew (Health); [REDACTED]  
**Subject:** JBRF PFAS Investigation PCG - Factual letter 17 - Lake McKenzie Biota  
**Attachments:** 2126171\_LET\_factual letter 17\_ June 2018.pdf  
**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Dear PCG,

Please find attached factual results letter 17 – for biota samples collected from the Lake Mckenzie area. A reminder for the PCG meeting tomorrow at 2 pm with dial in details below.

Regards,

[REDACTED]

**GHD**

[REDACTED]ghd.com  
 Level 2, 57 Graham Street (PO Box 621) Nowra NSW 2541 Australia | <http://www.ghd.com/>  
[Water](#) | [Energy & Resources](#) | [Environment](#) | [Property & Buildings](#) | [Transportation](#)

[Join WebEx meeting](#)

Meeting number: [REDACTED]

[Join by phone](#)

Call-in toll-free number: [REDACTED] (Australia)

Call-in number: [REDACTED] (Australia)

[Show global numbers](#)

Participant Pin Code: [REDACTED]

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15 June 2018

██████████  
██████████ – JBRF & HMAS Creswell  
PFAS Investigation and Management Branch  
Department of Defence

2126171\_LET\_factual letter 17

Dear Darron

**JBRF & HMAS Creswell- Environmental investigation: Preliminary sampling results  
Aquatic and Terrestrial ecology sampling results from the Lake McKenzie area  
(processed by 08 June 2018)**

**1 Introduction**

GHD Pty Ltd (GHD), on behalf of the Department of Defence (Defence), is undertaking the Environmental Investigation in and around Jervis Bay Range Facility (JBRF) and HMAS Creswell, within the Jervis Bay Territory (JBT) (the Site). This report includes data that has been collected and processed as at 08 June 2018, from freshwater aquatic and terrestrial sampling programs from the Lake McKenzie area.

It should be noted that these data are provided for information purposes only and that the use of these data should take into account factors that have been used to develop the conceptual site model (as presented in GHD's Sampling, Analysis and Quality Plan).

GHD will continue to provide results from further sampling, following the processing of the data.

**2 Purpose**

The purpose of the provision of preliminary data is to allow Defence and other stakeholders, including NSW and ACT Governments to view the data prior to its use in the technical reports for the Environmental Investigations.

**3 Laboratory Analysis**

Upon collection, the samples were sent under Chain of Custody (CoC) conditions to the following National Association of Testing Authorities (NATA) accredited laboratories:

- ALS Environmental, 277-289 Woodpark Road Smithfield, NSW, 2164
- National Measurement Institute (NMI), 105 Delhi Road, North Ryde, NSW 2113

**4 Preliminary Results Tables**

The preliminary results are provided in the attached tables.

The data is not for public distribution.

## 5 Closure

GHD trusts the above information is suitable for Defence requirements.

Yours Sincerely  
GHD Pty Ltd



[REDACTED]  
[REDACTED]  
[REDACTED]

### Enclosures:

Figure 1: Biota Sample Locations

Figure 2A: Concentrations of PFHxS + PFOS (Sum) – Aquatic Plants

Figure 2B: Concentrations of PFHxS + PFOS (Sum) – Aquatic Invertebrates

Figure 2C: Concentrations of PFHxS + PFOS (Sum) – Aquatic Vertebrates

Figure 2D: Concentrations of PFHxS + PFOS (Sum) – Terrestrial Plants

Figure 2E: Concentrations of PFHxS + PFOS (Sum) – Terrestrial Invertebrates

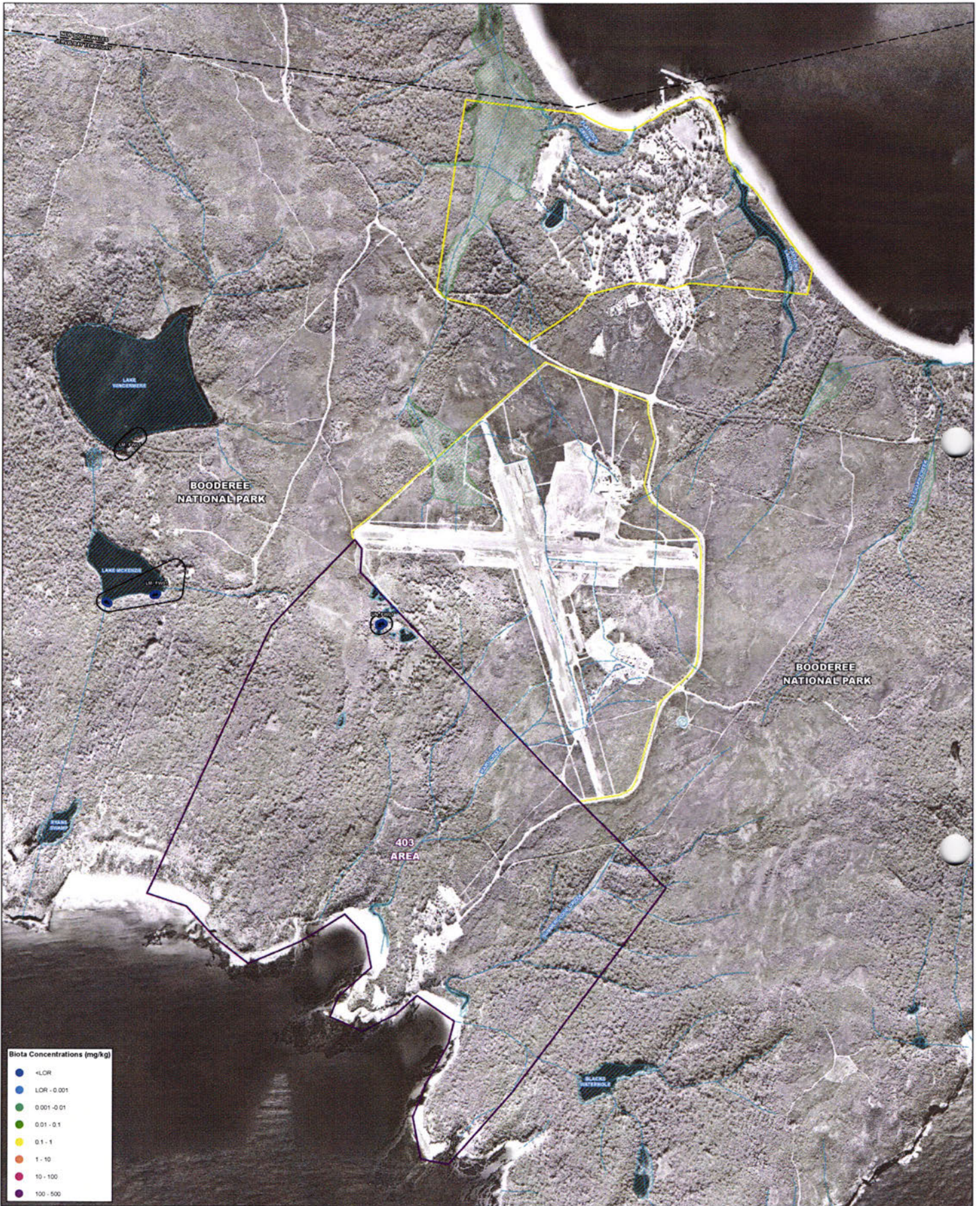
Table 1: Freshwater Aquatic Biota Results – Lake McKenzie

Table 2: Terrestrial Biota Results – Lake McKenzie



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|  |  |  |                        |   |
|--|--|--|------------------------|---|
| <p>Paper Size A3</p> <p>0 345 690 1,380 2,070</p> <p>Metres</p> <p>Map Projection: Transverse Mercator<br/>Horizontal Datum: GDA 1994<br/>Grid: GDA 1994 MGA Zone 56</p> |  | <p><b>LEGEND</b></p> <ul style="list-style-type: none"> <li><span style="border-bottom: 1px dashed yellow; width: 20px; display: inline-block;"></span> Investigation Area Extent</li> <li><span style="border: 1px solid black; width: 20px; height: 10px; display: inline-block;"></span> Jervis Bay Range Facility</li> <li><span style="border: 1px solid black; width: 20px; height: 10px; display: inline-block;"></span> HMAS Creswell</li> <li><span style="background-color: lightblue; width: 20px; height: 10px; display: inline-block;"></span> Water Bodies</li> <li><span style="border: 1px solid blue; width: 20px; height: 10px; display: inline-block;"></span> Drainage Areas</li> <li><span style="border-bottom: 1px solid blue; width: 20px; display: inline-block;"></span> Major Waterways</li> <li><span style="border-bottom: 1px dashed blue; width: 20px; display: inline-block;"></span> Minor Waterways / Drainage Lines</li> <li><span style="color: blue; font-size: 1.2em;">+</span> Minor Waterways / Drainage Lines (Defence)</li> <li><span style="color: green; font-size: 1.2em;">+</span> Estuarine Species Sampling Location</li> <li><span style="color: blue; font-size: 1.2em;">+</span> Freshwater Species Sampling Location</li> <li><span style="color: green; font-size: 1.2em;">+</span> Terrestrial Species Sampling Location</li> <li><span style="border: 1px dashed purple; width: 20px; height: 10px; display: inline-block;"></span> Marine Species Sampling Area (Approximate)</li> </ul> |                        | <p>Department of Defence</p> <p>Job Number   21-26171<br/>Revision   A<br/>Date   27 Apr 2018</p> |
| <p><b>Biota Sample Locations</b></p>   |  |  | <p><b>Figure 1</b></p> |   |

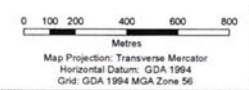


**Biota Concentrations (mg/kg)**

- <LOR
- LOR - 0.001
- 0.001 - 0.01
- 0.01 - 0.1
- 0.1 - 1
- 1 - 10
- 10 - 100
- 100 - 500

**LEGEND**

- ▭ HMAS Creswell / JBRF Boundary
- ▭ HMAS Creswell
- ▭ 403 Area
- ▭ Ecology Sampling Area
- ▭ Water Bodies
- ▭ Drainage Areas
- ▬ Major Waterways
- Collected Plant Samples

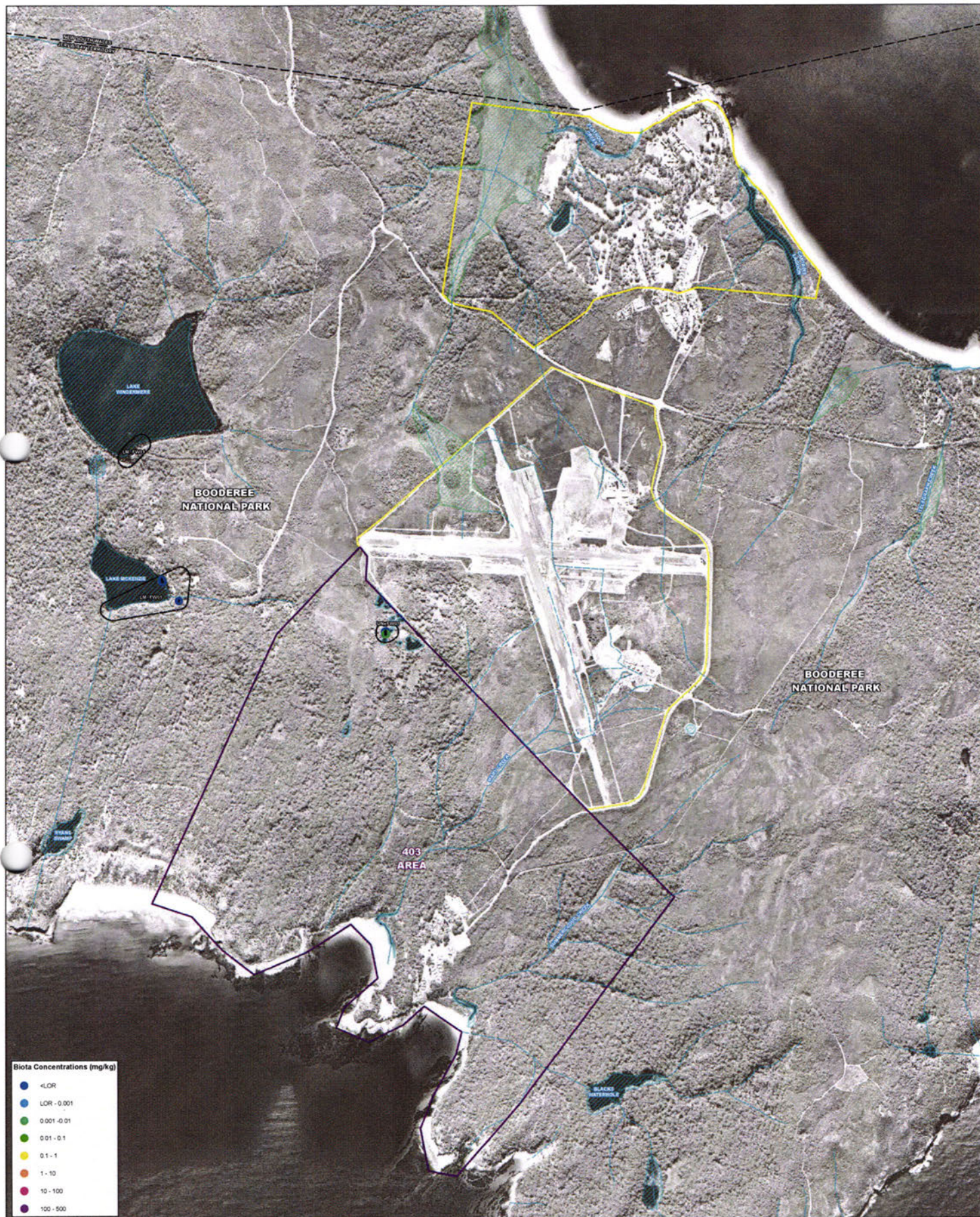


Department of Defence  
 HMAS Creswell and Jervis Bay Range Facility  
**Freshwater and Estuarine Biota Concentrations of  
 PFHxS + PFOS (Sum) - Plants**

Job Number 21-26171  
 Revision A  
 Date 14 Jun 2018

**Figure 2A**

N:\AUSydney\Projects\2106171\GIS\Maps\Deliverables\Concentrations\21\_26171\_2027\_Biota\_FW\_Plant\_Concentrations.mxd  
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 Data source: Imagery - Land and Property Information (2017); Streets, Waterways, Contours - NSW LPI 2015 DTDB; Contours - NSW LPI 2016. Created by mwelber  
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**Biota Concentrations (mg/kg)**

- <LOR
- LOR - 0.001
- 0.001 - 0.01
- 0.01 - 0.1
- 0.1 - 1
- 1 - 10
- 10 - 100
- 100 - 500

**LEGEND**

- HMAS Creswell / JBRF Boundary
- HMAS Creswell
- 403 Area
- Ecology Sampling Area
- Water Bodies
- Drainage Areas
- Major Waterways
- Collected Invertebrate Samples

0 100 200 400 600 800  
Metres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



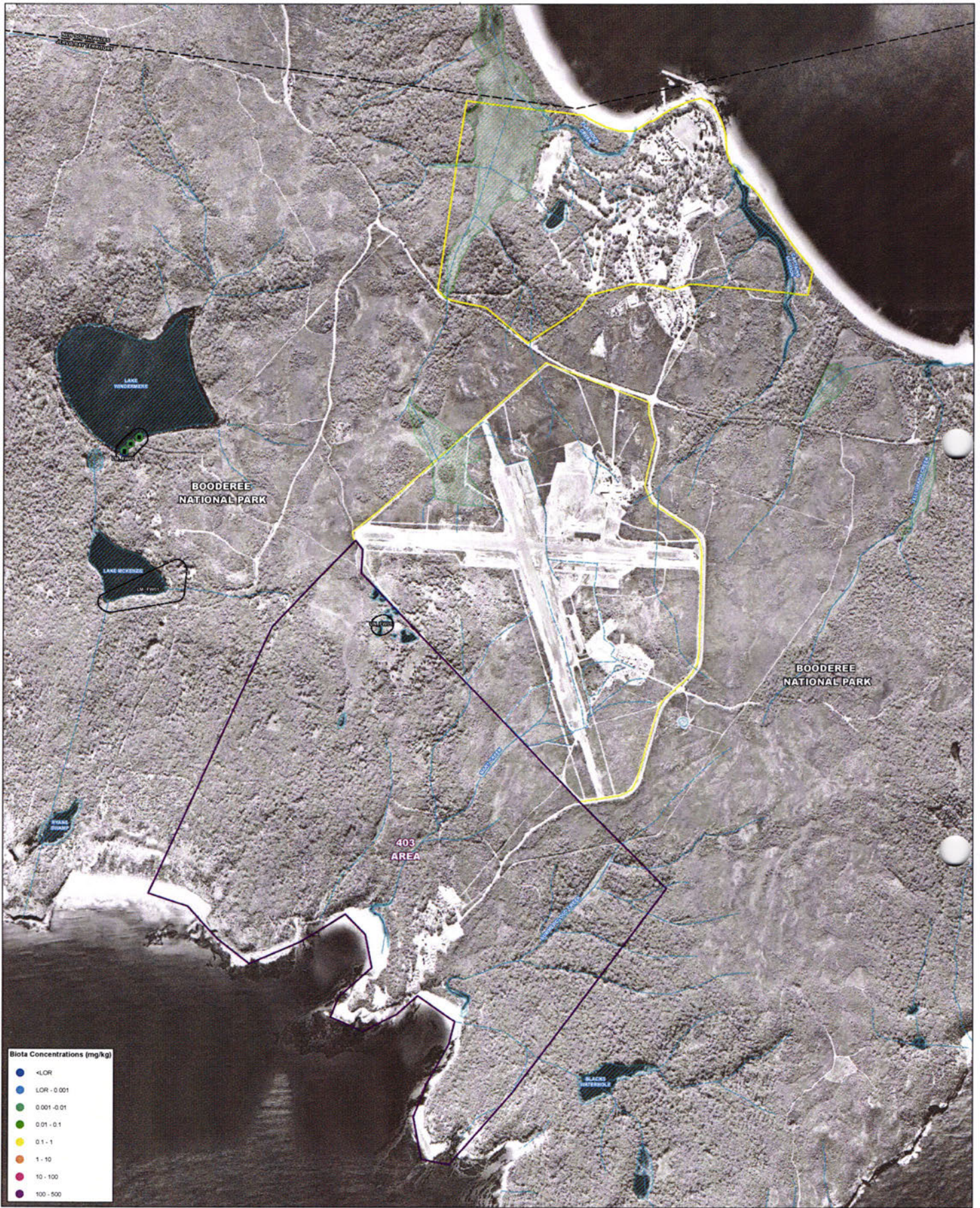
Department of Defence  
HMAS Creswell and Jervis Bay Range Facility

Job Number | 21-26171  
Revision | A  
Date | 14 Jun 2018

**Freshwater and Estuarine Biota Concentrations of  
PFHxS + PFOS (Sum) - Invertebrates** **Figure 2B**

N:\AU\Sydney\Projects\2126171\GIS\Maps\Deliverables\Concentrations\21\_26171\_Z026\_Biota\_FW\_Invertebrate\_Concentrations.mxd  
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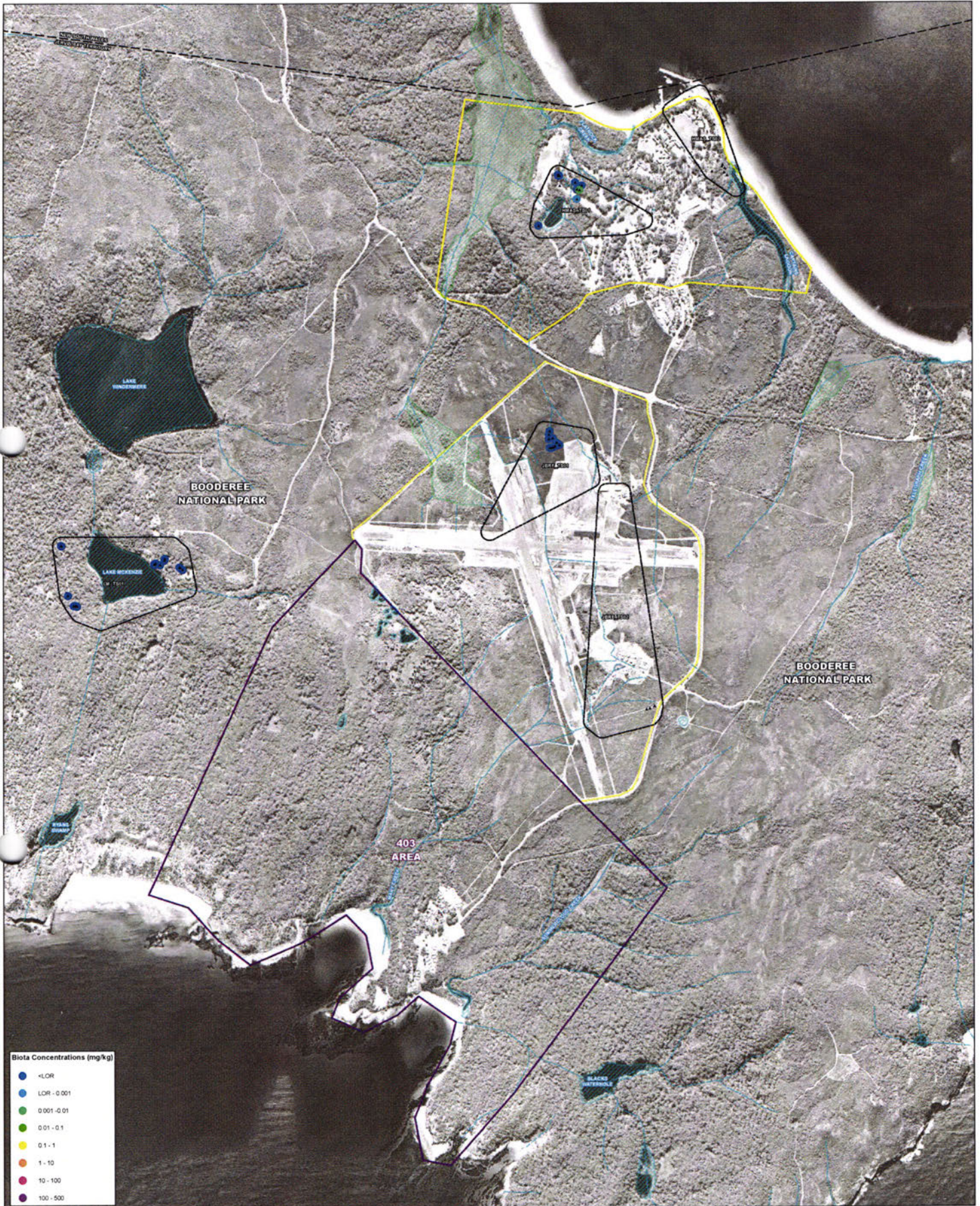
0 100 200 400 600 800 Metres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56

**GHD** nearmap.com

Department of Defence  
HMAS Creswell and Jervis Bay Range Facility  
Freshwater and Estuarine Biota Concentrations of  
PFHxS + PFOS (Sum) - Vertebrates

Job Number 21-26171  
Revision A  
Date 14 Jun 2018



**LEGEND**

- HMAS Creswell / JBRF Boundary
- Major Waterways
- Ecology Sampling Area
- Collected Plant Samples
- Water Bodies
- Drainage Areas

0 100 200 400 600 800  
Metres

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56

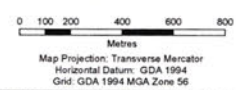


Department of Defence  
HMAS Creswell and Jervis Bay Range Facility  
**Terrestrial Biota Concentrations of  
PFHxS + PFOS (Sum) - Plants**

Job Number 21-26171  
Revision A  
Date 14 Jun 2018

Figure 2D

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Data source: Imagery - Land and Property Information (2017), Streets, Waterways, Contours - NSW LPI 2015 DTDR, Contours - NSW LPI 2016. Created by mwber  
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Department of Defence  
HMAS Creswell and Jervis Bay Range Facility  
**Terrestrial Biota Concentrations of  
PFHxS + PFOS (Sum) - Invertebrates**

Job Number | 21-26171  
Revision | A  
Date | 14 Jun 2018

**Figure 2E**

N:\AL\Sydney\Projects\2126171\GIS\Map\Deliverables\Concentration\21\_26171\_2023\_Biota\_TS\_Invertebrate\_Concentrations.mxd  
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Data source: Imagery - Land and Property Information (2017); Streets, Waterways, Contours - NSW LPI 2015 OTDB; Contours - NSW LPI 2016. Created by mwbeber



Table 1  
Aquatic Biota Results Lake McKenzie

| Date | Field ID | Sample Type | Matrix Type | Matrix Description | PRAS  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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**Australian Government**  
**Department of Defence**  
 Estate and Infrastructure Group

**PFAS Investigation and Management**  
**Monthly Report- Jervis Bay Range Facility**

05 05 2018

BP3-02-B091

26 Brindabella Circuit  
 Brindabella Business Park  
 PO Box 7925 Canberra BC 2610

**Re: Jervis Bay Range Facility Environmental Investigation – Progress Report April 2018**

## 1.0 Introduction

The following progress report has been prepared by GHD Pty Ltd to provide a summary of activities for the Comprehensive Investigation of PFAS Site Conditions at Jervis Bay Range Facility, HMAS Creswell and surrounds for the period between 1 April 2018 and 30 April 2018.

## 2.0 Critical items

### 2.1 New items

- GHD sampling teams complete on site and offsite biota, soil and water sampling for all locations and demobilise 22/04/18 which includes:
  - Installation of all offsite groundwater wells and sampling, with one well (MC\_MW01) abandoned as no water encountered @ 10M below ground level.
  - Installation and sampling of deep groundwater wells LW\_MW01 (@35m) and southern well LW\_MW02 (@30m including 24.6m of sand).
  - Soil, sediment and surface water sampling (surface water and / or sediment not present at all the offsite locations, with samples collected wherever possible).
  - Survey and sampling of all planned and available wells, with reference well (MW036) unable to be located at Bherwerre radar station.
  - Data download of majority of previously installed data loggers, with MW022 (Wreck bay road) and E\_MW04 (Creswell) unable to be recovered as data loggers have been stolen/removed. Purchase and replacement of loggers installed 16/4/18.
  - Sampling of Aecom water quality sampling locations:
  - Biota sampling of Mary Creek, Summercloud Creek and surrounds, with some locations altered from SAQP to accommodate cultural sensitivity.
- GHD identify the SAQP sampling goals that could not be achieved in some instances due to limited biota availability and or dry water systems. A SAQP variance table will be issued for review to indicate where sampling goals have been achieved, not achieved or changed to suit field conditions.

- Inspection of the two proposed automatic surface water monitoring sites identified the proposed flow monitoring techniques were unsuitable for the locations as limited access, no significant flows and no communications reception existed in these areas. To enable development of the ground water model twelve stream locations were selected for manual monitoring. Each location was surveyed, to map the stream profile and physical reference points installed. Each of the stream locations will be observed numerous times and water flows recorded to develop the groundwater flow model.
- GHD conduct residential garden vegetable sampling with the following properties accessed to collect samples:
  - 73 Village Road Jervis Bay: Citrus fruits collected x 5 from 2 trees; soil sample
  - 69 Village Road, Jervis Bay: vegetables from vegetable garden; soil sample
  - 95 Village Road Jervis Bay: collected oranges from citrus trees; soil sample
  - 6 Ngadjung Close Wreck Bay Village collected small tomatoes growing up through soil under the clothes line
  - 5 Ngadjung Close Wreck Bay 1 egg
  - 14 Dhugan Close Wreck Bay Lilli Pillies and soil sample
  - 79 Village Road Jervis Bay Village; Carrots and soil sample
  - Jervis Bay Village school, Dykes Avenue Jervis Bay Lilli Pillies and soil sample
- On request GHD provide raw sample results to Defence for EPA review. GHD note the results provided on 12/04/18 had not been validated prior to issue and have no supporting QA sample results.
- GHD conduct water and sediment sampling of priority locations, in response to first significant rain event on 30 April, with 58mm recorded at JBRF rain gauge.
- GHD request for information regarding JBRF asbestos remediation conducted February 2018.
- GHD and Defence begin planning for WBACC board meeting to present preliminary sample results.
- GHD finalise sewer system investigation (Rev 1) and issue to Defence and JBTA.

## 2.2 Previously raised items to be addressed

- GHD factual letters to report results to EPA and stakeholders to be developed for the following categories & areas, with accompanying overarching area map.
  1. Biota - HMAS Creswell/JBRF Terrestrial
  2. Biota - Marine locations all
  3. Biota - Flat Rock & Captains lagoon
  4. Biota - Unnamed Creek
  5. Biota - Summercloud Creek & Mary Creek
  6. Soil, sediment, surface water and groundwater – normal
  7. Soil, sediment, surface water and groundwater –Wet weather
  8. Biota – fruit/vegetable residential

## 3.0 Project progress

- The following items have been completed this reporting period:

- Completion of on site biota sampling (JBRF, Creswell, Flat Rock Creek and Captains Lagoon).
- Completion of 403 and BNP investigation sampling including installation of wells, soil, sediment, surface water and biota sampling, under supervision of WBACC cultural supervisors.

### 3.1 Project impacts

- Rain event timing and low levels of surface water flows throughout Jervis Bay and wider area.
- Biota availability and lack of water at sampling sites identified for biota sampling

### 3.2 Project meetings

Project meetings held this reporting period are presented in Table 1.

**Table 1: Summary of meetings held during the April reporting period**

| Meeting date                          | Meeting title   | Participants  | Minutes circulated |
|---------------------------------------|---|---|--------------------|
| Recurring Wednesday's                 | Weekly meetings   | JBRF project team – Defence, GHD & Site auditor       | Yes                |
| 17/04/2018                            | PCG Monthly   | Defence, GHD, Site auditor, Agencies and stakeholders | Yes                |
| Recurring Mondays concluding 16/04/18 | Investigation planning, cultural access and team safety | WBACC supervisor, GHD and subcontractors              | No                 |

### 3.3 Project deliverables submitted this period

Project deliverables submitted during this reporting period are presented in Table 2.

**Table 2: Project deliverables submitted during the April reporting period**

| Document status | Title   | Date submitted |
|-----------------|---|----------------|
| Final           | 2126171-REP-REV1_Sewerage Network Investigation Report. | 04/04/2018     |

### 3.4 Project Milestones

The following project milestones were achieved in the April reporting period:

- Completion of on site Biota sampling and additional soil, sediment, water sampling, excluding rain event sampling
- Completion of off site (BNP and 403) biota sampling, soil, sediment, water sampling, excluding rain event sampling and infill biota sampling

## 4.0 Project Forecast

The project schedule is presented in the enclosed project schedule, dated 28 March 2018.

### 4.1 Schedule tracking forecast

- The project is currently on schedule (25 March 2018), with potential to be impacted by the requirement to analyse secondary biota samples. The requirement to analyse secondary samples, is triggered by review of primary sample results yet to be received.

#### 4.2 Project deliverables expected next period

- Review on site biota results and identify secondary sample results.
- Issue of factual letter 13 – onsite terrestrial biota sampling results.

#### 4.3 Technical Advisor forecast

The Technical Advisor's achievements and planned activities are presented in Table 3.

**Table 3: Technical Advisor achievements and key activities during the April reporting period**

| Scope item                                   | Achieved to date | Planned for next month |
|--|------------------|------------------------|
| Monitor Project progress and provide comment | Yes              | ongoing                |

#### 5.0 Community enquiries

In this reporting period:

- No community independent enquiries were received via the Community Hotline (1800 987 618) and email ([Jervisbay@ghd.com.au](mailto:Jervisbay@ghd.com.au))
- There are 0 outstanding stakeholder enquires

#### 6.0 Interaction with Government

Meetings and communications with government stakeholders are summarised in Table 4.

**Table 4: Summary of interactions with Government during the April reporting period**

| Meeting date | Meeting title          | Participants  | Minutes circulated |
|--------------|------------------------|---|--------------------|
| 17/04/2018   | PCG 13 Monthly meeting | Defence, GHD, Site auditor, Agencies and stakeholders | Yes                |

#### 9.0 Requests for information from Defence

- All relevant reports and information associated with JBRF environmental assessments and contamination investigations have been provided to GHD by Defence.
- Background reports detailing soil movements or activities associated with asbestos remediation adjacent RANSSSS have not been provided at this time.

#### 10.0 Other Matters

- Nil

Yours sincerely

[Redacted Signature]

CC:

**Enclosures:** Project Schedule - Dated 28/04/2018

### Project Milestone schedule, dated 28 March 2018

| Item   | Start      | Finish     |                              |
|--|------------|------------|------------------------------|
| SAQP - REV 3   | 30/03/2017 | 14/02/2018 |                              |
| Off Site Access  | 20/11/2017 | 01/03/2018 | WBACC/Booderee/GHD/Defence   |
| Approval to conduct Off-Site Groundwater Bore Installation, Soil, Sediment, surface water & Biota sampling | 20/11/2017 | 01/03/2018 | WBACC                        |
| DSI  | 5/04/2017  | 28/08/2017 | GHD                          |
| On-Site Groundwater Bore Installation, Soil, Sediment and surface water sampling (Round 1).                | 5/04/2017  | 09/05/2017 | GHD                          |
| On-Site Groundwater Bore, Sediment and surface water sampling (Round 2).                                   | TBC        | TBC        | GHD (rain event required)    |
| Off-Site Groundwater Bore Installation, Soil, Sediment and surface water sampling (Round 1)                | 19/03/18   | 13/04/2018 | GHD                          |
| Off-Site Groundwater Bore, Sediment and surface water sampling (Round 2)                                   | TBC        | TBC        | GHD (rain event required)    |
| Biota sampling   | 15/02/2018 | 10/05/2018 | GHD                          |
| Laboratory analysis  | 12/02/18   | 18/05/18   | ALS (rain event samples TBA) |
| Laboratory analysis of on hold samples (if required)   | TBC        | TBC        |                              |
| Defence, GHD, Auditor results analysis workshop  | 21/05/18   | 21/05/18   |                              |
|  |            |            |                              |
| DSI Reporting  | 28/05/2018 | 27/08/2018 | GHD/Defence/Agency/WBACC     |
| DSI Report preparation   | 28/05/2018 | 29/06/2018 | GHD                          |
| Defence and Auditor review of Draft DSI Report   | 02/07/2018 | 13/07/2018 | Defence/Auditor              |
| Update of Draft DSI Report   | 16/07/2018 | 23/07/2018 | GHD                          |
| ACT & NSW State Agency review of DSI Report  | 24/07/2018 | 06/08/2018 | Agency                       |
| WBACC Review of DSI report (If required)?  | TBC        | TBC        | WBACC                        |
| Finalise DSI Report  | 07/08/2018 | 27/08/2018 | GHD/Defence/Auditor          |
| Groundwater Numerical Modelling  | 30/03/18   | 27/09/18   |                              |



|   |            |            |                              |
|---|------------|------------|------------------------------|
| Data capture, modelling, calibration and sensitivity analysis           | 14/04/18   | 16/08/18   | GHD                          |
| Draft groundwater modelling report Preparation                          | 17/08/18   | 30/08/18   | GHD                          |
| Defence and Auditor review of Draft GWM Report                          | 31/08/18   | 13/09/18   | GHD/Defence/Auditor          |
| Finalisation of groundwater modelling report                            | 14/09/18   | 27/09/18   |                              |
| Human Health and ecological risk assessment                             | 24/08/2017 | 30/09/2018 | GHD/Defence/Agency/WBACC     |
| HHERA Plan draft  | 24/08/2017 | 01/09/2017 | GHD                          |
| Defence and Auditor review of Draft HHERA Plan                          | 01/09/2017 | 15/10/2017 | Defence/Auditor              |
| ACT & NSW State Agency review of HHERA Plan                             | 20/11/2017 | 01/12/2017 | Agency                       |
| Risk Workshop   | 16/07/2018 | 16/07/2018 | GHD                          |
| HHERA Draft report Preparation  | 17/07/2018 | 10/09/2018 | GHD                          |
| Defence and Auditor review of Draft HHERA report                        | 11/09/2018 | 24/09/2018 | Defence/Auditor              |
| Update of Draft HHERA report  | 24/09/2018 | 08/10/2018 | GHD                          |
| Agency review of HHERA  | 09/10/2018 | 22/10/2018 | Agency                       |
| WBACC Review of HHERA report (If required)?                             | TBC        | TBC        | WBACC                        |
| Finalise HHERA Report   | 23/10/2018 | 12/11/2018 | GHD/Defence/Auditor          |
| PFAS Area Management Plan (PMAP)  | 18/07/2018 | 12/11/2018 | GHD/Defence/Auditor          |
| PMP Template Workshop   | 28/09/2018 | 28/09/2018 | GHD/Defence/Auditor          |
| PMP Draft Report preparation  | 01/10/2018 | 19/10/2018 | GHD                          |
| Defence and Auditor review of Draft PMP report                          | 22/10/2018 | 02/11/2018 | GHD/Defence/Auditor          |
| PMP report workshop   | 15/10/2018 | 15/10/2018 | GHD/Defence/Auditor          |
| Finalise PMP Report   | 30/10/2018 | 12/11/2018 | GHD/Defence                  |
| Community Information Sessions  | 21/03/2017 | 25/05/2018 |                              |
| Community Information Session 3   | TBC        | TBC        | GHD/Defence/Agency/Community |
| Community Information Session 4<br>(Post DSI/HHERA report finalisation) | 14/11/2018 | 14/11/2018 | GHD/Defence/Agency/Community |
| Stakeholder engagement reporting  | 19/10/2018 | 31/12/2018 | GHD/Defence                  |
| Finalise stakeholder engagement reports                                 | 05/12/2018 | 11/12/2018 | GHD/Defence                  |
| Meetings with Agencies  | TBC        | TBC        | GHD/Defence/Agency           |
| Project Close out   | 12/12/2018 | 16/01/2019 | GHD/Defence                  |





**Australian Government**  
**Department of Defence**  
Estate and Infrastructure Group

**PFAS Investigation and Management**  
**Monthly Report- Jervis Bay Range Facility**

20 03 2018

BP3-02-B091

26 Brindabella Circuit  
Brindabella Business Park  
PO Box 7925 Canberra BC 2610

**Re: Jervis Bay Range Facility Environmental Investigation – Progress Report March 2018**

## **1.0 Introduction**

The following progress report has been prepared by GHD Pty Ltd to provide a summary of activities for the Comprehensive Investigation of PFAS Site Conditions at Jervis Bay Range Facility, HMAS Creswell and surrounds for the period between 28 February 2018 and 31 March 2018.

## **2.0 Critical items**

### **2.1 New items**

- Contract change proposal CCP05 issued by defence to extend the program to January 2019.
- Informal community BBQ requested by WBACC board to promote further discussion of investigation and potential cultural Sunday 11<sup>th</sup> March attendees: (AK), (MU), (TS), (BJ) and Captain Huxtable.
- Authorisation for off site works in National Park, Jervis Bay Village and Wreck Bay Village, Received February 2018.
- National Parks issue permit access biological resources for non-commercial research in BNP.
- Original permit for soil water sampling within BNP expires, resubmitted and approved.
- Aquatic and terrestrial sampling teams 90% completion of the first phase of the on site biota sampling program.
- Aquatic sampling teams commence marine biota sampling of Jervis Bay.
- Defence provided Aecom SNSW Water Quality Monitoring (WQM) results for comparison against DSI results. GHD agree to include specific WQM monitoring locations in DSI.
- Defence, auditor and GHD agree to submit factual result letters for biota, soil and water sampling by area when all results received and verified to provide a better method of

information transfer via a single factual letter to avoid splitting of results over multiple letter issues.

- Issue of Draft Sewage Network Investigation Report, 7 March 2018.
- Inception meeting between GHD sampling team and WBACC cultural supervisors held 19/03/18 at WBACC hall, attendees:
  - WBACC – Russell Brown, Rhonda Brown, Kristy Brown and Maxine Brown
  - GHD – (MU) (DH) (DM) (BC) plus five GHD sampling team members
  - Service locator and three drilling subcontractors
- GHD and WBACC supervisors conduct weekly planning meetings to workshop cultural supervision, site access and safety toolbox talks.
- Off site sampling with support of cultural supervisors commences 19 March 2018 including installation of groundwater wells, biota, soil, sediment and surface water.
- WBACC cultural supervisors advise some sample locations identified in the SAQP, will require relocation to respect cultural sensitivities and the limited physical access.
- Waste storage GHD currently have 7 x 210 L drums of waste from on site drilling stored at JBRF and request Defence provide approval to store off site waste currently being accumulated at JBRF until the waste disposal plan is finalised.
- Contract change proposal CCP06 issued by defence to support cultural monitoring of investigation.

## 2.2 Previously raised items to be addressed

- No further correspondence or interactions received from WBACC advisers (UON), Global Centre for Environmental Remediation (GCER).

## 3.0 Project progress

- The following items have been completed this reporting period:
  - 95% completion of on site biota sampling (JBRF, Creswell, Flatrock Creek and Captains Lagoon).
  - 30% completion of 403 and BNP investigation sampling including installation of wells, soil, sediment, surface water and biota sampling, under supervision of WBACC cultural supervisors.
  - Physical completion of sewer system investigation, with issue of draft report.

## 3.1 Project impacts

- Cultural supervisors advise unknown cultural sensitivities associated with planned sample locations, which require investigation prior to sampling activities. GHD sampling teams have developed a good working relationship with WBACC and are working around the delays accessing specific sampling sites
- Limited rainfall has fallen or is forecast impacting rain event sampling program.
- Limited biota availability identified at some sampling site as result of limited rainfall and dry sampling sites.

### 3.2 Project meetings

Project meetings held this reporting period are presented in Table 1.

**Table 1: Summary of meetings held during the March reporting period**

| Meeting date          | Meeting title   | Participants  | Minutes circulated |
|-----------------------|---|---|--------------------|
| Recurring Wednesday's | Weekly meetings   | JBRF project team – Defence, GHD & Site auditor       | Yes                |
| 20/03/2018            | PCG Monthly   | Defence, GHD, Site auditor, Agencies and stakeholders | Yes                |
| 19/03/2018            | 403 land investigation inception meeting                | WBACC, GHD and GHD subcontractors                     | No                 |
| Recurring Mondays     | Investigation planning, cultural access and team safety | WBACC supervisor, GHD and subcontractors              | No                 |

### 3.3 Project deliverables submitted this period

Project deliverables submitted during this reporting period are presented in Table 2.

**Table 2: Project deliverables submitted during the March reporting period**

| Document status | Title   | Date submitted |
|-----------------|---|----------------|
| Draft           | 2126171-REP-REV0_Sewerage network investigation summary | 07/03/18       |

### 3.4 Project Milestones

The following project milestones were achieved in the March reporting period:

- 95% completion of on site Biota sampling and additional soil, sediment, water sampling.
- 30% completion of off site (BNP and 403) biota sampling and additional soil, sediment, water sampling.
- 95% completion of sewer system investigation

### 4.0 Project Forecast

The project schedule is presented in the enclosed project schedule, dated 28 March 2018.

#### 4.1 Schedule tracking forecast

- The project schedule originally impacted by the inability to access the Wreck Bay community land has been revised with investigation and reporting completion programmed for January 2019.

#### 4.2 Project deliverables expected next period

- Complete on site biota and additional sampling.
- Progress 403 and BNP investigation activities (Biota, Soil, Sediment, Groundwater wells and surface water)
- Finalise sewer system investigation report.

### 4.3 Technical Advisor forecast

The Technical Advisor's achievements and planned activities are presented in Table 3.

**Table 3: Technical Advisor achievements and key activities during the March reporting period**

| Scope item                                   | Achieved to date | Planned for next month |
|--|------------------|------------------------|
| Monitor Project progress and provide comment | Yes              | ongoing                |

### 5.0 Community enquiries

In this reporting period:

- No community independent enquiries were received via the Community Hotline (1800 987 618) and email ([Jervisbay@ghd.com.au](mailto:Jervisbay@ghd.com.au))
- There are 0 outstanding stakeholder enquires

### 6.0 Interaction with Government

Meetings and communications with government stakeholders are summarised in Table 4.

**Table 4: Summary of interactions with Government during the March reporting period**

| Meeting date | Meeting title          | Participants  | Minutes circulated |
|--------------|------------------------|---|--------------------|
| 20/03/2018   | PCG 12 Monthly meeting | Defence, GHD, Site auditor, Agencies and stakeholders | Yes                |

### 9.0 Requests for information from Defence

- All relevant reports and information associated with JBRF environmental assessments and contamination investigations have been provided to GHD by Defence.

### 10.0 Other Matters

- Nil

Yours sincerely



CC:

**Enclosures:** Project Milestone Schedule - Dated 28/03/2018

### Project Milestone schedule, dated 28 March 2018

| Item   | Start      | Finish     |                              |
|--|------------|------------|------------------------------|
| SAQP - REV 3   | 30/03/2017 | 14/02/2018 |                              |
| Off Site Access  | 20/11/2017 | 01/03/2018 | WBACC/Booderee/GHD/Defence   |
| Approval to conduct Off-Site Groundwater Bore Installation, Soil, Sediment, surface water & Biota sampling | 20/11/2017 | 01/03/2018 | WBACC                        |
| DSI  | 5/04/2017  | 28/08/2017 | GHD                          |
| On-Site Groundwater Bore Installation, Soil, Sediment and surface water sampling (Round 1).                | 5/04/2017  | 09/05/2017 | GHD                          |
| On-Site Groundwater Bore, Sediment and surface water sampling (Round 2).                                   | TBC        | TBC        | GHD (rain event required)    |
| Off-Site Groundwater Bore Installation, Soil, Sediment and surface water sampling (Round 1)                | 19/03/18   | 13/04/2018 | GHD                          |
| Off-Site Groundwater Bore, Sediment and surface water sampling (Round 2)                                   | TBC        | TBC        | GHD (rain event required)    |
| Biota sampling   | 15/02/2018 | 10/05/2018 | GHD                          |
| Laboratory analysis  | 12/02/18   | 18/05/18   | ALS (rain event samples TBA) |
| Laboratory analysis of on hold samples (if required)   | TBC        | TBC        |                              |
| Defence, GHD, Auditor results analysis workshop  | 21/05/18   | 21/05/18   |                              |
|  |            |            |                              |
| DSI Reporting  | 28/05/2018 | 27/08/2018 | GHD/Defence/Agency/WBACC     |
| DSI Report preparation   | 28/05/2018 | 29/06/2018 | GHD                          |
| Defence and Auditor review of Draft DSI Report   | 02/07/2018 | 13/07/2018 | Defence/Auditor              |
| Update of Draft DSI Report   | 16/07/2018 | 23/07/2018 | GHD                          |
| ACT & NSW State Agency review of DSI Report  | 24/07/2018 | 06/08/2018 | Agency                       |
| WBACC Review of DSI report (If required)?  | TBC        | TBC        | WBACC                        |
| Finalise DSI Report  | 07/08/2018 | 27/08/2018 | GHD/Defence/Auditor          |
| Groundwater Numerical Modelling  | 30/03/18   | 27/09/18   |                              |

|   |            |            |                              |
|---|------------|------------|------------------------------|
| Data capture, modelling, calibration and sensitivity analysis           | 14/04/18   | 16/08/18   | GHD                          |
| Draft groundwater modelling report Preparation                          | 17/08/18   | 30/08/18   | GHD                          |
| Defence and Auditor review of Draft GWM Report                          | 31/08/18   | 13/09/18   | GHD/Defence/Auditor          |
| Finalisation of groundwater modelling report                            | 14/09/18   | 27/09/18   |                              |
| Human Health and ecological risk assessment                             | 24/08/2017 | 30/09/2018 | GHD/Defence/Agency/WBACC     |
| HHERA Plan draft  | 24/08/2017 | 01/09/2017 | GHD                          |
| Defence and Auditor review of Draft HHERA Plan                          | 01/09/2017 | 15/10/2017 | Defence/Auditor              |
| ACT & NSW State Agency review of HHERA Plan                             | 20/11/2017 | 01/12/2017 | Agency                       |
| Risk Workshop   | 16/07/2018 | 16/07/2018 | GHD                          |
| HHERA Draft report Preparation  | 17/07/2018 | 10/09/2018 | GHD                          |
| Defence and Auditor review of Draft HHERA report                        | 11/09/2018 | 24/09/2018 | Defence/Auditor              |
| Update of Draft HHERA report  | 24/09/2018 | 08/10/2018 | GHD                          |
| Agency review of HHERA  | 09/10/2018 | 22/10/2018 | Agency                       |
| WBACC Review of HHERA report (If required)?                             | TBC        | TBC        | WBACC                        |
| Finalise HHERA Report   | 23/10/2018 | 12/11/2018 | GHD/Defence/Auditor          |
| PFAS Area Management Plan (PMAP)  | 18/07/2018 | 12/11/2018 | GHD/Defence/Auditor          |
| PMP Template Workshop   | 28/09/2018 | 28/09/2018 | GHD/Defence/Auditor          |
| PMP Draft Report preparation  | 01/10/2018 | 19/10/2018 | GHD                          |
| Defence and Auditor review of Draft PMP report                          | 22/10/2018 | 02/11/2018 | GHD/Defence/Auditor          |
| PMP report workshop   | 15/10/2018 | 15/10/2018 | GHD/Defence/Auditor          |
| Finalise PMP Report   | 30/10/2018 | 12/11/2018 | GHD/Defence                  |
| Community Information Sessions  | 21/03/2017 | 25/05/2018 |                              |
| Community Information Session 3   | TBC        | TBC        | GHD/Defence/Agency/Community |
| Community Information Session 4<br>(Post DSI/HHERA report finalisation) | 14/11/2018 | 14/11/2018 | GHD/Defence/Agency/Community |
| Stakeholder engagement reporting  | 19/10/2018 | 31/12/2018 | GHD/Defence                  |
| Finalise stakeholder engagement reports                                 | 05/12/2018 | 11/12/2018 | GHD/Defence                  |
| Meetings with Agencies  | TBC        | TBC        | GHD/Defence/Agency           |
| Project Close out   | 12/12/2018 | 16/01/2019 | GHD/Defence                  |





**Moroney, Rebecca (Health)**

---

**From:** Clapham, David  
**Sent:** Tuesday, 19 June 2018 5:21 PM  
**To:** Barr, Conrad (Health); Hudson, Lyndell (Health)  
**Subject:** FW: Further Creswell inquiries [SEC=UNCLASSIFIED]

FYI

---

**From:** [REDACTED] [REDACTED] ] On Behalf Of PFASIM Jervis Bay  
**Sent:** Friday, 15 June 2018 10:55 AM  
**To:** [REDACTED]; [REDACTED]  
**Cc:** [REDACTED]; [REDACTED]; Chester, Heath <Heath.Chester@act.gov.au>; Clapham, David <David.Clapham@act.gov.au>  
**Subject:** RE: Further Creswell inquiries [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi [REDACTED]

Please see below GHD's response to NSW OEH's request.

We will discuss best timelines for future factual results letters and validated data at next weeks PCG Meeting. We will then provide the PCG with an anticipated schedule for those remaining letters. For improved data confidence, we have re-submitted select aquatic biota to the labs for re-analysis. This will be discussed at the PCG.

Clearly, Mary Creek was always the primary location of interest with regards to this investigation, as per the advice below, Defence and GHD worked closely with WBACC to attain site access which took a period of time to achieve.

I will provide excel data sheets to NSW and ACT EPAs inline with each factual letter release.

Happy to discuss.

Kind Regards,  
 [REDACTED]

[REDACTED]  
 (Contractor to Defence)  
 Project Manager – Investigations East  
 PFAS Investigation & Management Branch  
 Infrastructure Division

---

Department of Defence | Estate & Infrastructure Group  
 [REDACTED] E: [steve.tattam1@defence.gov.au](mailto:steve.tattam1@defence.gov.au)

**From:** [REDACTED]  
**Sent:** Friday, 15 June 2018 9:57 AM  
**To:** PFASIM Jervis Bay  
**Cc:** [REDACTED]  
**Subject:** FW: Further Creswell inquiries [SEC=UNCLASSIFIED]

Hi [REDACTED],

Please see the answers in line in response to requests from NSW OEH:

JBRF/HMAS Creswell:

1. Have GHD mislabelled yabbies and shrimp? There are yabby's collected from Jervis Bay – these are typically freshwater organisms?

**[GHD]** *The Yabbies collected from Jervis Bay - Trypaea australienis, Ghost Nippers, also known as pink nipper and yabbie*

2. Could OEH please get locations (points on map) as to where biota were sampled from – especially for the wombat berry tree

**[GHD]** For figure clarity we do not plan to label each individual location in factual letter figures, rather the sampling area for each biota sample location (i.e. individual unlabelled locations, with a larger polygon covering these).

3. Are there additional wombat berry samples coming? (only 2 provided in the dataset)

**[GHD]** No additional Wombat berry samples to report, noting seven (6 primary + 1 QA) were reported (without detect) in Factual letter 13.

4. Does GHD have any size/weight data for organisms particularly molluscs, gastropods and polychaetes?

**[GHD]** *Sample weight is available on the laboratory CoA and raw data exported from field tablets records length/weight/condition data in majority of samples.*

5. OEH still require the full data set to proceed with any dietary advice. Particularly the full data sets for Marys Creek and Summercloud Creek. From the conclusions of the GHD *Water Use and Biota Survey Jervis Bay Range Facility and HMAS Creswell – Jervis Bay Territory* report, it is unclear why these were not sent as priority as there is greater activity reported in the southern creeks near Wreck Bay.

**[GHD]** Sampling of Mary's and Summercloud creeks was delayed by the requirement for a permit to access 403 land, with sampling commencing 20 March 2018.

GHD worked with the traditional owners to secure samples from areas identified as culturally appropriate and likely to be frequented by the community. This process taking considerable time, with final samples secured on 22 May 2018.

Review of preliminary data has identified the requirement for additional sample analysis to validate the dataset, which has delayed issue of complete dataset.

6. Can GHD send through the whole biota data set for each creek when all the analyses are complete. This way OEH can be sure there is no additional data is trickling in and can proceed with calculations. OEH require a complete data set to undertake dietary calculations.

**[GHD]** *Defence, auditor and GHD have agreed to issue factual letters with complete datasets (by area) to capture all data in a single document to avoid data trickling in.*

*GHD intend to issue factual letters for Northern and Southern tributaries on receipt and validation of all primary and QA results, with exception of whole body secondary samples identified below.*

*On 13 June additional secondary samples were submitted for analysis to support the ecological risk assessment. The samples submitted for analysis from Mary, Summercloud, Captains lagoon and Wreck Bay, consists of the remaining on hold tissue (whole body) from which primary samples were originally taken (edible fillets). The secondary sample analysis aims to understand the risk to higher order predators, likely to consume the entire fish (including internal organs).*

*To enable timely issue of primary sample factual letter results, the secondary sample data, when received, will be issued as a revision.*

## 7. Specific Creeks

- Captains Creek – will there be further data, or is the data set complete? [GHD] more data to be reported
- Flatrock Creek – will there be further data, or is the data set complete? [GHD] more data to be reported
- Jervis Bay (MR01, MR02) – will there be further data, or is the data set complete? [GHD] more data to be reported
- Mary's Creek – please send **full** data set when available. [GHD] noted
- Summercloud Creek – please send **full** data set when available. [GHD] noted
- Wreck Bay (WBMR01) – please send **full** data set when available. [GHD] noted
- JBRF – will there be further data, or is the data set complete? – specifically any native berries (bush tucker) [GHD] The terrestrial biota dataset for onsite (JBRF and Creswell) is complete. Terrestrial data for offsite (Jervis Bay territory, BNP and 403 land) has more data to be reported.

8. Also note please send all data in **Microsoft excel format**. [GHD] noted

Regards,

[REDACTED]

[REDACTED] – NSW PFAS Strategy

Hazardous Incidents and Environmental Health, NSW Environment Protection Authority

+61 2 9995 6044

[REDACTED]@epa.nsw.gov.au www.epa.nsw.gov.au @EPA\_NSW

**IMPORTANT:** This email remains the property of the Department of Defence and is subject to the jurisdiction of section 70 of the Crimes Act 1914. If you have received this email in error, you are requested to contact the sender and delete the email.

**From:** [REDACTED] [REDACTED]@epa.nsw.gov.au

**Sent:** Wednesday, 13 June 2018 1:50 PM

**To:** [REDACTED]

**Cc:** PFASIM Jervis Bay; [REDACTED] Danielle Playford

**Subject:** Further Creswell inquiries

Hi [REDACTED]

Please see the below requests from NSW OEH:

JBRF/HMAS Creswell:

1. Have GHD mislabelled yabbies and shrimp? There are yabby's collected from Jervis Bay – these are typically freshwater organisms?
2. Could OEH please get locations (points on map) as to where biota were sampled from – especially for the wombat berry tree
3. Are there additional wombat berry samples coming? (only 2 provided in the dataset)?
4. Does GHD have any size/weight data for organisms particularly molluscs, gastropods and polychaetes?

OEH still require the full data set to proceed with any dietary advice. Particularly the full data sets for Marys Creek and Summercloud Creek. From the conclusions of the GHD *Water Use and Biota Survey Jervis Bay Range Facility and HMAS Creswell – Jervis Bay Territory* report, it is unclear why these were not sent as priority as there is greater activity reported in the southern creeks near Wreck Bay.

Can GHD send through the whole biota data set for each creek when all the analyses are complete. This way OEH can be sure there is no additional data is trickling in and can proceed with calculations. OEH require a complete data set to undertake dietary calculations.

## Specific Creeks

- Captains Creek – will there be further data, or is the data set complete?
- Flatrock Creek – will there be further data, or is the data set complete?
- Jervis Bay (MR01, MR02) – will there be further data, or is the data set complete?
- Mary's Creek – please send **full** data set when available.
- Summercloud Creek – please send **full** data set when available.
- Wreck Bay (WBMR01) – please send **full** data set when available.
- JBRF – will there be further data, or is the data set complete? – specifically any native berries (bush tucker)

Also note please send all data in **Microsoft excel format**.

Regards,



– **NSW PFAS Strategy**

Hazardous Incidents and Environmental Health, NSW Environment Protection Authority  
+61 2 9995 6044

[www.epa.nsw.gov.au](http://www.epa.nsw.gov.au) [www.epa.nsw.gov.au](http://www.epa.nsw.gov.au) [@EPA\\_NSW](https://twitter.com/EPA_NSW)

**Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555**



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PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

**White, Sarah-Jane (Health)**

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**From:** Clapham, David  
**Sent:** Friday, 22 June 2018 1:37 PM  
**To:** Barr, Conrad (Health); Pengilley, Andrew (Health); Sargent, Narelle; Hudson, Lyndell (Health); Chester, Heath  
**Subject:** Defence correspondence with WBACC [SEC=UNCLASSIFIED, DLM=For-Official-Use-Only]  
**Attachments:** WBACC results letter 1 - Issued 22MAY18; FW: WBACC presentation - may 22

Afternoon all

Defence has forwarded the attached to me comprising their advice to WBACC in May, FYI.

Best

David

**White, Sarah-Jane (Health)**

**From:** [REDACTED]@ghd.com>  
**Sent:** Friday, 22 June 2018 8:59 AM  
**To:** Clapham, David  
**Subject:** WBACC results letter 1 - Issued 22MAY18  
**Attachments:** 180522 - Results Letter - Wreck Bay 403 Lands\_Reduced.pdf

Hi [REDACTED]

Attached is a lower resolution copy of the results letter that was delivered to WBACC Board on 22 May 2018.

The attached copy is reduced file size, for ease of transfer I can arrange a large file transfer of the files below if required.

- 180522 -Results Letter Wreck Bay 403 Lands (16 mb)
- 180522 -Results Letter Volume 2 Redacted Certificates Wreck Bay 403 Lands (16 mb)

The figure below is a snapshot of Volume 2 redacted files, which I have not provided at this time.

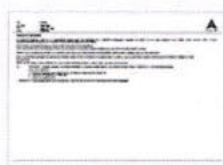
The results information from the laboratory certificates is contained within the tables in the attached letter.

The original lab certificates were provided for 403 lands only, with a redaction of all samples taken from outside of 403 land.

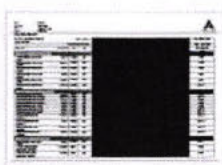
Please call if you have questions or require transfer of the original files.



1



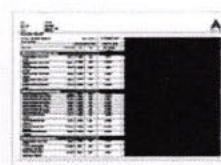
2



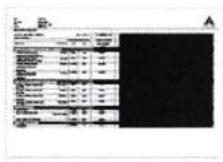
3



4



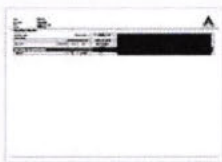
5



6



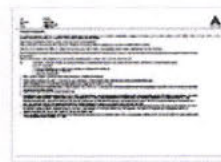
7



8



9



10

Regards,

[REDACTED]

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**Australian Government**  
**Department of Defence**

██████████  
Chair, Wreck Bay Aboriginal Community Council Board  
c/- 5 Bunaan Close  
WRECK BAY VILLAGE JBT 2540

Dear Ms Brown,

**JERVIS BAY RANGE FACILITY AND HMAS CRESWELL ENVIRONMENTAL INVESTIGATION - SOIL/SEDIMENT/SURFACE WATER/GROUNDWATER AND BIOTA TEST RESULTS UP TO 11 MAY 2018**

I am writing on behalf of the Department of Defence (Defence) to provide you with the test results from the samples collected and received prior to 11 May 2018 on Wreck Bay '403' Lands (WBL) and within Booderee National Park (BNP).

This is not a complete set of test result as not all results have been received; however I will forward the remainder under a second results letter prior to the 26 June 2018 Wreck Bay Aboriginal Community Council (WBACC) Board meeting.

The samples collected from WBL and BNP were analysed for per- and poly-fluoroalkyl substances (PFAS) and other chemicals (including heavy metals and petroleum hydrocarbons) by National Association of Testing Authorities-accredited laboratories.

The results for the samples collected from WBL and BNP are in the **enclosed** Certificates of Analysis. You will note that the Certificates of Analysis have been **redacted** to remove personal contact details and results from samples outside WBL and BNP. This is to avoid confusion as to what was sampled on or off WBL and BNP; however, all results will be presented in the final *Detailed Site Investigation Report*.

**Test results**

The test results of the samples collected are enclosed at Tables 1-12 along with a comparison against the relevant screening guidelines where available (note Tables 1-8 only list the results for perfluorooctane sulfonate (PFOS), perfluorohexane sulfonate (PFHxS) and perfluorooctanoic acid (PFOA) as they are the PFAS for which there are Australian health based guidance values. The results in Tables 9-12 include the results of the other chemicals). The enclosed Certificates of Analysis also present the test results for the other types of PFAS included in the analytical suite and the other chemicals completed by the laboratory.

You will also note that quality control samples collected from WBL and BNP are also included in the tables, and these were collected to validate the accuracy of the laboratory results.

**Screening guidelines for PFAS**

On 16 February 2018, the Heads of Environmental Protection Authorities Australia and New Zealand in collaboration with the Australian Government Department of Environment and Energy released the *PFAS National Environmental Management Plan (NEMP)*. The NEMP contains (amongst other things) guidance values for soil and water to inform investigations if further assessment is required.

In addition, guidance values for finfish, crustaceans, and molluscs as specified in the *Food Standards Australia New Zealand (FSANZ) Proposed trigger points for investigation, 2017* have also been adopted.

The following table details the health based guidance values for PFAS shown in units of micrograms per litre ( $\mu\text{g/L}$ ) for water, milligrams per kilogram ( $\text{mg/kg}$ ) for soil, and micrograms per kilogram ( $\mu\text{g/kg}$ ) for biota.

| Health based guidance values  | PFOS + PFHxS         | PFOA                 |
|---|----------------------|----------------------|
| Drinking water quality value  | 0.07 $\mu\text{g/L}$ | 0.56 $\mu\text{g/L}$ |
| Recreational water quality value  | 0.7 $\mu\text{g L}$  | 5.6 $\mu\text{g L}$  |
| Public Open Space soil quality value  | 1 $\text{mg/kg}$     | 10 $\text{mg/kg}$    |
| Sediment quality value  | N/A                  | N/A                  |
| Sediment quality value for location UN2 the residential soil quality value has been adopted as this is the closest exposure scenario due to the use of sediments in this area | 0.009 $\text{mg/kg}$ | 0.1 $\text{mg/kg}$   |
| Finfish - Proposed trigger points for investigation   | 5.2 $\mu\text{g/kg}$ | 41 $\mu\text{g/kg}$  |
| Crustaceans and Molluscs - Proposed trigger points for investigation  | 65 $\mu\text{g/kg}$  | 120 $\mu\text{g/kg}$ |

**Table 1 – Health-based guidance values for PFAS**

#### Screening guidelines for Other Contaminants

The results for the Other Contaminants of Concern have been screened against the guidance values from the *National Environment Protection (Assessment of Site Contamination) Measure (NEPM)* which sets the relevant standards for assessing and monitoring contamination for soil and groundwater as follows:

- **Soils.** *Health Investigation Level (HIL) 'C'* which is for public open spaces, and these are available for various contaminants including heavy metals. Petroleum hydrocarbons would be screened against Management Limits for residential, parkland and public open space.
- **Surface water and groundwater.** *Groundwater Investigation Level (GIL)* for drinking water which includes heavy metal and hydrocarbons.

There are no health based screening levels for sediments.

The guidance values are included in the attached tables.

#### Limit of reporting

The limit of reporting (LOR) is the threshold, or lowest concentration, that the laboratory is able to measure for a compound with a reasonable degree of certainty. The LOR varies according to the method of analysis, the type of compound, and other factors in the sample tested. If the results are below the LOR, the result will be listed as <LOR.

A result listed as <LOR means that while the compound may be present, the concentration is so low that it cannot be accurately measured.

The limits of reporting for WBL and BNP samples are included in the attached Tables 1-12.

### Management of Information Collected from Wreck Bay Lands

For the purposes of this investigation Defence is working cooperatively with a range of government agencies, including relevant Commonwealth, State, and Territory governments.

Details of the sampling locations and results of testing may be shared with Defence's environmental experts, relevant government agencies and business entities directly involved in any action linked to the investigation. Any information shared will only be to the extent necessary for the purposes of the environmental investigation; to assist with planning; and to determine any requirements for further action.

### Use of information in the environmental investigation report

Investigation reports will be made publicly available and published on the project website: <http://www.defence.gov.au/environment/pfas/JervisBay/>

These reports may include maps showing sampling locations and test results, represented as colour-coded dots. The names and addresses of property owners will not be included in the report; however individual properties may be visually identifiable from the maps.

Similarly while an investigation is ongoing, a map showing sampling locations and test results, represented as colour-coded dots, may be prepared and released to the public in order to keep the community informed.

The Jervis Bay PFAS team and I are available to answer any queries you might have in regard to the enclosures.

Yours sincerely,

[Redacted signature]

[Redacted name]

HMAS *Creswell*

21 May 2018

### Enclosures:

#### A. Volume 1 - Enclosures

1. Table 1 – Laboratory results for PFAS in Soil and Sediment - 403 Lands
2. Table 2 – Laboratory results for PFAS in Soil and Sediment - BNP
3. Table 3 – Laboratory results for PFAS in Surface Water and Groundwater - 403 Lands
4. Table 4 – Laboratory results for PFAS in Surface Water and Groundwater - BNP
5. Table 5 – Laboratory results for PFAS in Marine Water – Jervis Bay and Wreck Bay
6. Table 6 – Laboratory results for PFAS in Biota - 403 Lands
7. Table 7 – Laboratory results for PFAS in Biota - BNP
8. Table 8 – Laboratory results for PFAS in Biota – Jervis Bay and Wreck Bay Marine
9. Table 9 – Laboratory results for Other Contaminants of Concern in Soil and Sediment - 403 Lands
10. Table 10 – Laboratory results for Other Contaminants of Concern in Soil & Sediment - BNP

11. Table 11 – Laboratory results for Other Contaminants of Concern in Surface Water and Groundwater - 403 Lands
12. Table 12 – Laboratory results for Other Contaminants of Concern in Surface Water and Groundwater - BNP
13. Figure 1A – Overview, Sample Locations
14. Figure 1B - Area Of Environmental Concern A Sample Locations
15. Figure 1C - Area Of Environmental Concern B Sample Locations
16. Figure 1D - Area Of Environmental Concern C & D Sample Locations
17. Figure 1E - Area Of Environmental Concern E Sample Locations
18. Figure 1F - Area Of Environmental Concern F Sample Locations
19. Figure 1G - Area Of Environmental Concern G Sample Locations
20. Figure 1H - Area Of Environmental Concern H Sample Locations
21. Figure 1I – JBRF Pathway Characterisation Sample Locations
22. Figure 1J – Flatrock Creek Sample Locations
23. Figure 1K – Captains Lagoon Sample Locations
24. Figure 1L – Telegraph Creek Sample Locations
25. Figure 1M – Mary, Summercloud and Unnamed Creeks Sample Locations
26. Figure 1N – Potable Water Sources Sample Locations
27. Figure 2A – Biota Sample Locations (North)
28. Figure 2B – Biota Sample Locations (South)
29. Fact sheet - [Jervis Bay Range Facility and HMAS *Creswell* Investigation ] - [Investigation Update – November 2017]
30. Fact sheet – *Health Based Guidance Values for PFAS* – Department of Health

**B. Volume 2 – Certificate of Analysis**

31. Certificate of Analysis – [Redacted] – [WBL&BNP] - [2017 - 11 May 2018]



Table 1 – Laboratory results for PFAS in Soil and Sediment - 403 Land

Department of Defence  
JBRF HMAS Creswell PFAS Investigation

|   |               |               |                      |             |              |                   | PFOS/PFOA (Sum of Total) - Lab Calc | Perfluorooctanoic acid (PFOA) |
|---|---------------|---------------|----------------------|-------------|--------------|-------------------|-------------------------------------|-------------------------------|
|   |               |               |                      |             |              |                   | mg/kg                               | mg/kg                         |
| LOR   |               |               |                      |             |              |                   | 0.0002                              | 0.0002                        |
| PFAS NEMP 2018 Health Public Open Space           |               |               |                      |             |              |                   | 1                                   | 10                            |
| PFAS NEMP 2018 Health Residential Accessible Soil |               |               |                      |             |              |                   | 0.009                               | 0.1                           |
| Monitoring Zone                                   | Location Code | Location Type | Field ID             | Sample Type | Sampled Date | Lab Report Number |                                     |                               |
| Mary Creek  | MC_MW01       | MW            | MC_MW01_0.0_180323   | Normal      | 23/03/2018   | ES1808902         | 0.0014                              | <0.0002                       |
| Mary Creek  | MC_MW01       | MW            | MC_MW01_10.0_180323  | Normal      | 23/03/2018   | ES1808902         | <0.0002                             | <0.0002                       |
| Mary Creek  | MC_MW02       | MW            | MC_MW02_0.0_180322   | Normal      | 22/03/2018   | ES1808902         | 0.0008                              | <0.0002                       |
| Mary Creek  | MC_MW02       | MW            | MC_MW02_1.0_180322   | Normal      | 22/03/2018   | ES1808902         | 0.0004                              | <0.0002                       |
| Mary Creek  | MC_MW03       | MW            | MC_MW03_0.0_180322   | Normal      | 22/03/2018   | ES1808902         | <0.0002                             | <0.0002                       |
| Mary Creek  | MC_MW03       | MW            | MC_MW03_0.5_180322   | Normal      | 22/03/2018   | ES1808902         | <0.0002                             | <0.0002                       |
| Mary Creek  | MC_MW03       | MW            | UN2_QC201_180322     | Interlab_D  | 22/03/2018   | 591340            | <0.205                              | <0.005                        |
| Mary Creek  | MC_MW04       | MW            | MC_MW04_0.0_180322   | Normal      | 22/03/2018   | ES1808902         | 0.0004                              | <0.0002                       |
| Mary Creek  | MC_MW04       | MW            | MC_MW04_0.5_180322   | Normal      | 22/03/2018   | ES1808902         | <0.0002                             | <0.0002                       |
| Mary Creek  | MC_SD01       | SD            | MC_SD01_0.0_180320   | Normal      | 20/03/2018   | ES1808818         | 0.0003                              | <0.0002                       |
| Mary Creek  | MC_SD02       | SD            | MC_SD02_0.0_180323   | Normal      | 23/03/2018   | ES1809241         | 0.0004                              | <0.0002                       |
| Mary Creek  | MC_SD03       | SD            | MC_SD03_0.0_180323   | Normal      | 23/03/2018   | ES1809241         | <0.0002                             | <0.0002                       |
| Mary Creek  | MC_SD04       | SD            | MC_SD04_0.0_1804     | Normal      | 19/04/2018   | ES1811895         | 0.0003                              | <0.0002                       |
| Mary Creek  | MC_SD09       | SD            | MC_SD09_0.0_180328   | Normal      | 28/03/2018   | ES1809328         | <0.0002                             | <0.0002                       |
| Mary Creek  | MC_SD10       | SD            | MC_SD10_0.0_180320   | Normal      | 20/03/2018   | ES1808818         | 0.0006                              | <0.0002                       |
| Mary Creek  | MC_TS01_SOIL  | SS            | MC_TS01_SOIL01       | Normal      | 28/03/2018   | ES1809900         | 0.0041                              | <0.0002                       |
| Mary Creek  | MC_TS01_SOIL  | SS            | ST38_QC101_180328    | Field_D     | 28/03/2018   | ES1809900         | 0.0029                              | <0.0002                       |
| Summercloud Creek                                 | SC_ES01_SD    | SD            | SC_ES01_SD1_0_180404 | Normal      | 04/04/2018   | ES1810453         | <0.0002                             | <0.0002                       |
| Summercloud Creek                                 | SC_S001       | SD            | SC_S001_0.0_180323   | Normal      | 23/03/2018   | ES1809241         | <0.0002                             | <0.0002                       |
| Summercloud Creek                                 | SC_S002       | SD            | SC_S002_0.0_180323   | Normal      | 23/03/2018   | ES1809241         | <0.0002                             | <0.0002                       |
| Unnamed Water Bodies                              | UN1_SD01      | SD            | UN1_SD01_0.0_180327  | Normal      | 27/03/2018   | ES1809328         | 0.0013                              | <0.0002                       |
| Unnamed Water Bodies                              | UN1_SD02      | SD            | UN1_SD02_0.0_180327  | Normal      | 27/03/2018   | ES1809328         | <0.0002                             | <0.0002                       |
| Unnamed Water Bodies                              | UN1_SD03      | SD            | UN1_SD03_0.0_180327  | Normal      | 27/03/2018   | ES1809328         | <0.0002                             | <0.0002                       |
| Unnamed Water Bodies                              | UN1_SD04      | SD            | UN1_SD04_0.0_180327  | Normal      | 27/03/2018   | ES1809328         | <0.0002                             | <0.0002                       |
| Unnamed Water Bodies                              | UN2_SD01      | SD            | UN_QC104_180322      | Field_D     | 22/03/2018   | ES1809902         | <0.0002                             | <0.0002                       |
| Unnamed Water Bodies                              | UN2_SD01      | SD            | UN2_SD01_0.0_180322  | Normal      | 22/03/2018   | ES1809902         | 0.0002                              | <0.0002                       |
| Unnamed Water Bodies                              | UN2_SD02      | SD            | UN2_SD02_0.0_180322  | Normal      | 22/03/2018   | ES1809902         | <0.0002                             | <0.0002                       |
| Unnamed Water Bodies                              | UN2_SD03      | SD            | UN2_SD03_0.0_180322  | Normal      | 22/03/2018   | ES1809902         | <0.0002                             | <0.0002                       |
| Unnamed Water Bodies                              | UN2_SD04      | SD            | UN2_SD04_0.0_180322  | Normal      | 22/03/2018   | ES1809902         | 0.0012                              | <0.0002                       |
| Unnamed Water Bodies                              | UN2_SD05      | SD            | UN2_SD05_0.0_180322  | Normal      | 22/03/2018   | ES1809902         | 0.0007                              | <0.0002                       |
| Unnamed Water Bodies                              | UN3_SD05      | SD            | UN_QC10_180328       | Interlab_D  | 28/03/2018   | 592096            | <0.005                              | <0.005                        |
| Unnamed Water Bodies                              | UN3_SD05      | SD            | UN3_SD05_0.0_180328  | Normal      | 28/03/2018   | ES1809328         | <0.0002                             | <0.0002                       |
| Unnamed Water Bodies                              | UN3_SD06      | SD            | UN3_SD06_0.0_180328  | Normal      | 28/03/2018   | ES1809328         | <0.0002                             | <0.0002                       |



Table 2 – Laboratory results for PFAS in Soil and Sediment - Booderee National Park

Department of Defence  
JBFR HMAS Creswell PFAS Investigation

| LOI                  | mg/kg         |                                    | mg/kg                            |                               |              |                   |         |         |
|----------------------|---------------|------------------------------------|----------------------------------|-------------------------------|--------------|-------------------|---------|---------|
|                      | PFAS          | NEMP 2018 Health Public Open Space | PFOS/PFOA (Sum of Total) Lab CMC | Perfluorooctanoic acid (PFOA) |              |                   |         |         |
|                      | 1             | 10                                 |                                  | 10                            |              |                   |         |         |
| Monitoring_Zone      | Location_Code | Location_Type                      | Field_ID                         | Sample_Type                   | Sampled_Date | Lab_Report_Number |         |         |
| Bherwerre Barrier    | BB_MW01       | MW                                 | BB_MW01_0.0_180320               | Normal                        | 20/03/2018   | ES1808818         | <0.0002 | <0.0002 |
| Bherwerre Barrier    | BB_MW02       | MW                                 | BB_MW02_0.0_180320               | Normal                        | 20/03/2018   | ES1808818         | <0.0002 | <0.0002 |
| Bherwerre Barrier    | BB_MW01       | MW                                 | BB_QC101_180320                  | Field_D                       | 20/03/2018   | ES1808818         | <0.0002 | <0.0002 |
| Bherwerre Barrier    | BB_MW02       | MW                                 | BB_MW02_0.0_180320               | Normal                        | 20/03/2018   | ES1808818         | 0.0012  | <0.0002 |
| Bherwerre Barrier    | BB_MW02       | MW                                 | BB_MW02_1.0_180320               | Normal                        | 20/03/2018   | ES1808818         | <0.0002 | <0.0002 |
| Bherwerre Barrier    | BB_MW03       | MW                                 | BB_MW03_0.0_180320               | Normal                        | 20/03/2018   | ES1808902         | <0.0002 | <0.0002 |
| Bherwerre Barrier    | BB_MW03       | MW                                 | BB_MW03_6.0_180320               | Normal                        | 20/03/2018   | ES1808902         | <0.0002 | <0.0002 |
| Captains Lagoon      | CL_FW01       | SD                                 | CL_FW01_S00_2_180409             | Normal                        | 09/04/2018   | ES1810453         | 0.0052  | <0.0002 |
| Captains Lagoon      | CL_MW02       | MW                                 | CL_MW02_0.0_180321               | Normal                        | 21/03/2018   | ES1808902         | 0.0046  | <0.0002 |
| Captains Lagoon      | CL_MW02       | MW                                 | CL_MW02_1.0_180321               | Normal                        | 21/03/2018   | ES1808902         | 0.0009  | <0.0002 |
| Captains Lagoon      | CL_MW04       | MW                                 | CL_MW_04_0.0_180326              | Normal                        | 26/03/2018   | ES1809241         | 0.0008  | <0.0002 |
| Captains Lagoon      | CL_MW05       | MW                                 | CL_MW_05_0.0_180326              | Normal                        | 26/03/2018   | ES1809241         | 0.0011  | <0.0002 |
| Captains Lagoon      | CL_S007       | SD                                 | CL_SE007_0-0-05                  | Normal                        | 18/04/2017   | ES1709535         | 0.0145  | <0.0002 |
| Captains Lagoon      | CL_S008       | SD                                 | CL_SE008_0-0-05                  | Normal                        | 18/04/2017   | ES1709535         | 0.0005  | <0.0002 |
| Captains Lagoon      | CL_S008       | SD                                 | QC001                            | Field_D                       | 18/04/2017   | ES1709535         | 0.001   | <0.0002 |
| Captains Lagoon      | CL_S012       | SD                                 | CL_S012_0.0_180326               | Normal                        | 26/03/2018   | ES1809241         | <0.0002 | <0.0002 |
| Captains Lagoon      | CL_S013       | SD                                 | CL_S013_0.0_180326               | Normal                        | 26/03/2018   | ES1809241         | 0.0013  | <0.0002 |
| Flatrock Creek       | FC_S013       | SD                                 | FC_S013_0.0_180321               | Normal                        | 21/03/2018   | ES1808818         | 0.0009  | <0.0002 |
| Flatrock Creek       | FC_S014       | SD                                 | FC_S014_0.0_180406               | Normal                        | 06/04/2018   | ES1810551         | <0.0002 | <0.0002 |
| Flatrock Creek       | FC_S015       | SD                                 | FC_S015_0.0_180406               | Normal                        | 06/04/2018   | ES1810551         | <0.0002 | <0.0002 |
| Jervis Bay           | JB_MR01       | SD                                 | JB_MR01_S001                     | Normal                        | 12/03/2018   | ES1808457         | <0.0002 | <0.0002 |
| Jervis Bay           | JB_MR02       | SD                                 | JB_MR02_S02_0_180314             | Normal                        | 14/03/2018   | ES1810453         | 0.0005  | <0.0002 |
| Jervis Bay           | JB_MR03       | SD                                 | JB_MR03_S01_50_180321            | Normal                        | 21/03/2018   | ES1810453         | <0.0002 | <0.0002 |
| Lake McKean          | LM_FW01       | SD                                 | LM_FW01_S00_5_180405             | Normal                        | 05/04/2018   | ES1810453         | <0.0002 | <0.0002 |
| Summercloud Creek    | SC_S004       | SD                                 | SC_S004_0.0_180406               | Normal                        | 06/04/2018   | ES1810551         | <0.0002 | <0.0002 |
| Telegraph Creek      | TC_S001       | SD                                 | TC_S001_0.0_180321               | Normal                        | 21/03/2018   | ES1808818         | 0.0007  | <0.0002 |
| Telegraph Creek      | TC_S002       | SD                                 | TC_S002_0.0_180321               | Normal                        | 21/03/2018   | ES1808818         | <0.0002 | <0.0002 |
| Telegraph Creek      | TC_S003       | SD                                 | TC_S003_0.0_180320               | Normal                        | 20/03/2018   | ES1808818         | <0.0002 | <0.0002 |
| Telegraph Creek      | TC_S004       | SD                                 | TC_S004_0.0_180321               | Normal                        | 21/03/2018   | ES1808818         | <0.0002 | <0.0002 |
| Telegraph Creek      | TC_S005       | SD                                 | TC_S005_0.0_180320               | Normal                        | 20/03/2018   | ES1808818         | 0.0045  | <0.0002 |
| Telegraph Creek      | TC_S006       | SD                                 | TC_S006_0.0_180320               | Normal                        | 20/03/2018   | ES1808818         | 0.0003  | <0.0002 |
| Telegraph Creek      | TC_S007       | SD                                 | TC_S007_0.0_180321               | Normal                        | 20/03/2018   | ES1808818         | <0.0002 | <0.0002 |
| Telegraph Creek      | TC_S008       | SD                                 | TC_S008_0.0_180320               | Normal                        | 20/03/2018   | ES1808818         | 0.0004  | <0.0002 |
| Telegraph Creek      | TC_S009       | SD                                 | TC_S009_0.0_180321               | Normal                        | 21/03/2018   | ES1808818         | <0.0002 | <0.0002 |
| Telegraph Creek      | TC_S010       | SD                                 | TC_S010_0.0_180326               | Normal                        | 26/03/2018   | ES1809241         | <0.0002 | <0.0002 |
| Telegraph Creek      | TC_S011       | SD                                 | TC_S011_0.0_180326               | Normal                        | 26/03/2018   | ES1809241         | <0.0002 | <0.0002 |
| Unnamed Water Bodies | UN3_S001      | SD                                 | UN3_S001_0.0_180426              | Normal                        | 06/04/2018   | ES1810551         | <0.0002 | <0.0002 |
| Unnamed Water Bodies | UN3_S002      | SD                                 | UN3_S002_0.0_180403              | Normal                        | 03/04/2018   | ES1810041         | <0.0002 | <0.0002 |
| Unnamed Water Bodies | UN3_S003      | SD                                 | UN3_S003_0.0_180319              | Normal                        | 19/03/2018   | ES1808902         | 0.0015  | <0.0002 |
| Unnamed Water Bodies | UN3_S004      | SD                                 | UN3_S004_0.0_180427              | Normal                        | 06/04/2018   | ES1810551         | <0.0002 | <0.0002 |
| Unnamed Water Bodies | UN3_S007      | SD                                 | UN3_S007_0.0_180423              | Normal                        | 03/04/2018   | ES1810041         | <0.0002 | <0.0002 |
| Unnamed Water Bodies | UN3_S008      | SD                                 | UN3_S008_0.0_180403              | Normal                        | 03/04/2018   | ES1810041         | <0.0002 | <0.0002 |
| Unnamed Water Bodies | UN4_S001      | SD                                 | UN4_S001_0.0_180326              | Normal                        | 26/03/2018   | ES1809241         | <0.0002 | <0.0002 |



Table 3 – Laboratory results for PFAS in Surface Water and Groundwater - 403 Land

Department of Defence  
JBRF HMAS Creswell PFAS Investigation

| Monitoring Zone                          | Location Code | Location Type | Field ID            | Sample Type | Sampled Date/Time | Lab Report Number | PFAS/PHAS (Sum of Total) - Lab Calc |        |
|--|---------------|---------------|---------------------|-------------|-------------------|-------------------|-------------------------------------|--------|
|  |               |               |                     |             |                   |                   | µg/L                                | µg/L   |
| LOR                                      |               |               |                     |             |                   |                   | 0.0003                              | 0.0005 |
| PFAS NEMP 2018 Health Drinking Water     |               |               |                     |             |                   |                   | 0.07                                | 0.56   |
| PFAS NEMP 2018 Health Recreational Water |               |               |                     |             |                   |                   | 0.7                                 | 5.6    |
| Mary Creek                               | MC_MW02       | MW            | MC_MW02_180411      | Normal      | 11/04/2018        | E51810721         | <0.003                              | <0.005 |
| Mary Creek                               | MC_MW03       | MW            | MC_MW03_180411      | Normal      | 11/04/2018        | E51810721         | <0.003                              | <0.005 |
| Mary Creek                               | MC_MW04       | MW            | MC_MW04_180411      | Normal      | 11/04/2018        | E51810721         | <0.003                              | <0.005 |
| Mary Creek                               | MC_SW01       | SW            | MC_SW01_180320      | Normal      | 20/03/2018        | E51808818         | 3.69                                | 0.0225 |
| Mary Creek                               | MC_SW02       | SW            | MC_SW02_180323      | Normal      | 23/03/2018        | E51809241         | 5.28                                | 0.0205 |
| Mary Creek                               | MC_SW03       | SW            | MC_SW03_180323      | Normal      | 23/03/2018        | E51809241         | 0.0374                              | 0.0006 |
| Mary Creek                               | MC_SW04       | SW            | MC_SW04_1804        | Normal      | 19/04/2018        | E51811895         | 0.058                               | <0.005 |
| Mary Creek                               | MC_SW09       | SW            | MC_SW09_180328      | Normal      | 28/03/2018        | E51809328         | 0.0005                              | <0.005 |
| Mary Creek                               | MC_SW10       | SW            | MC_SW10_180320      | Normal      | 20/03/2018        | E51808818         | 0.0019                              | <0.005 |
| Mary Creek                               | MC_SW10       | SW            | MC_SW10_180328      | Normal      | 28/03/2018        | E51809328         | 3.56                                | 0.0212 |
| Summercloud Creek                        | SC_ES01_SW    | SW            | SC_ES01_SW05_180404 | Normal      | 4/04/2018         | E51810453         | <0.01                               | <0.01  |
| Summercloud Creek                        | SC_SW01       | SW            | SC_SW01_180323      | Normal      | 23/03/2018        | E51809241         | 0.0055                              | <0.005 |
| Summercloud Creek                        | SC_SW02       | SW            | SC_QC106_180323     | Field_D     | 23/03/2018        | E51809241         | 0.0007                              | <0.005 |
| Summercloud Creek                        | SC_SW02       | SW            | SC_SW02_180323      | Normal      | 23/03/2018        | E51809241         | 0.0008                              | <0.005 |
| Summercloud Creek                        | SC_SW03       | SW            | SC_SW03_180323      | Normal      | 23/03/2018        | E51809241         | 0.0005                              | <0.005 |
| Unnamed Water Bodies                     | UN1_SW03      | SW            | UN1_SW03_180327     | Normal      | 27/03/2018        | E51809328         | 0.0011                              | <0.005 |
| Unnamed Water Bodies                     | UN1_SW04      | SW            | UN1_SW04_180327     | Normal      | 27/03/2018        | E51809328         | 0.0009                              | <0.005 |
| Unnamed Water Bodies                     | UN2_SW01      | SW            | UN2_QC105_180322    | Field_D     | 22/03/2018        | E51808818         | 0.0022                              | <0.005 |
| Unnamed Water Bodies                     | UN2_SW01      | SW            | UN2_SW01_180322     | Normal      | 22/03/2018        | E51808818         | 0.0025                              | <0.005 |
| Unnamed Water Bodies                     | UN2_SW02      | SW            | UN2_QC202_180322    | Interlab_D  | 22/03/2018        | 591340            | 0.0073                              | <0.001 |
| Unnamed Water Bodies                     | UN2_SW02      | SW            | UN2_SW02_180322     | Normal      | 22/03/2018        | E51808818         | 0.0047                              | <0.005 |
| Unnamed Water Bodies                     | UN2_SW03      | SW            | UN2_SW03_180322     | Normal      | 22/03/2018        | E51808818         | 0.0143                              | <0.005 |
| Unnamed Water Bodies                     | UN2_SW04      | SW            | UN2_SW04_180322     | Normal      | 22/03/2018        | E51808818         | 0.009                               | 0.0006 |
| Unnamed Water Bodies                     | UN2_SW05      | SW            | UN2_SW05_180322     | Normal      | 22/03/2018        | E51808818         | 0.002                               | 0.001  |
| Unnamed Water Bodies                     | UN3_SW05      | SW            | UN3_SW05_180328     | Normal      | 28/03/2018        | E51809328         | 0.0006                              | <0.005 |
| Unnamed Water Bodies                     | UN3_SW06      | SW            | UN_QC209_180328     | Interlab_D  | 28/03/2018        | 592096            | <0.001                              | <0.001 |
| Unnamed Water Bodies                     | UN3_SW06      | SW            | UN3_SW06_180328     | Normal      | 28/03/2018        | E51809328         | <0.0003                             | <0.005 |



Table 4 – Laboratory results for PFAS in Surface Water and Groundwater - Booderee National Park

Department of Defence  
JBRF PFAS Creeked PFAS Investigation

| Monitoring Zone      | Location Code | Location Type | Field ID             | Sample Type | Sampled Date/Time | Lab Report Number | PFAS (Sum of 10) | Lab Code |
|----------------------|---------------|---------------|----------------------|-------------|-------------------|-------------------|------------------|----------|
| Shoemace Barrier     | SB_MF005      | MFW           | SB_MF005_180412      | Normal      | 12/04/2018        | 031810721         | <0.003           | 0-0000   |
| Shoemace Barrier     | SB_MF002      | MFW           | SB_MF002_180412      | Normal      | 12/04/2018        | 031810721         | 0.0025           | <0.0000  |
| Shoemace Barrier     | SB_MF002      | MFW           | SB_OC111_180412      | Field D     | 12/04/2018        | 031810721         | <0.001           | 0-0000   |
| Shoemace Barrier     | SB_MF002      | MFW           | SB_MF002_180412      | Normal      | 12/04/2018        | 031810721         | <0.003           | <0.0000  |
| Captains Lagoon      | CL_MF011_SW   | SW            | CL_MF011_SW0_180409  | Normal      | 09/04/2018        | 031810403         | 0.26             | <0.01    |
| Captains Lagoon      | CL_MF012      | MFW           | CL_MF012_180410      | Normal      | 10/04/2018        | 031810721         | 0.118            | 0-0004   |
| Captains Lagoon      | CL_MF014      | MFW           | CL_MF014_180410      | Normal      | 10/04/2018        | 031810721         | 0.042            | <0.0000  |
| Captains Lagoon      | CL_MF005      | MFW           | CL_MF005_180410      | Normal      | 10/04/2018        | 031810721         | <0.001           | <0.0000  |
| Captains Lagoon      | CL_SW07       | SW            | CL_SW07              | Normal      | 18/04/2017        | 031709535         | 0.32             | 0-0027   |
| Captains Lagoon      | CL_SW08       | SW            | CL_SW08              | Normal      | 18/04/2017        | 031709535         | 0.277            | 0-0019   |
| Captains Lagoon      | CL_SW08       | SW            | JCGA02               | Field D     | 18/04/2017        | 031709535         | 0.341            | 0-0011   |
| Captains Lagoon      | CL_SW12       | SW            | CL_SW12_180326       | Normal      | 26/03/2018        | 031809241         | 0.0039           | <0.0000  |
| Captains Lagoon      | CL_SW13       | SW            | CL_SW13_180326       | Normal      | 26/03/2018        | 031809241         | 0.0027           | <0.0000  |
| Captains Lagoon      | MF0018        | MFW           | MF0018               | Normal      | 4/05/2017         | 031711220         | 0.214            | 0-0011   |
| Fratrook Creek       | FC_SW05       | SW            | FC_SW05              | Normal      | 20/04/2017        | 031708644         | 0.109            | 0-001    |
| Fratrook Creek       | FC_SW13       | SW            | FC_SW13_180311       | Normal      | 11/03/2018        | 031808618         | 0.144            | 0-0013   |
| Fratrook Creek       | FC_SW14       | SW            | FC_SW14_180406       | Normal      | 06/04/2018        | 031810551         | 0.097            | <0.001   |
| Fratrook Creek       | FC_SW15       | SW            | FC_SW15_180406       | Normal      | 06/04/2018        | 031810551         | 0.0005           | <0.0000  |
| Lake McKenzie        | LM_MF001_SW   | SW            | LM_MF001_SW01_180409 | Normal      | 09/04/2018        | 031810403         | <0.01            | 0-001    |
| Lake McKenzie        | LM_MF002      | MFW           | LM_MF002_P01_180413  | Normal      | 13/04/2018        | 031810721         | 0.0032           | <0.0000  |
| Lake McKenzie        | LM_MF002      | MFW           | LM_MF002_P02_180413  | Normal      | 13/04/2018        | 031810721         | <0.0002          | <0.0000  |
| Lake McKenzie        | LM_SW01       | SW            | LM_SW01              | Field D     | 27/07/2017        | 031718711         | <0.01            | <0.01    |
| Lake McKenzie        | LM_SW01       | SW            | LM_SW01              | Normal      | 25/08/2017        | 031712123         | <0.01            | <0.01    |
| Lake McKenzie        | LM_SW02       | SW            | LM_SW02              | Normal      | 27/07/2017        | 031718711         | <0.01            | <0.01    |
| Lake McKenzie        | LM_SW02       | SW            | LM_SW02              | Normal      | 25/08/2017        | 031712123         | <0.01            | <0.01    |
| Lake McKenzie        | LM_SW03       | SW            | LM_SW03              | Normal      | 27/07/2017        | 031718711         | <0.01            | <0.01    |
| Lake McKenzie        | LM_SW03       | SW            | LM_SW03              | Normal      | 25/08/2017        | 031712123         | <0.01            | <0.01    |
| Lake McKenzie        | LM_SW04       | SW            | LM_SW04              | Normal      | 27/07/2017        | 031718711         | <0.01            | <0.01    |
| Lake McKenzie        | LM_SW04       | SW            | LM_SW04              | Normal      | 25/08/2017        | 031712123         | <0.01            | <0.01    |
| Lake Mindemere       | LM_MF001      | MFW           | LM_MF001_180412      | Field D     | 12/04/2018        | 031810721         | 0.0042           | <0.0000  |
| Lake Mindemere       | LM_SW01       | SW            | LM_SW01              | Normal      | 27/07/2017        | 031718711         | <0.01            | <0.01    |
| Lake Mindemere       | LM_SW01       | SW            | LM_SW01              | Normal      | 25/08/2017        | 031712123         | <0.01            | <0.01    |
| Lake Mindemere       | LM_SW02       | SW            | LM_SW02              | Normal      | 27/07/2017        | 031718711         | <0.01            | <0.01    |
| Lake Mindemere       | LM_SW02       | SW            | LM_SW02              | Normal      | 25/08/2017        | 031712123         | <0.01            | <0.01    |
| Lake Mindemere       | LM_SW03       | SW            | LM_SW03              | Normal      | 25/08/2017        | 031712123         | <0.01            | <0.01    |
| Lake Mindemere       | LM_SW05       | SW            | LM_SW05_180320       | Normal      | 20/03/2018        | 031809241         | 0.0013           | <0.0000  |
| Telegraph Creek      | TC_SW01       | SW            | TC_SW01_180321       | Normal      | 21/03/2018        | 031808618         | 0.0005           | <0.0000  |
| Telegraph Creek      | TC_SW05       | SW            | TC_SW05_180320       | Normal      | 20/03/2018        | 031808618         | 0.04             | 0-0000   |
| Telegraph Creek      | TC_SW06       | SW            | TC_SW06_180320       | Normal      | 20/03/2018        | 031808618         | 0.0023           | <0.0000  |
| Telegraph Creek      | TC_SW07       | SW            | TC_SW07_180321       | Normal      | 21/03/2018        | 031808618         | 0.0008           | <0.0000  |
| Telegraph Creek      | TC_SW10       | SW            | TC_SW10_180326       | Normal      | 26/03/2018        | 031809241         | <0.0001          | <0.0000  |
| Telegraph Creek      | TC_SW11       | SW            | TC_SW11_180326       | Normal      | 26/03/2018        | 031809241         | 0.0006           | <0.0000  |
| Unnamed Water Bodies | AW_SW05       | SW            | AW_SW05              | Normal      | 28/04/2017        | 031716199         | <0.0001          | <0.0000  |
| Unnamed Water Bodies | AW_SW02       | SW            | AW_SW02              | Normal      | 28/04/2017        | 031716199         | <0.0001          | <0.0000  |
| Unnamed Water Bodies | AW_SW03       | SW            | AW_SW03              | Normal      | 28/04/2017        | 031716199         | <0.0001          | <0.0000  |
| Unnamed Water Bodies | AW_SW03       | SW            | JCGA20               | Field D     | 28/04/2017        | 031716199         | <0.0001          | <0.0000  |
| Unnamed Water Bodies | RAW_SW04      | SW            | RAW_SW04             | Normal      | 28/04/2017        | 031716199         | <0.0001          | <0.0000  |
| Unnamed Water Bodies | UN3_SW01      | SW            | UN3_SW01_180405      | Normal      | 05/04/2018        | 031810551         | <0.0001          | <0.0000  |
| Unnamed Water Bodies | UN3_SW02      | SW            | UN3_SW02_180405      | Normal      | 05/04/2018        | 031810551         | <0.0001          | <0.0000  |
| Unnamed Water Bodies | UN3_SW03      | SW            | UN3_SW03_180319      | Normal      | 19/03/2018        | 031808618         | 0.0195           | 0-0000   |
| Unnamed Water Bodies | UN3_SW04      | SW            | UN3_SW04_180405      | Normal      | 05/04/2018        | 031810551         | 0.0004           | <0.0000  |
| Unnamed Water Bodies | UN3_SW07      | SW            | UN3_SW07_180409      | Normal      | 09/04/2018        | 031810041         | <0.0001          | <0.0000  |
| Unnamed Water Bodies | UN3_SW08      | SW            | UN3_SW08_180403      | Normal      | 03/04/2018        | 031810041         | <0.0001          | <0.0000  |
| Unnamed Water Bodies | UN4_SW01      | SW            | UN4_SW01_180326      | Normal      | 26/03/2018        | 031809241         | 0.0007           | <0.0000  |





Table 5 – Laboratory results for PFAS in Marine Water – Jervis Bay and Wreck Bay

Department of Defence  
JBRF HMAS Creswell PFAS Investigation

|  |               |               |                      |             |                   |                   | PFOS/PFMS (Sum of Total) - Lab Calc |         |
|--|---------------|---------------|----------------------|-------------|-------------------|-------------------|-------------------------------------|---------|
|  |               |               |                      |             |                   |                   | µg/L                                | µg/L    |
| LOA                                      |               |               |                      |             |                   |                   | 0.0003                              | 0.0005  |
| PFAS NEMP 2018 Health Drinking Water     |               |               |                      |             |                   |                   | 0.07                                | 0.56    |
| PFAS NEMP 2018 Health Recreational Water |               |               |                      |             |                   |                   | 0.7                                 | 5.6     |
| Monitoring_Zone                          | Location_Code | Location_Type | Field_ID             | Sample_Type | Sampled_Date_Time | Lab_Report_Number |                                     |         |
| Jervis Bay                               | JB_MR01_SW    | SW            | JB_MR01_SW010_180312 | Normal      | 12/03/2018        | E51808453         | <0.05                               | <0.05   |
| Jervis Bay                               | JB_MR02_SW    | SW            | JB_MR02_SW050_180314 | Normal      | 14/03/2018        | E51810453         | <0.05                               | <0.05   |
| Jervis Bay                               | JB_MR03_SW    | SW            | JB_MR03_SW050_180312 | Normal      | 14/03/2018        | E51808457         | <0.05                               | <0.05   |
| Jervis Bay                               | JB_SW01       | SW            | JB_SW01_180406       | Normal      | 6/04/2018         | E51810551         | 0.0038                              | 0.0019  |
| Jervis Bay                               | JB_SW03       | SW            | JB_SW02_180326       | Normal      | 26/03/2018        | E51809241         | <0.0003                             | <0.0005 |
| Jervis Bay                               | JB_SW03       | SW            | JB_SW03_180326       | Normal      | 26/03/2018        | E51809241         | <0.0003                             | <0.0005 |
| Wreck Bay                                | WB_SW01       | SW            | WB_SW01_180328       | Normal      | 28/03/2018        | E51809328         | <0.0003                             | <0.0005 |
| Wreck Bay                                | WB_SW02       | SW            | WB_SW02_180328       | Normal      | 28/03/2018        | E51809328         | <0.0003                             | <0.0005 |
| Wreck Bay                                | WB_SW03       | SW            | WB_SW03_180328       | Normal      | 28/03/2018        | E51809328         | <0.0003                             | <0.0005 |

Table 6 – Laboratory results for PFAS in Biota - 403 Land



| Monitoring Zone                                   | Location Code | Location Type | Matrix Description          | Field ID             | Sample Type | SampleComments       | Sampled Date | Lab Report Number | PFOS/PFOA (Sum of Total) - Auto Calc |         |
|---|---------------|---------------|-----------------------------|----------------------|-------------|----------------------|--------------|-------------------|--------------------------------------|---------|
|   |               |               |                             |                      |             |                      |              |                   | mg/kg                                | mg/kg   |
| LOR   |               |               |                             |                      |             |                      |              |                   | 0.001                                |         |
| FSANZ 2017 Finfish (all) Trigger Point            |               |               |                             |                      |             |                      |              |                   | 0.0052                               | 0.041   |
| FSANZ 2017 Crustaceans and Molluscs Trigger Point |               |               |                             |                      |             |                      |              |                   | 0.065                                | 0.12    |
| Mary Creek  | MC_ES01_BIOTA | BT            | Beach Worm, whole           | MC_ES01_IM006_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.226                                | <0.002  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Beach Worm, whole           | MC_ES01_IM007_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.054                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Beach Worm, whole           | MC_ES01_IM008_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.073                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Beach Worm, whole           | MC_ES01_IM009_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.04                                 | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Beach Worm, whole           | MC_ES01_IM010_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.235                                | <0.01   |
| Mary Creek  | MC_ES01_BIOTA | BT            | Beach Worm, whole           | TS_QC101_180322      | Field_D     | MC_ES01_IM006_180320 | 22/03/2018   | ES1809257         | 0                                    | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Gudgeon, whole              | MC_ES01_VM006_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.337                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Gudgeon, whole              | MC_ES01_VM007_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.199                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Gudgeon, whole              | MC_ES01_VM008_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.41                                 | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Gudgeon, whole              | MC_ES01_VM009_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.703                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Gudgeon, whole              | MC_ES01_VM010_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.544                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Macrophyte, Plant           | MC_ES01_P001_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0.018                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Macrophyte, Plant           | MC_ES01_P002_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0.003                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Macrophyte, Plant           | MC_ES01_P003_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0                                    | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Macrophyte, Plant           | MC_ES01_P004_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0.006                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Macrophyte, Plant           | MC_ES01_P005_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0                                    | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Mullet, whole               | MC_ES01_VM011_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.349                                | 0.002   |
| Mary Creek  | MC_ES01_BIOTA | BT            | Mullet, whole               | MC_ES01_VM012_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.79                                 | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Mullet, whole               | MC_ES01_VM013_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.35                                 | 0.002   |
| Mary Creek  | MC_ES01_BIOTA | BT            | Mullet, whole               | MC_ES01_VM014_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.263                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Mullet, whole               | MC_ES01_VM015_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.246                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Mullet, Whole               | TS_QC101_180320      | Field_D     | MC_ES01_VM014_180320 | 20/03/2018   | ES1809257         | 0.383                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Prawn, Tail                 | MC_ES01_IM001_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.255                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Prawn, Tail                 | MC_ES01_IM002_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.021                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Whitebait, whole            | MC_ES01_VM001_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.648                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Whitebait, whole            | MC_ES01_VM002_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.502                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Whitebait, whole            | MC_ES01_VM003_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.515                                | <0.001  |
| Mary Creek  | MC_ES01_BIOTA | BT            | Whitebait, whole            | MC_ES01_VM004_180320 | Normal      |                      | 20/03/2018   | ES1809257         | 0.779                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Gudgeon, whole              | MC_FW02_VM001_180325 | Normal      |                      | 25/03/2018   | ES1809897         | 0.357                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Gudgeon, whole              | MC_FW02_VM002_180327 | Normal      |                      | 27/03/2018   | ES1809897         | 0.449                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Gudgeon, whole              | MC_FW02_VM003_180327 | Normal      |                      | 27/03/2018   | ES1809897         | 0.51                                 | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Gudgeon, whole              | MC_FW02_VM004_180327 | Normal      |                      | 27/03/2018   | ES1809897         | 0.631                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Gudgeon, whole              | MC_FW02_VM005_180327 | Normal      |                      | 27/03/2018   | ES1809897         | 0.554                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Moss from boulders, Plant   | MC_FW02_P001_180327  | Normal      |                      | 27/03/2018   | ES1809897         | 0.033                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Moss from boulders, Plant   | MC_FW02_P002_180327  | Normal      |                      | 27/03/2018   | ES1809897         | 0.037                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Moss from boulders, Plant   | MC_FW02_P003_180327  | Normal      |                      | 27/03/2018   | ES1809897         | 0.056                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Moss from boulders, Plant   | MC_FW02_P004_180327  | Normal      |                      | 27/03/2018   | ES1809897         | 0.039                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Moss from boulders, Plant   | MC_FW02_P005_180327  | Normal      |                      | 27/03/2018   | ES1809897         | 0.085                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Moss from boulders, Plant   | TS_QC103_180327      | Field_D     | MC_FW02_P002_180327  | 27/03/2018   | ES1809897         | 0.025                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Mountain Galaxid, whole     | MC_FW02_VM011_180327 | Normal      |                      | 27/03/2018   | ES1809897         | 0.412                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Mountain Galaxid, whole     | MC_FW02_VM012_180327 | Normal      |                      | 27/03/2018   | ES1809897         | 0.954                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Mountain Galaxid, whole     | MC_FW02_VM013_180327 | Normal      |                      | 27/03/2018   | ES1809897         | 0.48                                 | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Mountain Galaxid, whole     | MC_FW02_VM014_180327 | Normal      |                      | 27/03/2018   | ES1809897         | 0.966                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Mountain Galaxid, whole     | MC_FW02_VM015_180327 | Normal      |                      | 27/03/2018   | ES1809897         | 1.203                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Mountain Galaxid, whole     | TS_QC102_180327      | Field_D     | MC_FW02_VM011_180327 | 27/03/2018   | ES1809897         | 0.7                                  | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Smelt, whole                | MC_FW02_VM006_180327 | Normal      |                      | 27/03/2018   | ES1809897         | 1.949                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Smelt, whole                | MC_FW02_VM007_180327 | Normal      |                      | 27/03/2018   | ES1809897         | 1.022                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Smelt, whole                | MC_FW02_VM008_180327 | Normal      |                      | 27/03/2018   | ES1809897         | 0.958                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Temnocephalidae, whole      | MC_FW02_IM006_180325 | Normal      |                      | 24/03/2018   | ES1809257         | 0                                    | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Temnocephalidae, whole      | MC_FW02_IM007_180325 | Normal      |                      | 24/03/2018   | ES1809257         | 0                                    | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Temnocephalidae, whole      | MC_FW02_IM008_180325 | Normal      |                      | 25/03/2018   | ES1809257         | 0                                    | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Temnocephalidae, whole      | MC_FW02_IM009_180325 | Normal      |                      | 25/03/2018   | ES1809257         | 0.001                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Temnocephalidae, whole      | MC_FW02_IM010_180325 | Normal      |                      | 25/03/2018   | ES1809257         | 0                                    | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Temnocephalidae, whole      | TS-QC104_180325      | Interlab_D  | MC_FW02_IM008_180325 | 25/03/2018   | RN1194213         | 0.006                                | <0.0003 |
| Mary Creek  | MC_FW02_BIOTA | BT            | Tree Fern, Plant            | MC_FW02_P006_180327  | Normal      |                      | 27/03/2018   | ES1809897         | 0.01                                 | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Tree Fern, Plant            | MC_FW02_P007_180327  | Normal      |                      | 27/03/2018   | ES1809897         | 0.004                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Tree Fern, Plant            | MC_FW02_P008_180327  | Normal      |                      | 27/03/2018   | ES1809897         | 0.005                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Tree Fern, Plant            | MC_FW02_P009_180327  | Normal      |                      | 27/03/2018   | ES1809897         | 0.005                                | <0.001  |
| Mary Creek  | MC_FW02_BIOTA | BT            | Tree Fern, Plant            | MC_FW02_P010_180327  | Normal      |                      | 27/03/2018   | ES1809897         | 0.01                                 | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Ant, Invertebrate           | MC_TS01_I004_180326  | Normal      |                      | 26/03/2018   | ES1809900         | 0.001                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Ant, Invertebrate           | MC_TS01_I008_180326  | Normal      |                      | 26/03/2018   | ES1809900         | 0.002                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Ant, Invertebrate           | MC_TS01_I026_180327  | Normal      |                      | 27/03/2018   | ES1809900         | 0.003                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Ant, Invertebrate           | MC_TS01_I027_180327  | Normal      |                      | 27/03/2018   | ES1809900         | 0.003                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Beetle, Invertebrate        | MC_TS01_I005_180326  | Normal      |                      | 26/03/2018   | ES1809900         | 0.01                                 | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Beetle, Invertebrate        | MC_TS01_I009_180326  | Normal      |                      | 26/03/2018   | ES1809900         | 0.083                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Beetle, Invertebrate        | MC_TS01_I011_180326  | Normal      |                      | 26/03/2018   | ES1809900         | 0.071                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Beetle, Invertebrate        | MC_TS01_I020_180327  | Normal      |                      | 27/03/2018   | ES1809900         | 0.095                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Bull ant, Invertebrate      | MC_TS01_I001_180326  | Normal      |                      | 26/03/2018   | ES1809900         | 0.001                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Flying insect, Invertebrate | MC_TS01_I002_180326  | Normal      |                      | 26/03/2018   | ES1809900         | 0                                    | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Flying insect, Invertebrate | MC_TS01_I012_180326  | Normal      |                      | 26/03/2018   | ES1809900         | 0.001                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Flying insect, Invertebrate | MC_TS01_I013_180326  | Normal      |                      | 26/03/2018   | ES1809900         | 0                                    | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Flying insect, Invertebrate | MC_TS01_I014_180326  | Normal      |                      | 26/03/2018   | ES1809900         | 0                                    | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Flying insect, Invertebrate | MC_TS01_I018_180327  | Normal      |                      | 27/03/2018   | ES1809900         | 0.001                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Flying insect, Invertebrate | MC_TS01_I028_180327  | Normal      |                      | 27/03/2018   | ES1809900         | 0.001                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Leech, Invertebrate         | MC_TS01_I003_180326  | Normal      |                      | 26/03/2018   | ES1809900         | 0.007                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Leech, Invertebrate         | MC_TS01_I015_180327  | Normal      |                      | 26/03/2018   | ES1809900         | 0.007                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Leech, Invertebrate         | MC_TS01_I016_180327  | Normal      |                      | 27/03/2018   | ES1809900         | 0.015                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Leech, Invertebrate         | MC_TS01_I017_180327  | Normal      |                      | 27/03/2018   | ES1809900         | 0                                    | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Millipede, Invertebrate     | MC_TS01_I006_180326  | Normal      |                      | 27/03/2018   | ES1809900         | 0.019                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Millipede, Invertebrate     | MC_TS01_I024_180327  | Normal      |                      | 26/03/2018   | ES1809900         | 0.01                                 | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Millipede, Invertebrate     | MC_TS01_I025_180327  | Normal      |                      | 27/03/2018   | ES1809900         | 0.053                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Millipede, Invertebrate     | MC_TS01_I029_180328  | Normal      |                      | 26/03/2018   | ES1809900         | 0.056                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Millipede, Invertebrate     | MC_TS01_I030_180328  | Normal      |                      | 26/03/2018   | ES1809900         | 0.075                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Spider, Invertebrate        | MC_TS01_I010_180326  | Normal      |                      | 26/03/2018   | ES1809900         | 0.032                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Worm, Invertebrate          | MC_TS01_I007_180326  | Normal      |                      | 26/03/2018   | ES1809900         | 0.004                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Worm, Invertebrate          | MC_TS01_I019_180327  | Normal      |                      | 27/03/2018   | ES1809900         | 0.001                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Worm, Invertebrate          | MC_TS01_I021_180327  | Normal      |                      | 27/03/2018   | ES1809900         | 0.032                                | <0.001  |
| Mary Creek  | MC_TS01_BIOTA | BT            | Worm, Invertebrate          | MC_TS01_I022_180327  | Normal      |                      | 27/03/2018   | ES1809900         | 0.052                                | 0.001   |
| Mary Creek  | MC_TS01_BIOTA | BT            | Worm, Invertebrate          | MC_TS01_I023_180327  | Normal      |                      | 27/03/2018   | ES1809900         | 0.011                                |         |



Table 6 – Laboratory results for PFAS in Biota - 403 Land

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|   |               |               |                         |                      |             |                      |              |                   |       | PFOS/PFOA (Sum of Total) - Auto Calc |       |
|---|---------------|---------------|-------------------------|----------------------|-------------|----------------------|--------------|-------------------|-------|--------------------------------------|-------|
|   |               |               |                         |                      |             |                      |              |                   |       | Perfluorooctanoic acid (PFOA)        |       |
|   |               |               |                         |                      |             |                      |              |                   |       | mg/kg                                | mg/kg |
| LOR   |               |               |                         |                      |             |                      |              |                   |       |                                      | 0.001 |
| FSANZ 2017 Finfish (all) Trigger Point            |               |               |                         |                      |             |                      |              |                   |       | 0.0052                               | 0.041 |
| FSANZ 2017 Crustaceans and Molluscs Trigger Point |               |               |                         |                      |             |                      |              |                   |       | 0.065                                | 0.12  |
| Monitoring_Zone                                   | Location_Code | Location_Type | Matrix_Description      | Field_ID             | Sample_Type | SampleComments       | Sampled_Date | Lab_Report_Number |       |                                      |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Bivalve, whole          | SC_ES01_IM005_180406 | Normal      |                      | 06/04/2018   | ES1810453         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Bream, Fillet           | SC_ES01_VM001_180325 | Normal      |                      | 25/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Bream, Fillet           | SC_ES01_VM002_180325 | Normal      |                      | 25/03/2018   | ES1809257         | 0.006 | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Bream, Fillet           | SC_ES01_VM003_180325 | Normal      |                      | 25/03/2018   | ES1809257         | 0.005 | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Bream, Fillet           | SC_ES01_VM004_180325 | Normal      |                      | 25/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Bream, Fillet           | SC_ES01_VM005_180325 | Normal      |                      | 25/03/2018   | ES1809257         | 0.01  | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Bream, Fillet           | TS_QC105_180325      | Field_D     | SC_ES01_VM004_180325 | 25/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Macrophyte, Plant       | SC_ES01_P001_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Macrophyte, Plant       | SC_ES01_P002_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Macrophyte, Plant       | SC_ES01_P003_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Macrophyte, Plant       | SC_ES01_P004_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Macrophyte, Plant       | SC_ES01_P005_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Macrophyte, Plant       | SC_ES01_P006_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Macrophyte, Plant       | SC_ES01_P007_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Macrophyte, Plant       | SC_ES01_P008_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Macrophyte, Plant       | SC_ES01_P009_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Macrophyte, Plant       | SC_ES01_P010_180321  | Normal      |                      | 21/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Mullet, Fillet          | JC_QC101_180326      | Field_D     | SC_ES01_VM015_180326 | 26/03/2018   | ES1809897         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Mullet, Fillet          | SC_ES01_VM012_180326 | Normal      |                      | 26/03/2018   | ES1809897         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Mullet, Fillet          | SC_ES01_VM013_180326 | Normal      |                      | 26/03/2018   | ES1809897         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Mullet, Fillet          | SC_ES01_VM014_180326 | Normal      |                      | 26/03/2018   | ES1809897         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Mullet, Fillet          | SC_ES01_VM015_180326 | Normal      |                      | 26/03/2018   | ES1809897         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Prawn, Tail             | SC_ES01_IM006_180322 | Normal      |                      | 22/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Prawn, Tail             | SC_ES01_IM007_180322 | Normal      |                      | 22/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Prawn, Tail             | SC_ES01_IM008_180322 | Normal      |                      | 22/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Prawn, Tail             | SC_ES01_IM009_180322 | Normal      |                      | 22/03/2018   | ES1809257         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Whitebait, Fillet       | SC_ES01_VM006_180326 | Normal      |                      | 26/03/2018   | ES1809897         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Whitebait, Fillet       | SC_ES01_VM007_180326 | Normal      |                      | 26/03/2018   | ES1809897         | 0.001 | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Whitebait, Fillet       | SC_ES01_VM008_180326 | Normal      |                      | 26/03/2018   | ES1809897         | 0.001 | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Whitebait, Fillet       | SC_ES01_VM009_180326 | Normal      |                      | 26/03/2018   | ES1809897         | 0     | <0.001                               |       |
| Summercloud Creek                                 | SC_ES01_BIOTA | BT            | Whitebait, Fillet       | SC_ES01_VM010_180326 | Normal      |                      | 26/03/2018   | ES1809897         | 0.001 | <0.001                               |       |
| Summercloud Creek                                 | SC_FW01_BIOTA | BT            | Mountain Galaxid, whole | SC_FW01_VM001_180406 | Normal      |                      | 06/04/2018   | ES1810453         | 0.01  | <0.001                               |       |



Table 7 – Laboratory results for PFAS in Biota - Booderee National Park

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|                 |                                     |               |                          |                      |             |                      |              |                   |       | PFOS/PFOES (Sum of Total) - Auto Calc |       | Perfluorooctanoic acid (PFCA) |       |  |
|-----------------|-------------------------------------|---------------|--------------------------|----------------------|-------------|----------------------|--------------|-------------------|-------|---------------------------------------|-------|-------------------------------|-------|--|
|                 |                                     |               |                          |                      |             |                      |              |                   |       | mg/kg                                 | mg/kg | mg/kg                         | mg/kg |  |
|                 |                                     |               |                          |                      |             |                      |              |                   |       | 0.0052                                | 0.041 |                               |       |  |
| Lab             | IRAN2 2017 Fish (all) Trigger Point |               |                          |                      |             |                      |              |                   |       |                                       |       |                               |       |  |
| Monitoring_Zone | Location_Code                       | Location_Type | Matrix_Description       | Field_ID             | Sample_Type | SampleComments       | Sampled_Date | Lab_Report_Number |       |                                       |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Freshwater Shrimp, whole | LM_FW01_BM001_180403 | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Freshwater Shrimp, whole | LM_FW01_BM002_180403 | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Freshwater Shrimp, whole | LM_FW01_BM003_180403 | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Freshwater Shrimp, whole | LM_FW01_BM004_180403 | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Freshwater Shrimp, whole | LM_FW01_BM005_180403 | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Freshwater Shrimp, whole | TS_QC101_180403      | Field_D     | LM_FW01_BM001_180403 | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Gudgeon, whole           | LM_FW01_VM011_180406 | Normal      |                      | 06/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Macrophyte, Plant        | LM_FW01_P001_180403  | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Macrophyte, Plant        | LM_FW01_P002_180403  | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Macrophyte, Plant        | LM_FW01_P003_180403  | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Macrophyte, Plant        | LM_FW01_P004_180403  | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Macrophyte, Plant        | LM_FW01_P005_180403  | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Macrophyte, Plant        | LM_FW01_P006_180403  | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Macrophyte, Plant        | LM_FW01_P007_180403  | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Macrophyte, Plant        | LM_FW01_P008_180403  | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Macrophyte, Plant        | LM_FW01_P009_180403  | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Macrophyte, Plant        | LM_FW01_P010_180403  | Normal      |                      | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Macrophyte, Plant        | TS_QC102_180403      | Field_D     | LM_FW01_P009_180403  | 03/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Mountain Galaxiid, whole | LM_FW01_VM001_180405 | Normal      |                      | 05/04/2018   | E51810453         | 0.006 | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Mountain Galaxiid, whole | LM_FW01_VM002_180405 | Normal      |                      | 05/04/2018   | E51810453         | 0.002 | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Mountain Galaxiid, whole | LM_FW01_VM003_180406 | Normal      |                      | 06/04/2018   | E51810453         | 0.002 | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Smelt, whole             | LM_FW01_VM006_180405 | Normal      |                      | 05/04/2018   | E51810453         | 0.004 | <0.001                                |       |                               |       |  |
| Lake McKenzie   | LM_FW01_BIOTA                       | BT            | Spiny Crayfish, Tail     | LM_FW01_BM006_180409 | Normal      |                      | 09/04/2018   | E51810453         | 0     | <0.001                                |       |                               |       |  |



Table 8 – Laboratory results for PFAS in Biota – Jervis Bay and Wreck Bay Marine

|  |               |               |                                      |                      |             |                      |              |                   | PFOS/PFHx (Sum of Total) - Auto Calc |         |
|--|---------------|---------------|--------------------------------------|----------------------|-------------|----------------------|--------------|-------------------|--------------------------------------|---------|
|  |               |               |                                      |                      |             |                      |              |                   | Perfluorooctanoic acid (PFDA)        |         |
|  |               |               |                                      |                      |             |                      |              |                   | mg/kg                                | mg/kg   |
| LOR  |               |               |                                      |                      |             |                      |              |                   | 0.0052                               | 0.0003  |
| Interim Human Health Reference Value for Finfish, Crustaceans and Molluscs |               |               |                                      |                      |             |                      |              |                   | 0.0052                               | 0.041   |
| Monitoring_Zone  | Location_Code | Location_Type | Matrix_Description                   | Field_ID             | Sample_Type | SampleComments       | Sampled_Date | Lab_Report_Number |                                      |         |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Abalone, Fillet                      | JB_MR01_IM006_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Abalone, Fillet                      | JB_MR01_IM007_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Blue spot flathead, Fillet           | JB_MR01_VM001_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Blue spot flathead, Fillet           | JB_MR01_VM002_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Blue spot flathead, Fillet           | JB_MR01_VM003_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Blue spot flathead, Fillet           | JB_MR01_VM004_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Blue spot flathead, Fillet           | JB_MR01_VM005_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Bonito, Fillet                       | JB_MR01_VM011_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Bonito, Fillet                       | JB_MR01_VM012_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Bonito, Fillet                       | JB_MR01_VM013_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Bonito, Fillet                       | JB_MR01_VM014_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Bonito, Fillet                       | JB_MR01_VM015_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Bonito, Fillet                       | TS_QC101_180309      | Field_D     | JB_MR01_VM013_180309 | 09/03/2018   | RN1192017         | 0                                    | <0.0003 |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Bonito, Fillet                       | TS_QC103-180325      | Interlab_D  | JB_MR01_VM012_180309 | 25/03/2018   | RN1194213         | 0                                    | <0.0003 |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Kelp, Plant                          | JB_MR01_P001_180309  | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Kelp, Plant                          | JB_MR01_P002_180309  | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Kelp, Plant                          | JB_MR01_P003_180309  | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Kelp, Plant                          | JB_MR01_P004_180309  | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Kelp, Plant                          | JB_MR01_P005_180309  | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Kelp, Plant                          | TS_QC103_180309      | Interlab_D  | JB_MR01_P005_180309  | 09/03/2018   | RN1192017         | 0                                    | <0.0003 |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Leatherjacket, Fillet                | JB_MR01_VM006_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Leatherjacket, Fillet                | JB_MR01_VM007_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Leatherjacket, Fillet                | JB_MR01_VM008_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Leatherjacket, Fillet                | JB_MR01_VM009_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Leatherjacket, Fillet                | JB_MR01_VM010_180309 | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Neptunes Necklace, Plant             | JB_MR01_P011_180313  | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Neptunes Necklace, Plant             | JB_MR01_P012_180313  | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Neptunes Necklace, Plant             | JB_MR01_P013_180313  | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Neptunes Necklace, Plant             | JB_MR01_P014_180313  | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Neptunes Necklace, Plant             | JB_MR01_P015_180313  | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Oyster, whole                        | JB_MR01_IM12_180313  | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Oyster, whole                        | JB_MR01_IM13_180313  | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Oyster, whole                        | JB_MR01_IM14_180313  | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Oyster, whole                        | JB_MR01_IM15_180313  | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Ribbonweed, Plant                    | JB_MR01_P006_180309  | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Ribbonweed, Plant                    | JB_MR01_P007_180309  | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Ribbonweed, Plant                    | JB_MR01_P008_180309  | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Ribbonweed, Plant                    | JB_MR01_P009_180309  | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Ribbonweed, Plant                    | JB_MR01_P010_180309  | Normal      |                      | 09/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Urchin, without spines or mouthparts | JB_MR01_IM001_180308 | Normal      |                      | 08/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Urchin, without spines or mouthparts | JB_MR01_IM002_180308 | Normal      |                      | 08/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Urchin, without spines or mouthparts | JB_MR01_IM003_180308 | Normal      |                      | 08/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Urchin, without spines or mouthparts | JB_MR01_IM004_180308 | Normal      |                      | 08/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Urchin, without spines or mouthparts | JB_MR01_IM005_180308 | Normal      |                      | 08/03/2018   | ES1807493         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR01_BIOTA | BT            | Urchin, without spines or mouthparts | TS_QC104_180309      | Field_D     | JB_MR01_IM001_180308 | 09/03/2018   | RN1192017         | 0                                    | <0.0003 |
| Jervis Bay   | JB_MR02_BIOTA | BT            | Leatherjacket, Fillet                | JB_MR02_VM011_180406 | Normal      |                      | 06/04/2018   | ES1810453         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR02_BIOTA | BT            | Leatherjacket, Fillet                | JB_MR02_VM012_180406 | Normal      |                      | 06/04/2018   | ES1810453         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR02_BIOTA | BT            | Leatherjacket, Fillet                | JB_MR02_VM013_180406 | Normal      |                      | 06/04/2018   | ES1810453         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR02_BIOTA | BT            | Leatherjacket, Fillet                | TS_QC101_180406      | Field_D     | JB_MR02_VM011_180406 | 06/04/2018   | ES1810453         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR02_BIOTA | BT            | Tailor, Fillet                       | JB_MR02_VM006_180324 | Normal      |                      | 24/03/2018   | ES1809257         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR02_BIOTA | BT            | Tailor, Fillet                       | JB_MR02_VM007_180324 | Normal      |                      | 24/03/2018   | ES1809257         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR02_BIOTA | BT            | Tailor, Fillet                       | JB_MR02_VM008_180324 | Normal      |                      | 24/03/2018   | ES1809257         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR02_BIOTA | BT            | Tailor, Fillet                       | JB_MR02_VM009_180324 | Normal      |                      | 24/03/2018   | ES1809257         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR02_BIOTA | BT            | Tailor, Fillet                       | JB_MR02_VM010_180324 | Normal      |                      | 24/03/2018   | ES1809257         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Blue spot flathead, Fillet           | JB_MR03_VM001_180302 | Normal      |                      | 02/03/2018   | ES1807021         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Blue spot flathead, Fillet           | JB_MR03_VM002_180302 | Normal      |                      | 02/03/2018   | ES1807021         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Blue spot flathead, Fillet           | JB_MR03_VM003_180302 | Normal      |                      | 02/03/2018   | ES1807021         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Blue spot flathead, Fillet           | JB_MR03_VM004_180302 | Normal      |                      | 02/03/2018   | ES1807021         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Blue spot flathead, Fillet           | JB_MR03_VM005_180302 | Normal      |                      | 02/03/2018   | ES1807021         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Blue spot flathead, Fillet           | TS_QC101_180302      | Field_D     | JB_MR03_VM003_180302 | 02/03/2018   | ES1807021         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Conch without shell, whole           | JB_MR03_IM26_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Conch without shell, whole           | JB_MR03_IM27_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Conch without shell, whole           | JB_MR03_IM28_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Conch without shell, whole           | JB_MR03_IM29_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Conch without shell, whole           | JB_MR03_IM30_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Kelp, Plant                          | JB_MR03_P001_180313  | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Kelp, Plant                          | JB_MR03_P002_180313  | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Kelp, Plant                          | JB_MR03_P003_180313  | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Kelp, Plant                          | JB_MR03_P004_180313  | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Kelp, Plant                          | JB_MR03_P005_180313  | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Kelp, Plant                          | JC_QC102_180315      | Field_D     | JB_MR03_P001_180313  | 15/03/2018   | S90815            | 0                                    | <0.0005 |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Kelp, Plant                          | JC_QC102_180315      | Interlab_D  | JB_MR03_P001_180313  | 15/03/2018   | RN1194216         | 0                                    | <0.0003 |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Kelp, Plant                          | TS_QC102_180313      | Field_D     | JB_MR03_P001_180313  | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Leatherjacket, Fillet                | JB_MR03_VM006_180313 | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Leatherjacket, Fillet                | JB_MR03_VM007_180313 | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Leatherjacket, Fillet                | JB_MR03_VM008_180313 | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Leatherjacket, Fillet                | JB_MR03_VM009_180313 | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Leatherjacket, Fillet                | JB_MR03_VM010_180313 | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Leatherjacket, Fillet                | TS_QC101_180313      | Field_D     | JB_MR03_VM007_180313 | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Oyster, whole                        | JB_MR01_IM011_180313 | Normal      |                      | 13/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Ribbonweed, Plant                    | JB_MR03_P006_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Ribbonweed, Plant                    | JB_MR03_P007_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Ribbonweed, Plant                    | JB_MR03_P008_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Ribbonweed, Plant                    | JB_MR03_P009_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0                                    | <0.001  |
| Jervis Bay   | JB_MR03_BIOTA | BT            | Ribbonweed, Plant                    | JB_MR03_P010_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0                                    | <0.001  |



Table 8 – Laboratory results for PFAS in Biota – Jervis Bay and Wreck Bay Marine

Department of Defence  
JBRF HMAS Creswell PFAS Investigation

|   |               |               |                                      |                      |             |                      |              |                   |       | PFOS/PFHxS (Sum of Total) - Auto Calc |       |
|---|---------------|---------------|--------------------------------------|----------------------|-------------|----------------------|--------------|-------------------|-------|---------------------------------------|-------|
|   |               |               |                                      |                      |             |                      |              |                   |       | Perfluorooctanoic acid (PFOA)         |       |
|   |               |               |                                      |                      |             |                      |              |                   |       | mg/kg                                 | mg/kg |
| LOR   |               |               |                                      |                      |             |                      |              |                   |       | 0.0052                                | 0.003 |
| Interim Human Health Reference Value for Fish, Crustaceans and Molluscs |               |               |                                      |                      |             |                      |              |                   |       | 0.0052                                | 0.041 |
| Monitoring_Zone   | Location_Code | Location_Type | Matrix_Description                   | Field_ID             | Sample_Type | SampleComments       | Sampled_Date | Lab_Report_Number |       |                                       |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Seaweed, Plant                       | JB_MR03_P011_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Seaweed, Plant                       | JB_MR03_P012_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Seaweed, Plant                       | JB_MR03_P013_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Seaweed, Plant                       | JB_MR03_P014_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Seaweed, Plant                       | JB_MR03_P015_180315  | Normal      |                      | 15/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Seaweed, Plant                       | JC_QC101_180315      | Field_D     | JB_MR03_P014_180315  | 15/03/2018   | 590815            | 0     | <0.005                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Seaweed, Plant                       | JC_QC101_180315      | Interlab_D  | JB_MR03_P014_180315  | 15/03/2018   | RN1194216         | 0     | <0.0003                               |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Seaweed, Plant                       | JC_QC103_180315      | Field_D     | JB_MR04_P013_180315  | 15/03/2018   | 590815            | 0     | <0.005                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Seaweed, Plant                       | JC_QC103_180315      | Interlab_D  | JB_MR03_P013_180315  | 15/03/2018   | RN1194216         | 0     | <0.0003                               |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Squid, Tube                          | JB_MR03_IM008_180313 | Normal      |                      | 13/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Squid, Tube                          | JB_MR03_IM009_180324 | Normal      |                      | 24/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Squid, Tube                          | JB_MR03_IM010_180324 | Normal      |                      | 24/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Squid, Tube                          | TS_QC103_180313      | Field_D     | JB_MR03_IM008_180313 | 13/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Squid, Whole                         | JB_MR03_IM006_180313 | Normal      |                      | 13/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Squid, Whole                         | JB_MR03_IM007_180313 | Normal      |                      | 13/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Sydney Rock Oyster, whole            | JB_MR03_IM11_180314  | Normal      |                      | 14/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Sydney Rock Oyster, whole            | JB_MR03_IM12_180314  | Normal      |                      | 14/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Sydney Rock Oyster, whole            | JB_MR03_IM13_180314  | Normal      |                      | 14/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Sydney Rock Oyster, whole            | JB_MR03_IM14_180314  | Normal      |                      | 14/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Sydney Rock Oyster, whole            | JB_MR03_IM15_180314  | Normal      |                      | 14/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Tailor, Fillet                       | JB_MR03_VM011_180319 | Normal      |                      | 19/03/2018   | ES1809257         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Tailor, Fillet                       | JB_MR03_VM012_180319 | Normal      |                      | 19/03/2018   | ES1809257         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Tailor, Fillet                       | JB_MR03_VM013_180319 | Normal      |                      | 19/03/2018   | ES1809257         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Tailor, Fillet                       | JB_MR03_VM014_180319 | Normal      |                      | 19/03/2018   | ES1809257         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Tailor, Fillet                       | JB_MR03_VM015_180319 | Normal      |                      | 19/03/2018   | ES1809257         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Tailor, Fillet                       | TS_QC101_180324      | Field_D     | JB_MR03_VM014_180319 | 24/03/2018   | ES1809257         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Urchin, without spines or mouthparts | JB_MR03_IM001_180312 | Normal      |                      | 12/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Urchin, without spines or mouthparts | JB_MR03_IM002_180312 | Normal      |                      | 12/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Urchin, without spines or mouthparts | JB_MR03_IM003_180312 | Normal      |                      | 12/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Urchin, without spines or mouthparts | JB_MR03_IM004_180312 | Normal      |                      | 12/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Urchin, without spines or mouthparts | JB_MR03_IM005_180312 | Normal      |                      | 12/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Yabby, whole                         | JB_MR03_IM16_180314  | Normal      |                      | 14/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Yabby, whole                         | JB_MR03_IM17_180314  | Normal      |                      | 14/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Yabby, whole                         | JB_MR03_IM18_180314  | Normal      |                      | 14/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Yabby, whole                         | JB_MR03_IM19_180314  | Normal      |                      | 14/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Jervis Bay  | JB_MR03_BIOTA | BT            | Yabby, whole                         | JB_MR03_IM20_180314  | Normal      |                      | 14/03/2018   | ES1808457         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Abalone, Fillet                      | JC_QC101_180328      | Field_D     | WB_MR01_IM006_180328 | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Abalone, Fillet                      | WB_MR01_IM006_180328 | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Abalone, Fillet                      | WB_MR01_IM007_180328 | Normal      |                      | 28/03/2018   | ES1809897         | 0.002 | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Kelp, Plant                          | WB_MR01_P001_180327  | Normal      |                      | 22/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Kelp, Plant                          | WB_MR01_P002_180327  | Normal      |                      | 22/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Kelp, Plant                          | WB_MR01_P003_180328  | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Kelp, Plant                          | WB_MR01_P004_180328  | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Kelp, Plant                          | WB_MR01_P005_180328  | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Neptunes Necklace, Plant             | WB_MR01_PD11_180327  | Normal      |                      | 27/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Neptunes Necklace, Plant             | WB_MR01_PD12_180327  | Normal      |                      | 27/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Neptunes Necklace, Plant             | WB_MR01_PD13_180328  | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Neptunes Necklace, Plant             | WB_MR01_PD14_180328  | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Neptunes Necklace, Plant             | WB_MR01_PD15_180328  | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Seaweed, Plant                       | WB_MR01_P006_180327  | Normal      |                      | 22/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Seaweed, Plant                       | WB_MR01_P007_180327  | Normal      |                      | 27/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Seaweed, Plant                       | WB_MR01_P008_180328  | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Seaweed, Plant                       | WB_MR01_P009_180328  | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Seaweed, Plant                       | WB_MR01_P010_180328  | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Squid, Tube                          | WB_MR01_IM016_180406 | Normal      |                      | 06/04/2018   | ES1810453         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Squid, Tube                          | WB_MR01_IM017_180406 | Normal      |                      | 06/04/2018   | ES1810453         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Sydney Rock Oyster, whole            | WB_MR01_IM011_180328 | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Sydney Rock Oyster, whole            | WB_MR01_IM012_180328 | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Sydney Rock Oyster, whole            | WB_MR01_IM013_180328 | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Sydney Rock Oyster, whole            | WB_MR01_IM014_180328 | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Sydney Rock Oyster, whole            | WB_MR01_IM015_180328 | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Urchin, without spines or mouthparts | WB_MR01_IM001_180328 | Normal      |                      | 28/03/2018   | ES1809897         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Urchin, without spines or mouthparts | WB_MR01_IM021_180405 | Normal      |                      | 05/04/2018   | ES1810453         | 0     | <0.001                                |       |
| Wreck Bay   | WB_MR01_BIOTA | BT            | Urchin, without spines or mouthparts | WB_MR01_IM022_180405 | Normal      |                      | 05/04/2018   | ES1810453         | 0     | <0.001                                |       |





Table 10 – Laboratory results for Other Contaminants of Concern in Soil and Sediment - Booderee National Park

Department of Defence  
JBRF HMAS Creswell PFA5 Investigation

| OR                   | NEM 2013 Table 1A(1) HLL C Res | NEM 2013 Table 1B(2) Management Limits in Res / Parkland, Coarse Soil | Metals              |             |                 |                   |       |         |        |      |                              |                         |  | PAHs                                       |             |                   |                       |                       | TEH - NEM 2013 |                           |              |                      | OC Pesticides |       | Pesticide |       | Phenols |
|----------------------|--------------------------------|---|---------------------|-------------|-----------------|-------------------|-------|---------|--------|------|------------------------------|-------------------------|--|--|-------------|-------------------|-----------------------|-----------------------|----------------|---------------------------|--------------|----------------------|---------------|-------|-----------|-------|---------|
|                      |                                |   | Arsenic             | Cadmium     | Chromium (HexV) | Copper            | Lead  | Mercury | Nickel | Zinc | Altn (Sum of total) Lab Calc | Total 8 PAHs (Lab Calc) | Total 8 PAHs (in Lab FQ/2500AF) (Lab Calc) | Total 8 PAHs (in Lab FQ/2500AF) (Lab Calc) | OC Fraction | -C18-C18 Fraction | -C18-C18 Fraction (P) | -C18-C18 Fraction (R) | Total          | Hexachlorocyclopentadiene | Chlorpyrifos | Permethrin/phenathol | Phenol        |       |           |       |         |
|                      |                                |   |                     |             |                 |                   |       |         |        |      |                              |                         |  |  |             |                   |                       |                       |                |                           |              |                      |               | mg/kg | mg/kg     | mg/kg | mg/kg   |
| 300                  | 90                             | 300   | 17000               | 600         | 80              | 1200              | 30000 | 300     | 3      | 3    | 3                            | 3                       | 300  | 1000                                       | 2300        | 10000             |                       |                       |                |                           |              |                      |               |       |           |       |         |
| Monitoring_Zone      | Location_Code                  | Location_Type   | Field_ID            | Sample_Type | Sampled_Date    | Lab_Report_Number |       |         |        |      |                              |                         |  |  |             |                   |                       |                       |                |                           |              |                      |               |       |           |       |         |
| Bherwene Barrier     | BB_MW01                        | MW  | BB_MW01_0.0_180320  | Normal      | 20/03/2018      | 15180818          | <0.5  | <0.5    | 2      | <0.5 | <0.1                         | <0.2                    | <0.5                                       | 0.6  | 1.2         | <10               | <100                  | <100                  | <100           | <0.5                      | <0.5         | <1                   | <0.5          | <1    | <0.5      |       |         |
| Bherwene Barrier     | BB_MW02                        | MW  | BB_MW02_0.0_180320  | Normal      | 20/03/2018      | 15180818          | <0.5  | <0.5    | 3      | <0.5 | <0.1                         | <0.2                    | <0.5                                       | 0.6  | 1.2         | <10               | <100                  | <100                  | <100           | <0.5                      | <0.5         | <1                   | <0.5          | <1    | <0.5      |       |         |
| Bherwene Barrier     | BB_MW03                        | MW  | BB_MW03_0.0_180320  | Normal      | 20/03/2018      | 15180802          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | 0.6  | 1.2         | <10               | <100                  | <100                  | <100           | <0.5                      | <0.5         | <1                   | <0.5          | <1    | <0.5      |       |         |
| Captains Lagoon      | CL_MW02                        | MW  | CL_MW02_0.0_180321  | Normal      | 21/03/2018      | 15180802          | <0.5  | <0.5    | 17     | <0.5 | <0.1                         | <0.2                    | 7  | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <100                      | <0.5         | <0.5                 | <1            | <0.5  | <1        |       |         |
| Captains Lagoon      | CL_MW04                        | MW  | CL_MW_04_0.0_180326 | Normal      | 26/03/2018      | 15180924          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | 0.6  | 1.2         | <10               | <100                  | <100                  | <100           | <0.5                      | <0.5         | <1                   | <0.5          | <1    | <0.5      |       |         |
| Captains Lagoon      | CL_MW05                        | MW  | CL_MW_05_0.0_180326 | Normal      | 26/03/2018      | 15180924          | <0.5  | <0.5    | 3      | <0.5 | <0.1                         | <0.2                    | 12   | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <100                      | <0.5         | <0.5                 | <1            | <0.5  | <1        |       |         |
| Captains Lagoon      | CL_S007                        | SD  | CL_S007_0.0_0s      | Normal      | 18/04/2017      | 15170935          | <0.5  | <0.5    | 4      | <0.5 | <0.1                         | <0.2                    | 7  | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <100                      | <0.5         | <0.5                 | <1            | <0.5  | <1        |       |         |
| Captains Lagoon      | CL_S008                        | SD  | CL_S008_0.0_0s      | Normal      | 18/04/2017      | 15170935          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | 0.6  | 1.2         | <10               | <100                  | <100                  | <100           | <0.5                      | <0.5         | <1                   | <0.5          | <1    | <0.5      |       |         |
| Captains Lagoon      | CL_S008                        | SD  | IC0401              | Field_D     | 18/04/2017      | 15170935          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | 0.6  | 1.2         | <10               | <100                  | <100                  | <100           | <0.5                      | <0.5         | <1                   | <0.5          | <1    | <0.5      |       |         |
| Captains Lagoon      | CL_S012                        | SD  | CL_S012_0.0_180326  | Normal      | 26/03/2018      | 15180924          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | 0.6  | 1.2         | <10               | <100                  | <100                  | <100           | <0.5                      | <0.5         | <1                   | <0.5          | <1    | <0.5      |       |         |
| Captains Lagoon      | CL_S013                        | SD  | CL_S013_0.0_180326  | Normal      | 26/03/2018      | 15180924          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | 0.6  | 1.2         | <10               | <100                  | <100                  | <100           | <0.5                      | <0.5         | <1                   | <0.5          | <1    | <0.5      |       |         |
| Flatrack Creek       | FC_S013                        | SD  | FC_S013_0.0_180321  | Normal      | 21/03/2018      | 15180818          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | 0.6  | 1.2         | <10               | <100                  | <100                  | <100           | <0.5                      | <0.5         | <1                   | <0.5          | <1    | <0.5      |       |         |
| Flatrack Creek       | FC_S014                        | SD  | FC_S014_0.0_180406  | Normal      | 05/04/2018      | 15181051          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | 0.6  | 1.2         | <10               | <100                  | <100                  | <100           | <0.5                      | <0.5         | <1                   | <0.5          | <1    | <0.5      |       |         |
| Flatrack Creek       | FC_S015                        | SD  | FC_S015_0.0_180406  | Normal      | 05/04/2018      | 15181051          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | 0.6  | 1.2         | <10               | <100                  | <100                  | <100           | <0.5                      | <0.5         | <1                   | <0.5          | <1    | <0.5      |       |         |
| Summercloud Creek    | SC_S004                        | SD  | SC_S004_0.0_180406  | Normal      | 05/04/2018      | 15181051          | <0.5  | <0.5    | 3      | <0.5 | <0.1                         | <0.2                    | <0.5                                       | 0.6  | 1.2         | <10               | <100                  | <100                  | <100           | <0.5                      | <0.5         | <1                   | <0.5          | <1    | <0.5      |       |         |
| Telegraph Creek      | TC_S001                        | SD  | TC_S001_0.0_180321  | Normal      | 21/03/2018      | 15180818          | <0.5  | <0.5    | <0.5   | 7    | <0.1                         | <0.2                    | <0.5                                       | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <140                      | <120         | <0.5                 | <0.5          | <1    | <0.5      | <1    |         |
| Telegraph Creek      | TC_S002                        | SD  | TC_S002_0.0_180321  | Normal      | 21/03/2018      | 15180818          | <0.5  | <0.5    | 2      | <0.5 | <0.1                         | <0.2                    | <0.5                                       | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <130                      | <110         | <0.5                 | <0.5          | <1    | <0.5      | <1    |         |
| Telegraph Creek      | TC_S003                        | SD  | TC_S003_0.0_180320  | Normal      | 20/03/2018      | 15180818          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <100                      | <100         | <0.5                 | <0.5          | <1    | <0.5      | <1    |         |
| Telegraph Creek      | TC_S004                        | SD  | TC_S004_0.0_180321  | Normal      | 21/03/2018      | 15180818          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <110                      | <120         | <0.5                 | <0.5          | <1    | <0.5      | <1    |         |
| Telegraph Creek      | TC_S005                        | SD  | TC_S005_0.0_180320  | Normal      | 20/03/2018      | 15180818          | <0.5  | <0.5    | 8      | 9    | 18                           | <0.5                    | 3  | 15   | <1          | <1                | 1.2                   | <10                   | <110           | <110                      | <110         | <110                 | <1.5          | <1.5  | <1.5      | <1    | <0.5    |
| Telegraph Creek      | TC_S006                        | SD  | TC_S006_0.0_180320  | Normal      | 20/03/2018      | 15180818          | 17    | <0.5    | 23     | 19   | 10                           | <0.5                    | 8  | 32   | <1          | <1                | 1.2                   | <10                   | <120           | <120                      | <120         | <120                 | <1.5          | <1.5  | <1.5      | <1    | <0.5    |
| Telegraph Creek      | TC_S007                        | SD  | TC_S007_0.0_180321  | Normal      | 20/03/2018      | 15180818          | <0.5  | <0.5    | 7      | <0.5 | <0.1                         | <0.2                    | <0.5                                       | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <350                      | <250         | <0.5                 | <0.5          | <1    | <0.5      | <1    |         |
| Telegraph Creek      | TC_S008                        | SD  | TC_S008_0.0_180320  | Normal      | 20/03/2018      | 15180818          | 6     | <0.5    | 8      | 9    | 13                           | <0.5                    | <0.5                                       | 10   | <1          | <1                | 1.2                   | <10                   | <110           | <790                      | <660         | <1.5                 | <1.5          | <1.5  | <1        | <0.5  |         |
| Telegraph Creek      | TC_S009                        | SD  | TC_S009_0.0_180321  | Normal      | 21/03/2018      | 15180818          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <100                      | <100         | <0.5                 | <0.5          | <1    | <0.5      | <1    |         |
| Telegraph Creek      | TC_S010                        | SD  | TC_S010_0.0_180326  | Normal      | 26/03/2018      | 15180924          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <100                      | <100         | <0.5                 | <0.5          | <1    | <0.5      | <1    |         |
| Telegraph Creek      | TC_S011                        | SD  | TC_S011_0.0_180326  | Normal      | 26/03/2018      | 15180924          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <100                      | <100         | <0.5                 | <0.5          | <1    | <0.5      | <1    |         |
| Unnamed Water Bodies | UN3_S001                       | SD  | UN3_S001_0.0_180405 | Normal      | 05/04/2018      | 15181051          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <100                      | <100         | <0.5                 | <0.5          | <1    | <0.5      | <1    |         |
| Unnamed Water Bodies | UN3_S002                       | SD  | UN3_S002_0.0_180409 | Normal      | 03/04/2018      | 15181004          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <100                      | <100         | <0.5                 | <0.5          | <1    | <0.5      | <1    |         |
| Unnamed Water Bodies | UN3_S003                       | SD  | UN3_S003_0.0_180319 | Normal      | 19/03/2018      | 15180802          | <0.5  | <0.5    | 5      | 3    | 13                           | <0.5                    | 4  | 5  | <1          | <1                | 1.2                   | <10                   | <180           | <160                      | <160         | <1.5                 | <1.5          | <1.5  | <1        | <0.5  |         |
| Unnamed Water Bodies | UN3_S004                       | SD  | UN3_S004_0.0_180407 | Normal      | 05/04/2018      | 15181051          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <100                      | <100         | <0.5                 | <0.5          | <1    | <0.5      | <1    |         |
| Unnamed Water Bodies | UN3_S007                       | SD  | UN3_S007_0.0_180403 | Normal      | 03/04/2018      | 15181004          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <100                      | <100         | <0.5                 | <0.5          | <1    | <0.5      | <1    |         |
| Unnamed Water Bodies | UN3_S008                       | SD  | UN3_S008_0.0_180403 | Normal      | 03/04/2018      | 15181004          | <0.5  | <0.5    | 2      | <0.5 | <0.1                         | <0.2                    | <0.5                                       | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <100                      | <100         | <0.5                 | <0.5          | <1    | <0.5      | <1    |         |
| Unnamed Water Bodies | UN4_S001                       | SD  | UN4_S001_0.0_180326 | Normal      | 26/03/2018      | 15180924          | <0.5  | <0.5    | <0.5   | <0.5 | <0.1                         | <0.2                    | <0.5                                       | <0.5                                       | 0.6         | 1.2               | <10                   | <100                  | <100           | <100                      | <100         | <0.5                 | <0.5          | <1    | <0.5      | <1    |         |



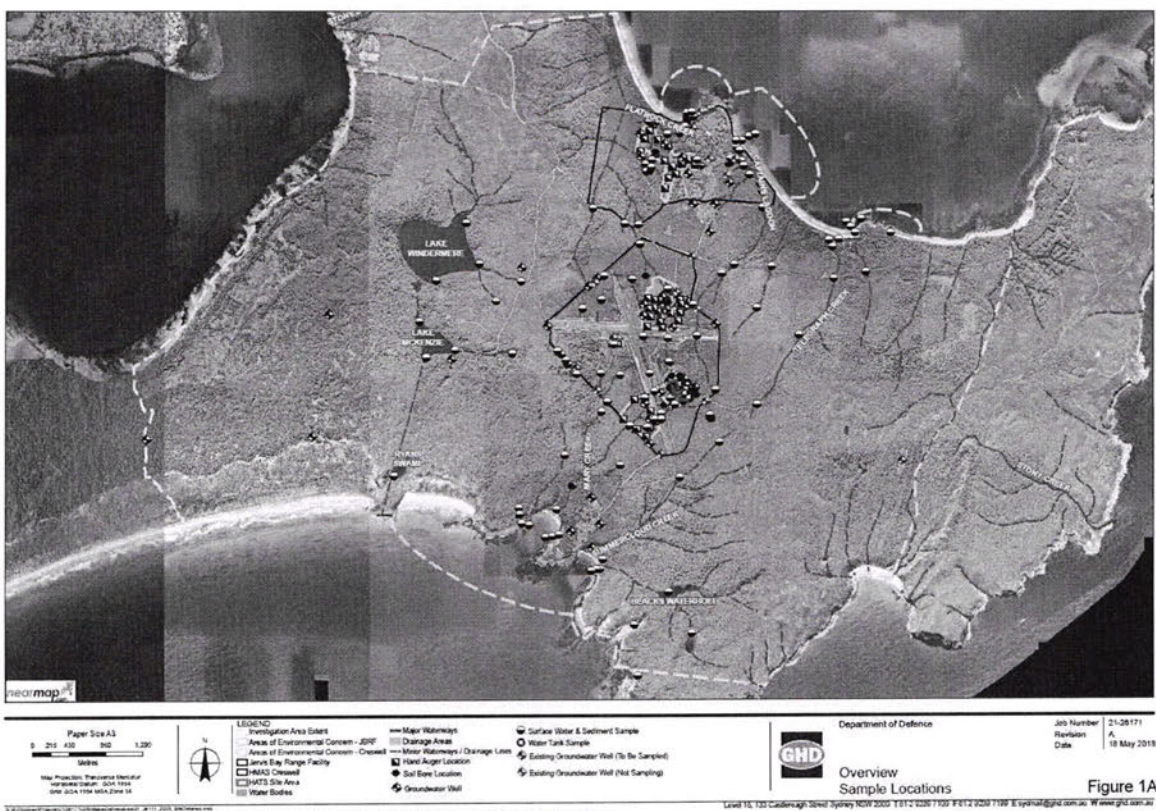
Table 11 – Laboratory results for Other Contaminants of Concern in Surface Water and Groundwater - 403 Land

Department of Defence  
JBRF HMAS Crewnet PFAS Investigation

| MFLM 2013 Table 1C GSA, Drinking Water | Metals        |               | PACs            |             | SVOCs            |                   | BTEX  |        | OC Pesticides |       |
|--|---------------|---------------|-----------------|-------------|------------------|-------------------|-------|--------|---------------|-------|
|  | mg/L          | mg/L          | mg/L            | mg/L        | mg/L             | mg/L              | mg/L  | mg/L   | mg/L          | mg/L  |
| 0.01                                   | 0.001         | 0.002         | 0.001           | 0.001       | 0.01             | 0.01              | 0.001 | 0.001  | 0.01          | 0.1   |
| 0.01                                   | 0.001         | 0.002         | 0.001           | 0.001       | 0.01             | 0.01              | 0.001 | 0.001  | 0.01          | 0.1   |
| Monitoring Zone                        | Location Code | Location Type | Field ID        | Sample Type | Sample Date/Time | Lab Report Number |       |        |               |       |
| Mary Creek                             | MC_MF001      | MW            | MC_MF002_180411 | Normal      | 11/04/2018       | 151810721         | -     | <0.01  | <0.001        | <0.01 |
| Mary Creek                             | MC_MF003      | MW            | MC_MF004_180411 | Normal      | 11/04/2018       | 151810721         | -     | <0.01  | <0.001        | <0.01 |
| Mary Creek                             | MC_MF004      | MW            | MC_MF004_180411 | Normal      | 11/04/2018       | 151810721         | -     | <0.01  | <0.001        | <0.01 |
| Mary Creek                             | MC_SW01       | SW            | MC_SW01_180320  | Normal      | 20/03/2018       | 151809118         | -     | 0.001  | <0.001        | <0.01 |
| Mary Creek                             | MC_SW02       | SW            | MC_SW02_180323  | Normal      | 23/03/2018       | 151809241         | -     | <0.001 | <0.001        | <0.01 |
| Mary Creek                             | MC_SW03       | SW            | MC_SW03_180323  | Normal      | 23/03/2018       | 151809241         | -     | <0.001 | <0.001        | <0.01 |
| Mary Creek                             | MC_SW04       | SW            | MC_SW04_1804    | Normal      | 19/04/2018       | 151811895         | -     | <0.001 | <0.001        | <0.01 |
| Mary Creek                             | MC_SW05       | SW            | MC_SW05_180328  | Normal      | 28/03/2018       | 151809118         | -     | <0.01  | <0.001        | <0.01 |
| Mary Creek                             | MC_SW10       | SW            | MC_SW10_180320  | Normal      | 20/03/2018       | 151808818         | -     | <0.01  | <0.001        | <0.01 |
| Mary Creek                             | MC_SW10       | SW            | MC_SW10_180328  | Normal      | 28/03/2018       | 151809118         | -     | 0.001  | <0.001        | <0.01 |
| Summercloud Creek                      | SC_SW01       | SW            | SC_SW01_180323  | Normal      | 23/03/2018       | 151809241         | -     | <0.001 | <0.001        | <0.01 |
| Summercloud Creek                      | SC_SW02       | SW            | SC_SW02_180323  | Field D     | 23/03/2018       | 151809241         | -     | <0.001 | <0.001        | <0.01 |
| Summercloud Creek                      | SC_SW02       | SW            | SC_SW02_180323  | Normal      | 23/03/2018       | 151809241         | -     | <0.001 | <0.001        | <0.01 |
| Summercloud Creek                      | SC_SW03       | SW            | SC_SW03_180323  | Normal      | 23/03/2018       | 151809241         | -     | <0.001 | <0.001        | <0.01 |
| Unamed Water Bodies                    | UN1_SW03      | SW            | UN1_SW03_180327 | Normal      | 27/03/2018       | 151809118         | -     | <0.01  | <0.001        | <0.01 |
| Unamed Water Bodies                    | UN1_SW04      | SW            | UN1_SW04_180327 | Field D     | 27/03/2018       | 151808818         | -     | <0.001 | <0.001        | <0.01 |
| Unamed Water Bodies                    | UN2_SW01      | SW            | UN2_SW01_180322 | Normal      | 22/03/2018       | 151808818         | -     | <0.001 | <0.001        | <0.01 |
| Unamed Water Bodies                    | UN2_SW01      | SW            | UN2_SW01_180322 | Normal      | 22/03/2018       | 151808818         | -     | <0.001 | <0.001        | <0.01 |
| Unamed Water Bodies                    | UN2_SW02      | SW            | UN2_SW02_180322 | Interflop D | 22/03/2018       | 151808818         | -     | <0.001 | <0.001        | <0.01 |
| Unamed Water Bodies                    | UN2_SW02      | SW            | UN2_SW02_180322 | Normal      | 22/03/2018       | 151808818         | -     | <0.001 | <0.001        | <0.01 |
| Unamed Water Bodies                    | UN2_SW04      | SW            | UN2_SW04_180322 | Normal      | 22/03/2018       | 151808818         | -     | <0.001 | <0.001        | <0.01 |
| Unamed Water Bodies                    | UN2_SW05      | SW            | UN2_SW05_180322 | Normal      | 22/03/2018       | 151808818         | -     | <0.001 | <0.001        | <0.01 |
| Unamed Water Bodies                    | UN3_SW05      | SW            | UN3_SW05_180328 | Normal      | 28/03/2018       | 151809118         | -     | 0.01   | <0.001        | <0.01 |
| Unamed Water Bodies                    | UN3_SW06      | SW            | UN3_SW06_180328 | Interflop D | 28/03/2018       | 151809118         | 0.012 | <0.001 | <0.001        | <0.01 |
| Unamed Water Bodies                    | UN3_SW06      | SW            | UN3_SW06_180328 | Normal      | 28/03/2018       | 151809118         | -     | <0.01  | <0.001        | <0.01 |
| Wreck Bay                              | WB_SW01       | SW            | WB_SW01_180328  | Normal      | 28/03/2018       | 151809118         | -     | <0.01  | <0.001        | <0.01 |
| Wreck Bay                              | WB_SW02       | SW            | WB_SW02_180328  | Normal      | 28/03/2018       | 151809118         | -     | <0.01  | <0.001        | <0.01 |
| Wreck Bay                              | WB_SW03       | SW            | WB_SW03_180328  | Normal      | 28/03/2018       | 151809118         | -     | <0.01  | <0.001        | <0.01 |



Records purposes - ALL Figures have reduced quality, to original letter issue



Records purposes - ALL Figures have reduced quality, to original letter issue



|   |  |   |   |
|---|--|---|---|
| <p><b>Figure Size A3</b></p> <p>0 20 40 80<br/>Metres</p> <p>Map Projection: Transverse Mercator<br/>Reference Datum: GDA 1984<br/>Map Scale: 1:500 (MGA Zone 56)</p> | <p><b>LEGEND</b></p> <ul style="list-style-type: none"> <li> Investigation Free State</li> <li> Area of Environmental Concern (AEC)</li> <li> Area of Environmental Concern (AEC) Boundary</li> <li> Sewerage Treatment Plant</li> <li> Minor Waterways / Drainage Lines</li> <li> Sample Location</li> <li> Investigation Point</li> <li> Sewer Treatment Plant</li> <li> Existing Infrastructure (In the landscape)</li> </ul> | <p>Department of Defence</p> <p> GHD</p> <p><b>Area Of Environmental Concern A<br/>Sample Locations</b></p> | <p>Job Number: 21-20171<br/>Revision: A<br/>Date: 18 May 2018</p> <p><b>Figure 1B</b></p> |
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|---|--|---|--|---|
| <p>Map Scale A3<br/>0 10 20 30<br/>Metres<br/>Map Projection: Transverse Mercator<br/>Horizontal Datum: GDA 1984<br/>Grid: GDA 1984 MGA Zone 54</p> |  | <p><b>LEGEND</b></p> <ul style="list-style-type: none"> <li>Investigation Area Bound</li> <li>Area of Environmental Concern (AEC)</li> <li>Area War Storage Facility</li> <li>Major Waterways</li> <li>Minor Waterways / Drainage Lines</li> <li>Hand Auger Location</li> <li>Groundwater Well</li> <li>Surface Water &amp; Instream Structure</li> </ul> | <p>Department of Defense</p> <p><b>GHD</b></p> <p>Area Of Environmental Concern B<br/>Sample Locations</p> | <p>Job Number: 21-20171<br/>Revision: A<br/>Date: 18 May 2018</p> |
|---|--|---|--|---|

Figure 1C  
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