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Agenda	
Introductions	
Investigation Progress (DSI scope and schedule)	 Detailed Site Investigation (DSI) SAQP & Conceptual Site Model (CSM) Factual memorandums
Future Stages (schedule)	 Human Health and Ecological Risk Assessment (HHERA) Numerical Groundwater Model
Site Auditor	- Update from site auditor
Stakeholder Engagement	Meetings and briefsCommunity enquiries
Risks and Issues	
Other Business	
Close	

Stedman, Andrew (Health)

From: Monday, 16 April 2018 3:43 PM Sent: To: J; u; η u; Clapham, David; Chester, Heath; Stedman, Andrew (Health); ; Hudson, Lyndell (Health); RE: JBRF PCG Meeting No. 13 Agenda Subject:

Attachments:

2126171_REP_February 2018 Monthly Report.pdf

ear JBRF PCG,

Please see attached the February 2018 monthly reports for your records. Please join us for meeting Agenda for JBRF PCG meeting No. 13, tomorrow, 17 April at 2 pm. Dial in Details are below.

Join WebEx meeting

Meeting number:

If you are a host, go here to view host information.

Join by phone

Call-in toll-free number: 1 (Australia) 1 Australia) Call-in number: +

Show global numbers

Participant Pin Code:

Regards,

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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 February 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 31 January 2018 and 28 February 2018.

2.0 Critical items

2.1 New items

- SAQP Rev 2.1 administrative update to SAQP Rev 3 as final version. Rev 3 update contains no changes to content from Rev 2.1, which was reviewed by Defence, auditor, agencies and WBACC 07/02/18.
- HHRA for RANSSSS closed loop water systems, Rev 2 issued as final to Defence incorporating response to auditor comments. HHRA recommends no changes to RANSSSS operations are required in response to interim risk analysis 08/02/18.
- GHD drafted permit conditions to conduct the investigation on 403 lands, which were reviewed and approved by WBACC. Formal permit application issued by GHD to WBACC 13/02/18.
- WBACC provide permit (GHD/DEF 0001/2018) under section 76 of the aboriginal land grant (Jervis Bay territory) by-laws 2016. Permit dated 15/02/18 authorises GHD to conduct investigation on 403 lands. Permit period covers investigation activity up to and including 01 March 2020.
- GHD accompany Defence feral animal control contractor receiving two fox and four rabbit samples from JBRF area on 9/02/18 and four rabbits samples from Creswell area on 22/02/18.
- Permit to collect biota and remove from Booderee National parks received.
- Defence environmental clearance certificate to conduct Biota sampling at HMAS Creswell and JBRF received.

- Meeting with WBACC CEO, Supervisor, Field assistant and Administration assistant held 10:00 – 11:45 on 27/02/2018 with positive outcomes including investigation planning and identification of cultural supervisors, field hands and administration assistants.
- Requirement for informal community BBQ identified by WBACC Sunday 11th March to inform the community of upcoming investigation activities.
- Auditor inspects on site sampling areas (27/28 February) and aquatic and terrestrial biota sampling team activities, with no issues identified to GHD.
- BNP permit issued which has triggered application to remove biota from National park, which is underway.
- Original permit for soil water sampling within BNP has expired and has been resubmitted by GHD.

2.2 Previously raised items to be addressed

 WBACC have engaged The University of Newcastle (UON), Global Centre for Environmental Remediation (GCER) to support reviews of the project documents and provide advice on the investigation. WBACC have advised that support for the issue of a permit will be provided in February 2018.

3.0 Project progress

- The following items have been completed this reporting period:
 - Commencement of on site biota sampling >40% of planned marine and terrestrial samples taken from JBRF, Creswell, Flatrock Creek and Captains Lagoon areas.
 - WBACC provide permit for access to conduct the investigation on 403 land.
 - WBACC employment opportunities identified with a meeting held to plan investigation and formally introduce cultural supervisors, field hand and administration assistants.

3.1 Project impacts

- Cultural supervisors and GHD sampling teams relationship and ability to conduct the required sampling within allocated timeframes.
- Unknown cultural sensitivities associated with planned sample locations.
- Rain event timing and low levels of surface water flows throughout Jervis Bay and wider area.

3.2 Project meetings

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

Table 1: Summary of meetings held during the February reporting period

Meeting date	Meeting title	Participants	Minutes circulated
Recurring Wednesday's	Weekly meetings	JBRF project team – Defence, GHD & Site auditor	Yes
21/02/2018	PCG Monthly	Defence, GHD, Site auditor, Agencies and stakeholders	Yes
27/02/2018	WBACC cultural supervision	WBACC CEO, cultural supervisors, field hand, administration assistant and GHD	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 February reporting period

Document status	Title	Date submitted
Final	2126171-LET-1-HHRA RANSSSS Rev 2	08/02/18

3.4 Project Milestones

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

Receipt of WBACC permit to conduct the investigation on 403 lands.

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

- All permits finalised to conduct the investigation within BNP.
- On site biota sampling.
- Finalise sewer system investigation.
- Commence 403 and BNP investigation activities

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 February reporting period

Scope item	Achieved to date	Planned for next month
Monitor Project progress and provide comment	Yes	ongoing
Site audit of biota sampling activities	Yes	complete

5.0 Community enquiries

In this reporting period:

- No community independent enquiries were received via the Community Hotline (1800 987 618) and email (<u>Jervisbay@ghd.com.au</u>)
- 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 February reporting period

Meeting date	Meeting title	Participants	Minutes circulated
21/02/2018	PCG 11 Monthly	Defence, GHD, Site auditor, Agencies and	Yes
	meeting	stakeholders	

7.0 Defence Legal Support

The Office of Defence Special Council is assisting with the following items:

Nil

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 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 Recommendation	18/07/2017	21/07/2017	GHD
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
PMAP Template Workshop	28/09/2018	28/09/2018	GHD/Defence/Auditor
PMAP Draft Report preparation	01/10/2018	19/10/2018	GHD
Defence and Auditor review of Draft PMAP report	22/10/2018	02/11/2018	GHD/Defence/Auditor
PMAP report workshop	15/10/2018	15/10/2018	GHD/Defence/Auditor
Finalise PMAP Report	30/10/2018	12/11/2018	GHD/Defence
Community Information Sessions	21/03/2017	14/11/2018	
Community Information Session 3	TBC	TBC	GHD/Defence/Agency/Community
Community Information Session 4 (Post reporting)	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

Stedman, Andrew (Health)

From: Sent:

To:

Subject: Attachments:

JBRF-PGC Meeting Minutes 13 - April 2018.pdf

Please see attached minutes from the JBRF PCG meeting held 17 April 18. thank you for your support.

Regards,



GHD

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PFAS Environmental Investigation – Jervis Bay Range Facility PROJECT CONTROL GROUP MEETING #12

Administrative Details	
Date	Tuesday 17 April 2018
Time	14:00 – 14:50
Venue	Teleconference
Dial-in Details	Toll Toll-free Participant PIN:
Chair	, Defence Project Manager
Minutes	Taken by

ATTENDEES	
Defence	
	Project Manager PFAS Branch
Lead Contractor (LC), GHD	
	Service Line Leader - LC Project Director
	Principal Environmental Consultant
	Principal – Stakeholder Engagement
	Stakeholder Engagement
	Project Manager
Site Auditor (SA), AECOM	
	Environment Defence appointed peer review
Agencies	
David Clapham (DC2)	ACT Senior Policy Officer - Intergovernmental Relations
Sashini Salgado (SS)	Act Government
	NSW Health
	Shoalhaven Council environmental unit
	Senior Environmental Officer NSW EPA PFAS unit
	NSW EPA
	NSW EPA
	ACT Construction, Environment and Workplace Protection
	Spotless - Defence Estate Management Shoalhaven
Lyndell Hudson (LH)	ACT Health
	Booderee National Parks

Welcome and Conduct of PCG Meetings

Defence PFAS -Welcomed attendees to the JBRF PFAS Investigation meeting. (GHD) notes apologies received from Peter Curtis, Glendon Lee, David Clapham

Investigation Progress Detailed Site Investigation

- 1. (GHD) Provided an overview of the investigation:
 - For onsite areas which includes HMAS Creswell, JBRF, Flat Rock Creek and Captains Lagoon, GHD has generally completed all field works including the soil, sediment and water sampling conducted last year and the recently completed terrestrial and marine biota sampling. Some planned biota sample sites such as Flat Rock Creek freshwater were abandoned as no water or biota was available and in some cases specific species trophic levels in areas were unavailable. In summary the off site biota sampling obtained a satisfactory number of samples to represent each area.
 - GHD has also taken some additional onsite water samples in response to the results received from the Defence water quality monitoring program, to validate the results and incorporate these results into our investigation.
 - As discussed at the previous meeting GHD had commenced sampling offsite, which includes Wreck Bay, Mary's Creek, Summercloud Creek, various unnamed water bodies and sites within 403 land, the national park and Jervis Bay village.
 - The completed offsite fieldwork includes soil, sediment and surface water sampling and
 installation and sampling of groundwater monitoring wells, including two 30 m deep wells east
 of Lake Windemeere and various wells in and around Wreck Bay, Village Road and the
 National Park. GHD has also sampled the newly installed groundwater wells, undertaken slug
 testing and recovered data logger information from groundwater wells installed last year.
 - Offsite biota sampling is expected to be completed by the end of next week. This includes
 marine, estuarine and terrestrial biota sampling and sampling of residential gardens, with some
 sample locations adjusted to avoid culturally sensitive areas.
 - Residential garden sampling has been completed that targeted fruit and vegetables available at the time, this included citrus, common vegetables and Lillipillis from Wreck bay, Village road and the Jervis Bay school.
 - · Remaining activities for the field investigation include:
 - Planning and identification of monitoring locations to support groundwater modelling.
 - Wet weather event surface water and sediment sampling, which is proving difficult to schedule noting the absence of significant rain event. GHD is looking towards a wet weather event in May and will prioritise catchments/areas based on the review of first round of results.
 - The field investigation teams have obtained biota samples from secondary sites that may be submitted for laboratory analysis should primary sample results identify information gaps.
 - There have been minor instances where GHD has been required to deviate from the SAQP due
 to the field conditions, such as no surface/ground water, lack of biota, physical access or
 cultural boundaries. In all cases the SAQP has been considered and alternative sites or species
 sampled to maintain planned objectives.
 - Results for onsite terrestrial and estuarine biota and Jervis Bay marine have started returning
 from the primary lab and following receipt of associated QA samples and review of the data by
 GHD, factual memos will be issued to the PCG. To better allow for review and interpretation,
 ten or more factual letters will be issued to allow logical grouping of the results by area,
 catchment and sample type.

2. (GHD) Continued:

- Early raw results received (which have not been validated) have indicated PFAS concentrations in some terrestrial and estuarine biota of JBRF, Creswell, Captains Lagoon and Flat Rock Creek. A positive sign is that the results received so far have not indicated a detectable level of PFAS in any of the biota from Jervis Bay either adjacent Creswell or the reference site in the vicinity of Point Perpendicular (northern headland for the bay).
- WBACC cultural supervisors and assistants have been monitoring and supporting the GHD
 field teams, providing valuable local insight and experience along the way, which has allowed
 the sampling teams to target the popular biota species sites that the community may come in
 contact with.
- 3. The departures from the SAQP have been required, in response to the on ground conditions, such as dry water courses.
- 4. Some preliminary sample results which have not been verified have been provided to NSW and ACT EPA, at the request of NSW EPA, that included biota samples taken from marine areas of Jervis Bay which showed no detection of PFAS, however preliminary results have indicated the presence of PFAS in samples collected from estuaries adjacent Creswell. The proviso off actual results letters in that will be made available in the near term will enable ease of readability and understanding of the presence of PFAS in biota to inform the Human Health and Ecological Risk Assessment.

5. Comments Requested

- (NSW EPA) What is the timeframe for results data for the remaining biota that has been collected?
- of the biota samples have been collected and submitted for analysis with the remaining collection of biota still underway. Once received from the lab, a three to five day turnaround is required for results to review, validate and correlate the associated QA. GHD is expecting to be able to provide the first group of results towards the end of April, noting that the grouping of results by specific class, area or catchment requires all the sample results to be received to enable review and issue of factual letters.
- Defence seeks to better understand jurisdictional responsibilities between NSW EPA,
 ACT EPA and JBTA for any potential recommendations that may need to be acted on with Jervis Bay Territory biota results.
- (NSW/ACT EPA) The agencies will liaise later this week to identify a strategy of responsibility..
- (Auditor) Deviation from the SAQP requires communication to the auditor. GHD to provide advice to the auditor.
- (GHD) We would use the existing table from the SAQP and identify where objectives have been achieved or where required, identify deviations with justification and comment.
- (Auditor) Include details of any resultant data gap
- Advised GHD to couple SAQP deviations with rain event planning information, as the local rainfall forecast and associated planning challenges would like to be understood.

Future Stages - Human Health and Ecological Risk Assessment (HHERA)

Refer above in the DSI minutes for information on the HHERA (biota collection).

Site Auditor Update

- 6. Awaiting results and any deviations from SAQP, with no specific comment from the auditor.
- 7. Comments Requested
 - · Nil

Stakeholder Engagement

- 8. A unique situation with Jervis Bay Territory is the Wreck Bay community, which has specific protocols required to enable the investigation to be conducted. Defence and GHD have been working with the WBACC for some time and have engaged some members of the community to support the investigation through cultural supervision, field and administration assistance, which has been working very well. Defence has committed to the community and the WBACC Board, to discuss any results prior to any recommendations or notifications being made. Defence seeks to protect the developing relationship with the Wreck Bay community, by ensuring there is an opportunity to share early results and prior to any advice issued by the EPA or other agencies in relation to the PFAS contamination at Wreck Bay and Jervis Bay.
- 9. GHD has completed vegetable and soil sampling of residential properties, eight in total including Wreck Bay, Jervis Bay village residents, and Jervis Bay school and shop. Samples taken included citrus, vegetable, tomato and lilli pilly fruit with accompanying soil samples. The samples taken were as available on the day and while different to those identified in the SAQP represent the produce currently consumed. A property that reported a garden in the water use survey June 2017, no longer had produce to sample, instead an egg was collected for analysis.
- 10. Project team has been invited to present interim results to the WBACC Board at the next two Board meetings on 22 May and 25 June 2018.
- 11. Inclusion of the four members of Wreck Bay Community in the project team to support investigation activities continues to be received well.
- 12. GHD to advise acceptance to the WBACC Board to attend the proposed May and June. Defence has committed to sharing sample results with the community. It is most important sample results from Wreck Bay and Jervis Bay territories are shared with the community prior to any agency notices in relation to those territories.

13. Comments Requested

- (NSW EPA) Jervis Bay and Currambene Creek data has been reviewed and in response dietary advice will be issued in the near future for Currambene Creek. NSW EPA will liaise with ACT EPA to manage notification process and will inform Defence of any planned information release with sufficient time to inform the Wreck Bay community. Agency attendance at Wreck Bay briefing may be required and will be confirmed in due course. It is expected the required notification will take place prior to 22 May.
- The dietary advice identified by is related to the HMAS Albatross investigation not the JBRF investigation. The connection of Currambene creek to Jervis Bay has indirectly tied some aspects of the separate investigations.
- It is unlikely that ACT EPA will deviate from NSW EPA.
- Confirmed ACT and NSW EPAs will liaise and inform Defence of the planned management approach.
- (Reiterated the promise by Defence to inform the Wreck Bay community is the primary risk and concern and requests all parties place importance on this commitment.
- How long does it take to arrange formal engagement with WBACC.
- Advice to the community should go through the Board and potential exists to arrange an extra ordinary Board meeting if required.
- The local community members' (from the one family clan) involvement in the investigation field team has provided good opportunities for transparent communication and has assisted with building the level of trust, however cautioned this level of trust has been low for many years and any communication is very slow within the community. Any information to the Board or community team members may take a long time to disseminate between different family members and may not necessarily reach a wide audience.
- Defence is interested to understand the delineation of authority between JBTA, NSW and ACT with respect to advisory notices.
- In absence of a representative from JBTA to respond, ACT and NSW agencies act in a service provider capacity, providing recommendations for Department of Regional Infrastructure to action
- (Echoed previous comments that any messaging takes time and communications with the Board are not necessarily communicated to the wider community.

Community Enquiries

14. No activity or calls to the Community Information line or email inbox.

Risks and Issues

15. Issue of public notices or information without consultation, impacting WBACC level of trust and relationship.

PFAS investigation results

16. New investigation results have not been validated at this time and when confirmed will be issued as factual letters as soon as practical to all members of the PCG.

Other Business

- 17. GHD would be interested to receive Curambene Creek data to compare to JBRF results.
 - Defence is responsible for Currambene data, with EPA supporting data share providing the information stays confidential within the closed PCG group.

Meeting Close - 14:50 PM

Actions

Nil

White, Sarah-Jane (Health)

From:

Monday, 14 May 2018 9:56 AM

Sent: To:

Barr, Conrad (Health); Clapham, David; Hudson, Lyndell (Health)

Cc:

Salgado, Sashini

Subject:

RE: Consumption Calculations [SEC=UNCLASSIFIED, DLM=For-Official-Use-Only]

Thanks Conrad,

I have had a few discussions with Defence about the additional data which is going to be available in the next few weeks. Our team is quite busy at the moment but we will be able to start having a look at the ACT numbers from next week.

Please give me a ring if you have any questions.

Thanks,



- NSW PFAS Strategy

Hazardous Incidents and Environmental Health, NSW Environment Protection Authority

pa.nsw.gov.au www.epa.nsw.gov.au 💆 @EPA NSW

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



From: Barr, Conrad (Health) [mailto:Conrad.Barr@act.gov.au]

Sent: Friday, 11 May 2018 4:58 PM

To: Clapham, David < David. Clapham@act.gov.au >; |

u>; Hudson, Lyndell

(Health) <Lyndell.Hudson@act.gov.au>

Cc: Salgado, Sashini <Sashini.Salgado@act.gov.au>

Subject: RE: Consumption Calculations [SEC=UNCLASSIFIED, DLM=For-Official-Use-Only]

Thanks for your offer of help on this. I trust David's email makes things clear in relation ACT and JBT? Noting that you advised during the teleconference that you had copies of the JBT sampling results, please let us know if you need anything else from us at the moment to assist in the running of the dietary intake calculations etc. The most recent biota data we have is attached above, please let us know if you have a different data set.

Thanks again for your willingness to help and collaborate on this.

Regards

Conrad



Conrad Barr | Executive Director Health Protection Service | health.act.gov.au Phone (02) 6205 4402

From: Clapham, David

Sent: Wednesday, 9 May 2018 8:06 AM

To: Barr, Conrad (Health) < Conrad.Barr@act.gov.au>

Cc: Salgado, Sashini < Sashini.Salgado@act.gov.au>

Subject: RE: Consumption Calculations [SEC=UNCLASSIFIED, DLM=For-Official-Use-Only]



Responsibility in the sense of final authority and decision making ability will always rest with the Commonwealth. JBTA has asked the ACT for our advice on whether health guidance advice is required in the JBT, based on the current data – NSW EPA assistance in analysing the data to develop our advice is gratefully appreciated. The ACT will then make recommendations to JBTA for them to action as the governing authority. This, in turn, may involve JBTA further authorising the ACT to take precautionary action in JBT.

Happy to discuss if there are any issues – I'm away from the office for meetings most of today but can call you after 2:30 if you like?

Thanks

David

David Clapham | A/g Manager - Intergovernmental Relations | Policy & Cabinet Division

2 02 6205 7261 | Chief Minister, Treasury & Economic Development Directorate | ACT Government

Level 4, Canberra Nara Centre | GPO Box 158 Canberra ACT 2601 | www.act.gov.au



CITY . COAST . ALPINE . TABLELANDS

From:

Sent: Tuesday, 8 May 2018 5:04 PM

To: Clapham, David < David. Clapham@act.gov.au >; Barr, Conrad (Health) < Conrad. Barr@act.gov.au >

Cc: Salgado, Sashini < Sashini.Salgado@act.gov.au>

Subject: RE: Consumption Calculations [SEC=UNCLASSIFIED, DLM=For-Official-Use-Only]

Hi David,

Have JBTA officially transferred responsibility over to ACT?

Thanks,



Hazardous Incidents and Environmental Health, NSW Environment Protection Authority



a.nsw.gov.au www.epa.nsw.gov.au У@EPA NSW

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



From: Clapham, David [mailto:David.Clapham@act.gov.au]
------------------------	----------------------------------

Sent: Tuesday, 8 May 2018 5:00 PM

Cc: Salgado, Sashini < Sashini.Salgado@act.gov.au>

Subject: Consumption Calculations [SEC=UNCLASSIFIED, DLM=For-Official-Use-Only]

Dear and Conrad

I understand that one of the outcomes of the teleconference on Friday was an offer from NSW EPA to assist ACT with consumption calculations based on the raw biota data for JBT. From further discussions I understand that ACT would like to accept NSW's offer.

I'm writing to e-connect you two as they key people to facilitate this; I'd appreciate being copied in but will rely on Conrad from ACT Health to liaise with NSW EPA to determine next steps and what needs to be done.

Let me know of any issues or details I've missed. I'd also like to thank you again Corrie for your collaborative approach on this issue.

All the best

David

David Clapham | A/g Manager - Intergovernmental Relations | Policy & Cabinet Division

2 02 6205 7261 | Chief Minister, Treasury & Economic Development Directorate | ACT Government

Level 4, Canberra Nara Centre | GPO Box 158 Canberra ACT 2601 | www.act.gov.au



CITY - COAST - ALPINE - TABLELANDS

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PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS EMAIL

Stedman, Andrew (Health)

From:
Sent:
To:

Monday, 14 May 2018 5:29 AM

If the second secon

Pear JBRF PCG,

Please see attached agenda for the JBRF PFAS investigation monthly meeting to be held on Tuesday 15th May at 2pm.

Dial in details are provided below.

Join WebEx meeting Meeting number: If you are a host, go here to view host information. Join by phone Call-in toll-free number: Call-in number: Show global numbers Participant Pin Code: Regards,

GHD

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PFAS Environmental Management Program Monthly PCG Meeting (14) – JBRF

	Monthly PCG Meeting (14) – JBRF
Administrative De	
Date	15 May 2018
Time	14:00hrs (AEDST)
Venue	Teleconference
Dial-in Details	Australia Toll free Access code:
Chair	
Minutes	GHD
Attendees	
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Stedman Andrew	Andrew.Stedman@act.gov.au
Radomir Krsteski	radomir.krsteski@act.gov.au
Heath Chester	heath.chester@act.gov.au
David Clapham	David.Clapham@act.gov.au
Lyndell Hudson	Lyndell.Hudson@act.gov.au
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Agenda	
Introductions	
Investigation Progress	 Detailed Site Investigation (DSI) SAQP & Conceptual Site Model (CSM) Factual memorandums
Future Stages (schedule)	 Human Health and Ecological Risk Assessment (HHERA) Numerical Groundwater Model
Site Auditor	- Update from site auditor
Stakeholder Engagement	Meetings and briefsCommunity enquiries
Risks and Issues	
Other Business	
Close	

Stedman, Andrew (Health)

JBRF PCG,

Attachments:

Attached is factual letter 13, which reports the laboratory sampling results received for terrestrial biota, taken on Defence estate between February and April 2018.

2126171_LET_factual letter 13_ Rev 2_May 2018.pdf

If you have any questions please contact:

Defence Project Manager
Defence Project Director
GHD Project Manager -

Regards,

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29 May 2018

2126171_LET_factual letter 13

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

Dear

JBRF & HMAS Creswell- Environmental investigation: Preliminary sampling results Terrestrial ecology sampling results from onsite investigations (processed by 27 April 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 27 April 2018 for the terrestrial biota sampling program within the Site.

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





Enclosures:

Figure 1: Biota Sample Locations

Figure 2A: Concentrations of PFHxS + PFOS (Sum) - Invertebrates

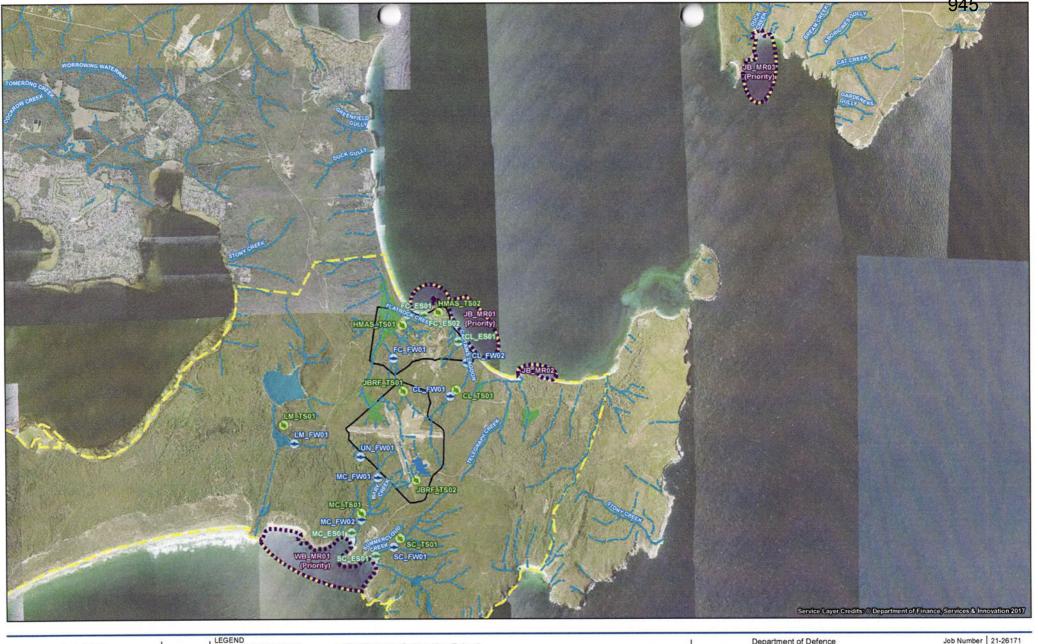
Figure 2B: Concentrations of PFHxS + PFOS (Sum) - Plants

Figure 2C: Concentrations of PFHxS + PFOS (Sum) - Mammals

Table 1: Biota Results - JBRF

Table 2: Biota Results - HMAS Creswell

Table 3: Co-located Soil Results - JBRF and HMAS Creswell





Paper Size A3

Metres

345 690

1,380

Department of Defence

Job Number 21-26171 Revision Date 27 Apr 2018

Biota Sample Locations

Figure 1

Investigation Area Extent

☐ Jervis Bay Range Facility

☐HMAS Creswell

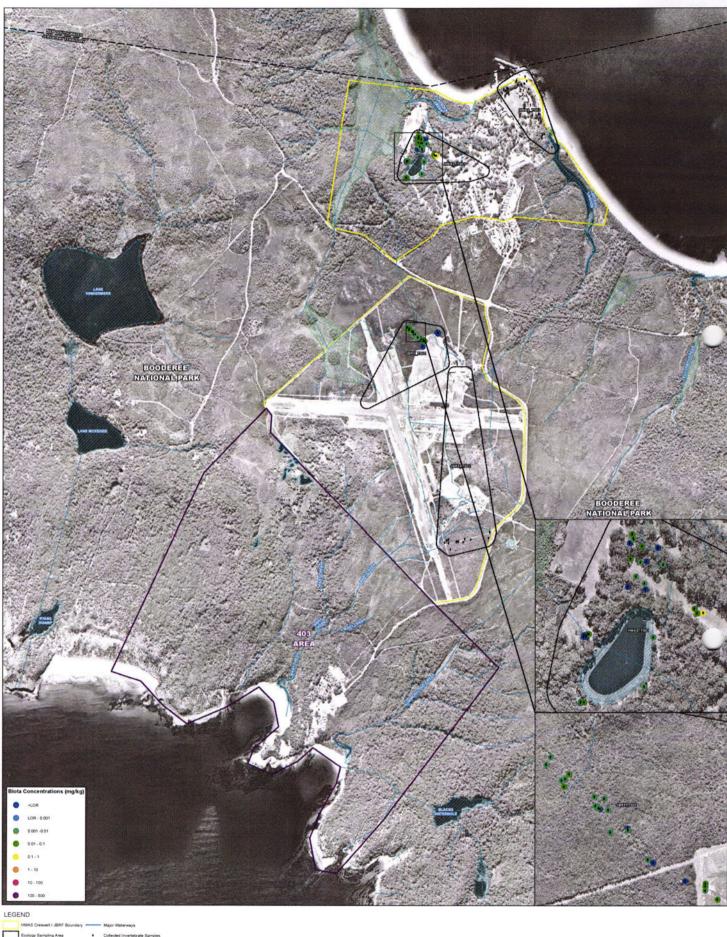
Water Bodies Drainage Areas -- Minor Waterways / Drainage Lines (Defence)

Estaurine Species Sampling Location

Freshwater Species Sampling Location

Terrestrial Species Sampling Location

-- Minor Waterways / Drainage Lines - Marine Species Sampling Area (Approximate)





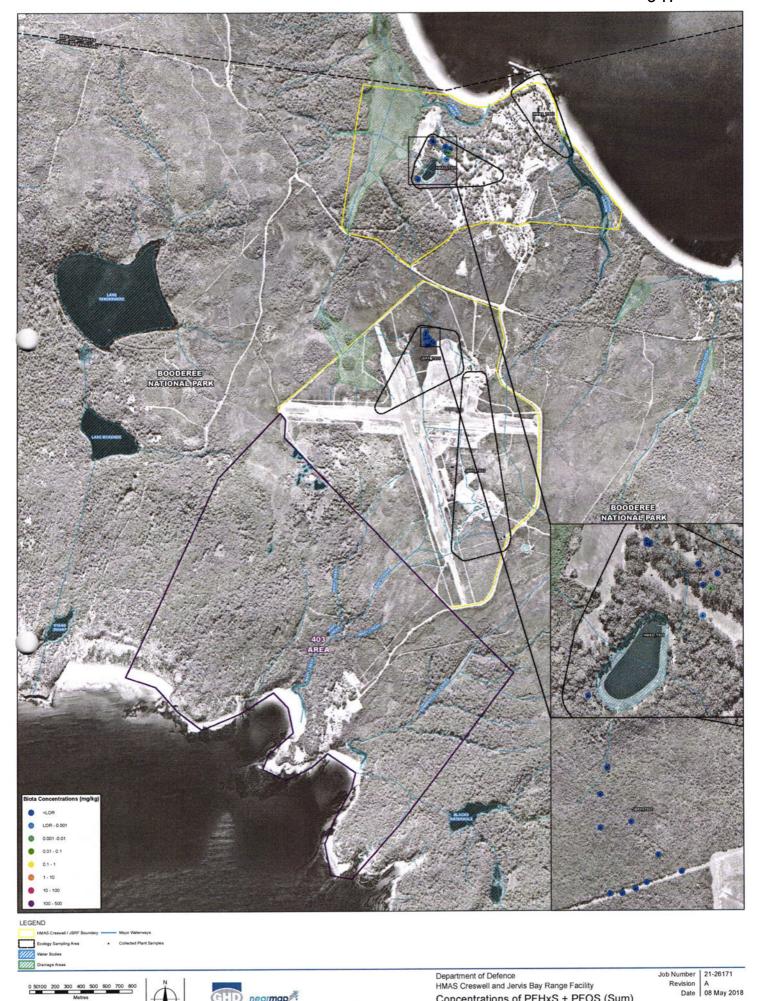


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Department of Defence HMAS Creswell and Jervis Bay Range Facility

Concentrations of PFHxS + PFOS (Sum)

Job Number | 21-26171 Revision | A Date | 08 May 2018

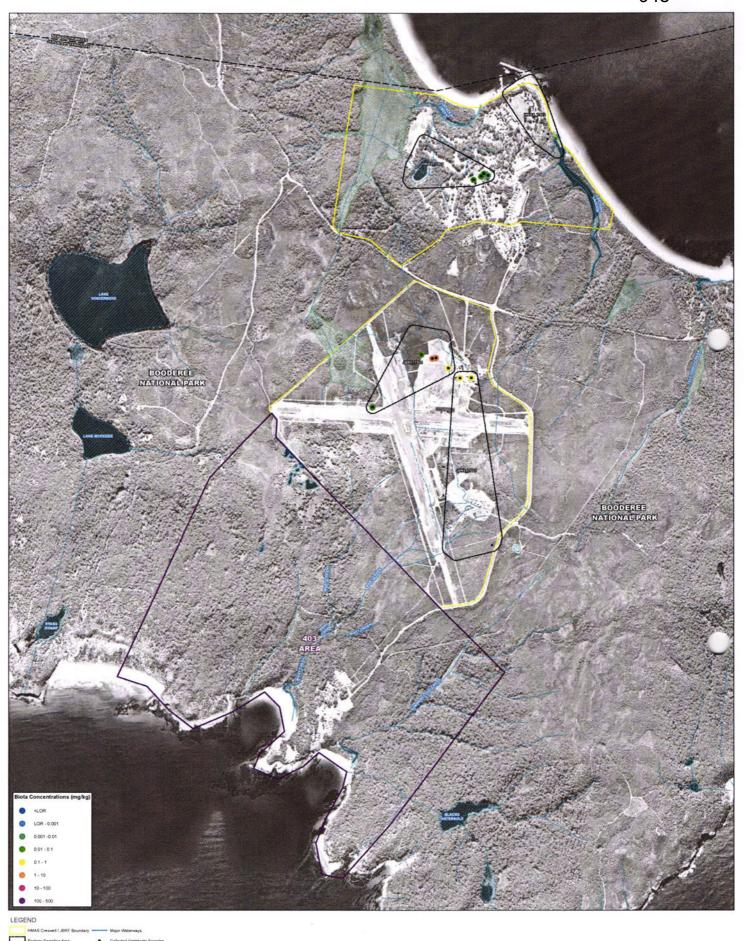


Concentrations of PFHxS + PFOS (Sum) - Plants - Plants

Level 15, 133 Castlereagh Street Sydney NSW 2000 T 61 2 9239 7100 F 61 2 9239 7199 E sydmail@ghd.com.au W www.ghd.com.au puertal damage) which are or may be incurred by any party as a result of the majo being fraccurate, incomplete or unsubstitle in any way and for any reason.

(Continues NSW 1200 Castled NSW 1200 Castled NSW pembers

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Department of Defence HMAS Creswell and Jervis Bay Range Facility Concentrations of PFHxS + PFOS (Sum) - Vertebrate Job Number | 21-26171 Revision | A Date | 09 May 2018

Table	1:	Biota	Results	- JBR
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																		PF	AS											_				T N	A
				N-Methyl perfluoroctane sulforamidoefranol	MeFOSA N-Ethyl perfuoroctane sulforamidoscetic acid	Perfucionegiane sultonic acid	10.2 Fluorotelomer sulfonic acid	4.2 Fluorosebmer sulfonic acid	Perfucerobulane sulfonic acid	N-Methyl perfluorocitane sufforamidoscelic acid	Perfucerohexane sulfonic acid (PFHsS)	Perfucncetane sufferie acid (PFOS) - Branched	Perfucropertanoic sold	8.2 Fluorotelomer sulfonic acid	N-Ethyl perfluoroottane sufforemide	N-Etryl perfluoroctane sulforamidostrand	N-Metryl perfusiocciane subtramité	6.2 Fluorotalomer Sufforate (6.2 FTS)	Perflueroctande acid (PFCA)	Perfuceopertane sulfonic soid	Perfumphance acid	Perfluorodecanoic acid	Perfuceotecane sufferic acid	Perfucedodecanos acid	Perforoteptance and	Perfucerhenancic acid (PFHuA)	Performener add	Perfucrocdane sufforio acid (PFOS)	Perfucroctane suforamide (FOSA)	Perfucroletradecarcic acid	Perfectivities and	Perfectores	PFAS (Sum of Total)	Weight of Sample Prepared	Perfucectane sullonic acid (PFGS) - Linear
				mg/kg		mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg 0.0005	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	0.1	mg/kg 0.0006
				0.002	0,001	0.001	0,002	0,002	0.0005	0,001	0.0005	0.0006	0,0005	0.0006	0.002	0,002	0.005	0,0005	0,0003	0.001	0.005	0.0005	0.002	0,0005	0.0005	0.0005	0,0005	0,0003	0.005	0.002	0.002	0.0005	0,001	0.1	0.000
Fleid ID	Sample Type	e Matrix Type	Metrix Description																																
e Field ID 2/2018 JBRF_TS01_I001_180226		Bieta	Ant. Invertebrate	40.56.2	483,000	45.051	40,503	43,032	<0.001	40,001	48.001	40,7066	40.002	140,002	V5.002	<0.002	<0.005	101/02	40,001	40.00	NS.100F	40,001	400,000	VELVE2	40,061	46.001	101.04	0.002	noutries.	10,762	V6.302	40,001	0.002	2.7	0.000
12/2018 JBRF_TS01_8002_180226		Biota	Ant, Invertebrate	<0.002		40,001	90.002	<0.002	40,004	49.001	<0.001	<0.0005	40.002	<0.002	<0.002	40.002	V0.005	<0.002	40,001	e0(g)	1000C	40,001	- v0.002	<0.002	4(0)1	e0.001	<0.001	41.001	*0.005	<0.002	40,000	1000	10,001	7.2	0.000
2/2018 JBRF_TS01_I003_180226		Biota	Ant, Invertebrate	10,002	*0,001	<0.001	40,002	+6,052	40.601	40,001	×6,061	<0,0005	NC 002	v0.062	<0.000	10.002	v6,005	+0.600	KILDUS.	70,001	+0,5605	<0.001	40.005	40.50E	-0.001	40.001	+0,501	0.002	<0.005	+0,002	41000	<0.001	0,002	2.9	0.002
2/2018 JBRF_TS01_8004_180226		Biota	Ant, Invertebrate	40,002	40,001	-40.001	+0,102	<0.002	*0.001	<0.001	<0.001	<0.0005	+0.002	<0.002	<0.002	<0.002	<0.00%	<0.002	-0.601	10,001	<0.006	+10.001	40,002	+0.002	-0.001	18,401	+(1,00)1	40,001	10.000	+0.002	+0.102	100,001	KL001	5.3	0.000
2/2018 JBRF TS01 8005 180226		Biota	Ant, Invertebrate	40,002	40,001	40 (01	46,002	<0.002	1000	100.00	4/1/00/1	40,0005	40.002	40.002	×0.005	<0.002	200.02	20.005	<0.001	<0.001	VD.005	<0.661	58,002	50,002	-10:001	<0.001	50.001	0.002	<0.0005	40.702	40,002	<0.001	0.002	2.7	0.000
02/2018 JBRF_TS01_8006_180226	Normal	Biota	Snail, Invertebrate	+0.502	<0.001	+0.051	40,502	+03,002	-40,001	+G.901	+0.001	+0.0003		<0.002	45.002	40.002	< 0.005	40,002	40,001	+0.00	<0.005	100.09	+0.002	40.002	40.001	+0.001	10.001	460001	<0.005	<0.002	40.002	ri2.001	-03.00)	2.2	40,540
2/2018 JBRF_TS01_607_180226		Bota	Spider, Invertebrate	40.069		<0.001	V0.002		+0.001	(40.00)	<0.001	0.007	<0.007	×0.005	40,00%	10.002	4,010,00	40,000	10,001	100.03	<0.000	100,001	<0.002	40,000	90,701	10001	40,001	0.062	<0.009	- A0'000	90,700	1000	0.082	1.3	0.07
02/2018 JBRF_TS01_I006_180226		Biota	Spider, Invertebrate	40,702		- OLDER	40,702		40,501	40,001	<0.001	0.001	<0.002	<0.002	43,502	<0.002	60,009	<0.002	<0.001	<0.001	<0.605	<0.001	<0.002	<0.002	10.00		40,561	0.01	<0.009	40,502	41.002		0.01	1.9	0.00
02/2018 JBRF_TS01_1009_180226		Biota	Spider, Invertebrate	40,002	4(10)/1	49161	<0.002	<0.002	100.09	<0.001	40,001	0.001	40.002	40,000	43.005	40.002	40,005	419.002	<0.601 e0.601	40,001	40.005	<0.001 ±0.001	40.000	10.002	+0.001 +0.001		40.001	0.009	40.005 +0.005	10.00	<0.02			3.1	0.00
02/2018 JBRF_TS01_8010_180226		Biota	Spider, Invertebrate	40,000	107.00	19 091	40,003	4/11/12/	10/01	100.05		-40,0064s	100.05	V07005	V0.002	40,002		19,192					0.002					900.0	<0.005 +0.005	10,102			0.008	1.6	
02/2018 JBRF_TS01_J011_180226		Biota	Spider, Invertebrate	41,012			10.002		40,001	40,003	40.001	0.002	40.002 -0.002	<0.902 <0.902	40,000	40.002	<0.605	<0.002	40.001	10001	<0.600	<0.001	+0.002 +0.002	403,02	40,001		40,501	0.012	40,005	40.102	40,002	10.00	0.012	0.3	0.00
02/2018 JBRF_TS01_J012_180221		Biota	Moth, Invertebrate Moth, Invertebrate	10,000 10,000			4D,000		400,000	+0.701	<0.001	KIS504	<0.000	40.002	+0.002	<0.002	challe	4/3,D/32	10.001	10.001	+0.005	-0.001	10.002	40.000		100,001	40,004	0.063	(0.00)	40000	+10.702		0.053	0.2	
02/2018 JBRF_TS01_I012_180226		Biota	Invertebrate	40,000			40,000	40,002	10.001	40701	40,001	40,0006	40,000	40.007	50,002		200.00	10,002	c0.101	40.005		100.001	40.002	40,002		40,001	30,001	0.003	40.005	50,002				4.9	
/02/2018 JBRF_TS01_J013_180226 /02/2018 JBRF_TS01_J014_180226		Biota	Invertebrate	40,502					45 (5)	e0.501		0.001	40.00Z	+0.502		x0.003	40.005	10.102	10,001	10,501	10.107	10,001	+0.002	40.002	46,561		40.001	0.003	<0.005	40,702	40.007	€0,501	0.003	4.0	
02/2018 ST23 QC109_180228	Field_D	Biota	Invertebrate			-	-		40,000		0.0017	-	40,005	<0.0006		-	-	<0.0005	481,081US		-	<0.0005	-	<0.0005	+0,000/5	-VU.DUDE	<0.0005	0.011				40,000	-		
02/2018 JBRF_TS01_8015_180226		Biota	Invertebrate	10,002	40,005	×4.501	40.302	40,002	<0.0015	100.001	×0.001	0.001	40.009	<0.002	40000	40,002	40.000	<0.000	101.00	100.001	40,005	<0.001	<0.002	40,002	92,001	Tubula.	46,061	0.004	<0.006	<0.002	40.002	100.00	0.004	3.4	0.000
02/2018 JBRF_TS01_J016_180226		Biota	Invertebrate	45,160	40,001	<0.001	40,000	40,002	<0.001	<0.001	<0.001	40,0005	<0.000	<0.002	10 (102	<0.002	<0.005	<0.002	<0.1/01	40,001	\$10,006	10.001	40,000	40000	100.01	40,001	eutut	0.003	<0.000	4/10/15	<0.102	40,007	0.003	3.1	0.000
02/2018 JBRF_TS01_I017_180226		Biota	Bush coackroach, Invertebrate	46,063	400,001	40.001	40,500	<81,000	45,051	40.501	×0.001	0.001	- KD.000	40.002	50,002	<0.002	<0.005	V91002	(0.001	440,001	10000	40,001	<0.000	VELDC2	40,001	49,000	V6.061	0.003	<0.005	10,002	40,002	40,001	0.003	1.9	0.000
02/2018 JBRF_TS01_8018_180227		Biota	Fly, Invertebrate	46.002	40.001	<0.001	46,062	<0.002	10,001	A0:001	<0.001	<0.00/6	<0.002	+0.002	<0,002	50:002	<0.105	<0.002	10,001	+10.(10)	<0.005	10,001	<0.402	40,002	46,061	+0.001	40,001	10,001	<0.116	<0.1102	16:00:2	<6.001	<0.001		*6.000
02/2018 JBRF_TS01_1019_180227		Biota	Fly, Invertebrate	10.00	100.00	40,001	40.702	<0.002	40,001	<0.001	40 001	40,0005	40,002	45 005	10,000	40,002	<9.095	(0.00)	49,001	<9.001	<0.005	10,001	10.002	40,000	40,001		100,001	46,021	40.005	<0.503	40,000		<0,601	2.7	49,000
I02/2018 JBRF_TS01_K020_180227	7 Normal	Biota	Fly, Invertebrate	40,002	<0.001	*SL04/1	×ID,002	40,002	<0.001	<0.001	-	433,032	<0.009	<0.09.	40.002		49.006	<0.002	+0.001	:9.001	<0.005	40,001	:6:0002	×6.002		160001	100,00	10,001	(0.000)	40,002		<0.001		0.4	<0.00
102/2018 JBRF_TS01_8021_180227	7 Normal	Biota	Earthworm, Invertebrate	140,002	40.001	<0.001	<0.002	40,500	<0.001	<0.001	<0.001	- ATTORNEY	<0.002	40,000	41/-(1/2)		40,005	+0.002	10.001	40,005	<0.005	<0.601	<0.000	431,002		<0,001	RUD(1	(0.001	<0.00%	470/8	-4545		4000	0.0	40,000
102/2016 JBRF_TS01_N22_180227	7 Normal	Biota	Beetle, Invertebrate	40,002			40,002		40,001	<0.001	<0.901	40,7009	40.002	43,042	<5.002	K0.002	< 0.005	<0.002	100,00	+40,001	<0.005	40,601	<0.002	10.002	40,001		10.001	40,001	40,505	40,002	40,002	NO.DOT	N0.001	0.8	40,50
J02/2018 JBRF_TS01_K023_180228		Biota	Invertebrate	41,012					40,001	40,001	<0.001	0.004	<0.002	<0.002	40,000	40.002	<0.005	<0.000	40.001	<0.(10)	40.006 400.005	10,001	<0.002 <0.002	40,002	190,001		100,001 40,001	0.024	401000	40,1,02	41,002	<0.001	0.024	2.4	0.02
902/2018 JBRF_TS01_8024_180228		Biota	Invertebrate	90.702			<0.102 <0.102		*0.004	<0.101 <0.101	40,001	0.005	<0.002	40.002	40,002		<0.009	40,002 51,012	10.001	45,001	SULDUS	10,001	10,002	40,012	10,001		*ELDERT	0.018	10,005	<0.000 eu.bu2	+10.1002		0.018		0.01
U02/2018 JBRF_TS01_I025_180228		Biota	Invertebrate				40,000		40.001	40.001		50,000A		10,000	10,002	40.002	<0.005	10.002	40,001	K0.001	<0.008	10.001	<0.000	10.002	100.001		40.003	0.009	200,000	40 DOS			0.009		0.00
902/2018 JBRF_TS01_I026_180228		Biota	Invertebrate Ranksia eriofolia, Plant	40,000	400001	-0.40	40,000	+10,7402	<0.001	¥0.001	vi3.(x01	<0,7000		+10.(400	45 002	40.002	200,000	etrote:	40.005	+0.001	<0.000	10.001	+0.002	ob.002	10,001		40,001	40.004	10.005	+00.1909	10.002	ko 500	-0.001	30,4	16.50
V02/2018 JBRF_TS01_P001_180228 V02/2018 JBRF_TS01_P002_180228		Biota	Banksia ericifolia, Plant	40,002 40,002			50,002	-	40,001	100.001	10,001	40,000		19.092	10,000	10.002	19,005	40,603	10.004	Y0.001	60006	10,001	10000	10,000	90,001		10,001	10,001	VILUTA	40,000	401/002	40 001	- KQ101	39.5	100,00
5/02/2018 JBHF_TS01_F002_18022 7/02/2018 ST17_QC104_180227	Field D	Biota	Banksia erioficila, Plant	40.00	19291		70.00	70,000	40.5000		<0.0003		40.005	<0.00065		- Janes		*0.0000	*d.0003		11,010	Pdpqda.	1000	40.6/KS	<0.0008			est.00007				40,0006		-	-
V02/2018 JBRF_TS01_P003_180229		Biota	Banksia ericifolia, Plant	46,362	103.01	40.001	40,000	46,000	KD-004	46.001	40,001	SUDIOS.	40,662	40,000	+0.002	<0.102	40,005	<11002	-0,001	48,001	40.005		40,002	411.01.2	40,001	40,001	NUDLI	400.001	-40,003	*UDIA	×0.002	40,001	40,001	31,3	40,00
V02/2018 JBRF_TS01_P004_18022		Bota	Banksia ericifolia, Plant	40,000	40,001	40.001	40,000	40,002	49.891	40,001	<0.001	<0.00066	<0.002	40,002	VD-052	40.002	40,505	10.002	+0,001	103.04	10.005	: (0.001	40,000	×0.002	40,001	<0.001	N0.001.	16,061	40,005	40,707	40.002	48,001	10,001	37.9	46.50
M02/2018 JBRF_TS01_P005_180226		Biota	Banksia ericifolia, Plant	9.00	- cq.(q)	40,001	40,002	40,002	40,001	46.00 L	<0.001	<0.0016	41.002	+10.002	40,000	e(x,002	40.005	101/02	60,001	40.001	<0.005	16,061	V0.102	40,002	46,061	<0.001	10,1,01	190,001	ru.tu5	40,002	41.007	103.09	<0.001	66.8	10.00
/02/2018 JBRF_TS01_P006_18022		Biota	Epecris Micropylia, Plant	10,002	+6,001	+43,6631	40,002	v6,062	40,001	<0.001		<0,0005	40.000	<0.002	×00000		<0.005	<0.600	100001	<0.001	<0,005	190,001	<0.062	40,002	-40,5471		×0.001	40,001	40.009	<07005	<0.002	100.07	<0.001	6.8	40.00
02/2018 JBRF_TSD1_P007_18022	27 Normal	Biota	Epacris Micropylla, Plant	40,000	10,001	*10.011	40,700	<0.002	425/07	+0.001	40,001	40,00008	<0.002	< 0.00.2	<0.002	10300	10,005	41,000	-10.1/01	100,001	<0.005	10,601	=80,000,2	*(10)4	190,001		10020	10.501	40,005	*iL\$02	+0.102	40,001	160,001	9.8	40.70
/02/2018 JBRF_TS01_P008_18022	27 Normal	Biota	Epacris Micropylla, Plant	40,002		-	40,000		403/01	40.001	40,001	49,0006		<0.002	SD 002	<0.002	10,005	10 (62	<0.601	10,000	10.005	<0.001	40,002	<0.002	×6.301		40.001	10001	40,005	40.002		40,001	40,001	3.2	40,00
002/2018 JBRF_TS01_P009_18022		Biota	Epacris Micropylla, Plant	66,502			60,002		10:001		<0.001	40,0003	11/4/1	<0.002		40,002	<0.605	40.002 40.002	40,001 40,001		<0.000	40,001	<0.002	40,002	100.001		40,301	100,001	*0.005	<0.002		<0.80	<0.001	5.4	10.20
70/2/2018 JBRF_TS01_P010_18022		Biota	Epacris Micropylla, Plant	40,000	<0.001	40,001	40,000	<0.002	40,001	K9,001	<0.001	<0,0005	40,005	<0.002 <0.0005	40,000	40.002	40,005	<0.0005	*0.0051	<0.001	-50006-	10.001	<0.052	40.000 47.0005	190,001 100,000		40,001 40,0005	40,001	40,000	<0.002	40,007	10,000	K90301	3.8	46,500
7/02/2018 ST18_QC105_180227	Field_D	Biota	Epacris Micropylla, Plant	-		0.011	-0.100	-0.600	*0.0005	40.001	0.016	0.0560	40.005	<0.000	10.000	10102	<0.005	511/02	-0.00	0.001	4000	-0.00	<0.000	40000	10.01		400,000	0.471	-00.005	40.0.0	×0.42	40.001	0.499	32.7	0.41
K2/2016 JBRF_TS01_VL001_1602		Biota	Rabbit, Female Rabbit, Female	40,002	_	0.011	40.00	40,002	40.001	100.001	40,001	0.0010		10,000	151000	40.603	60.005	VS 852	10.001	K0.605		10.001	+0.002	10.002	40.007		40.001	0.022	40,000	50,000		40.501		29.8	0.021
#(2/2018 JBRF_TS01_VL002_1802 #02/2018 JBRF_TS01_VL003_1802		Biota	Fox Male	10,012	_	_	40,002	_	40.001	40.001	0.101	0.15		<0.002	40,000	40,002	×0.(4)5	(0),002	49,001	0.002		0.003	0.015	40,102	9,001	<0.001	40,001	2.57	*uzus	-0,00	40,007	0.002		85.4	2.42
		Biota	Fox Female	91,012					<0.001			0.0500					40,000	43,000	<0.001	0.003		0.003	0.014	40202	4p.501		40,001	1.62	40.009	40,000	*01.009	0.002		136	1.57
V02/2018 JBRF_TS01_VL004_1802 V02/2018 JBRF_TS01_VM001_1802		Biota	Rabbit, Female	10.000			+0.000		412,fe21		<0.001	40,000s		<0.00.2	4:5,6612	<0.002	<0.006	×3,032	+0.101	19,091	+15,0116	+0.001	10,000	+in.br.2	<6.001	10,001	+6,561	0.001	<0.003	46,0c2	+10,7102	-0.001	0,001	32.6	0.000
V02/2018 JBRF_TS01_VM001_1802 V02/2018 DH01_QC101_180209	Normal Normal	Beta	Rabbit, Fernale	40,500			40,000	40,007	KD 201	40,001	0.001	0.0007		40,000	10.002		40,005	10.052	<0.001	40,001		<0,001	40,002	4000		40,001	400001	0.005	<0.005	<0.002		400001		40.9	0.004
MG2/2018 DH02_QC201_180209	Normal	Biota	Rabbit, Female	-	-	-			40,/005				40.001	*0.0005				<0.0005	10.0000		10.005			<0.0005	19.0008	40,0005	<0.0055	0.033				40.500E			
002/2018 JBRF_TS01_VM002_1802		Biota	Rabbit, Fernale	40,002	+0,00	40,001	V0.00	V0,002	40,001	90,501	×0.001	0.0010	40,002	+0.002	40,000	40.002	×0.005	40,002	49,001	<9.091	<0.00E	40,001	411/11/2	40.000	10,003	<0.001	<0,001	0,011	- VVLC09	40,000	46,002	49.001	0.011	56.6	0.01
M02/2018 JBRF_TS01_VM003_1800		Biota	Fox. Male	40,002	<0.001	40,00	<0.000	502,09	40,001	10.001	0.006	0.0007	40.002	<0.05/2	×43,000	10,002	10,056	<0.0000	<0.001	V0.001	×00000	-0.001	10.002	VAND02	107.01	16,001	40,001	0.011	16,004	<0.000	<0.002	100.001	0.017	53,4	0.01
M02/2018 JBRF_TS01_VM004_1802		Biota	Fox, Female	40,002	40,001		<0.103	46,002	471001	<0.001	0.007	0.0007	10.002	<0.002	401005	<0.005	49.005	4U-D02	+:0.1.01	49,094	<0.005	<0.001	49.000	40.062			466001	0.014	401,000	411013			0.021	49.8	
3/02/2018 JBRF_TS02_VL009_1802	223 Normal	Biote	Rabbit, Female	40,002		0.014			40.00 l	40.001	0.033	0.129	40.000	+40,000	vi2 002	<0.002	40.005	×0 002	100.001	40,001	<0.005	10.001	0.002	<0.002			100.001	0.626	40,005	- VE DO2		<0.001	0.675	39.4	0.490
3/02/2018 JBRF_TS02_VL010_1802		Biota	Rubbit, Female	46:002			46,063		100,001	+0.001	0.010	0.061	<0.002	<0.002	40,000	(E),Q0,2	<0.005	40.002	10,001	+19,0191	10,000	40,001	<0.002	40,002	10,001		10,001	0,284	*11.(1)5		40,002		0,372	8.4	0.233
3/02/2016 JBRF_TS02_VM009_1800		Biota	Rabbit, Female	46.002		40,00	40,005	-	40,001	*D.001	40 001	0.001	40.002		40,000	40,002	<0.005	<0.002	<0.001	×9.001	40,005	10,001	+9 (6)2	<07005 407007	40,001		46,001	0.003	10,060	+0.002	40,002		0.003	45.8 14.3	
3/02/2018 JBRF_TS02_VM010_1803		Biota	Rabbit, Female	40,000		40.64	<0.000	_	*U.0UT	0.0005	0.003	40,0005	-	<0.002	<0.002	10.002	_	*(U)(Q)	-	_	_	-	-	<0.002 <0.002	40.001	40.001	-	0.002					0.006	14.3	0.00
TENDONIA MOS YSON Seat 18092				-30.000	40.000		2 (0.00)	40,0065	<0.00002				40.000C	40,000/6	*ULDOOS-	ND:0005	40,000,75		<0.000C	4D.000:2	A33,001	VIQ.0500.	40.00.0				400,D002		40,0002			40,5602			

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				F 0 4 5	1 1	2 4	2 8	8 8	8	F 0 4	10 H	8 6	8	3 4	F 2	F 9	181	9 9	8 8	0 8	8	8	8	8	8	83	8	8 0	81	80	100	8	(Su	2.8	8 6
				1444	49	18	6 0	2 8	28	189	1 8 8	28	1	2.5	24	2 8	1111	2.5	1 20	1 5 8	1 1	1	28	28	4	# £	£	£ 8	44	8 3	8	₹ B	3	2 2	28
				mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	9	mg/kg
EQL				0.002	0.001	0.001		0.002	0.0005	0.001	0.0005	0.0005	0.0005	0.0005	0.002	0.002	0.005	0.0005	0.0003	0.001	0.005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0003	0.005	0.002	0.002	0.0005	0.001	0.1	
Date Field ID	Sample Type	Matrix Type	Matrix Description																																
19/02/2018 HMAS_TS01_I001_180219	Normal	Biota	Art, Invertebrase	NURG	<0,001	40,001	0.006	×0.502	40,001	NuDul.	100.00	0,001	40,019	VID.002	40,000	411,010	V0.008	<pre>chun;</pre>	T sugget	×0.091	<0.006	riday	v0.in2	-0.002	100,000	500.001	10,501	0,016	×0.005	40,000	101507	1 ×9(0)	0.022	2.2	0.015
19/02/2018 HMAS_TS01_I002_180219	Normal	Biota	Arit, Invertebrate	10.002			NO.P02	<0.002	Koton	107.01	40.001	0.002	40,702	40.000	40,502	40.009	45.065	40,602	100.00	<0.051	40,005	<2,101	500.09	400500	40,001	40.051	45,001	0.022	<0.000	40,500	10,002	<0.001	0.022	2.4	0.02
19/02/2018 HMAS_TS01_J003_180219	Normal	Biota	Ant, Invertebrate	-0.002		-	<0.1,02	40,002	*USU	<0.101	40.001	0.002	<0.107	40.002	40.002	-010c	<0.005	*1/0/2	<0.001	40,001	×0.005	<0.001	40,000	00.002	100.001	48,004	400061	0.027	40,000	10.712	+10.1/02	40,001	0.027	3.1	0.025
19/02/2018 HMAS_TS01_J004_180219 19/02/2018 HMAS_TS01_J005_180219	Normal	Bota	Ant, Invertebrate Ant, Invertebrate	40,000	46,001	100.001	40,500	40,009	40.001	40,001	40.901	0,002	40,602	43,902	V0.002	49,000	< 0.005	40 002	100.05	<0.001	40,005	+0,001	<0.000	VU,002	10,001	<0.001	VE-901	0.022	40,005	47'07'5	10,002	<0.001	0.022	2.0	0.02
19/02/2018 HMAS_TS01_006_180219	Normal	Sinta	Boetle, Invertebrate	10.002	-40.001	10,001	40,002	40,002 40,002	40.001	+0.001 - 50.001	10000	42,0005	40,000	<0.002	40.000	40,002 40,002	×0.005	40.002	400001	+9.(91	-0.00°	<0.004 value	×0.002	40,002	40004	193.01	4E/3E1	0.007	*U.(4)5	40,902	4(40)3	430,001	0.007	6.6	0.007
19/02/2018 HMAS_TS01_J007_180219	Normal	Biota	Milipede, invertebrate	40,002	10.001	400,000	10,000	10,002	10,501	40.001	40.001	0.001	+0.009	10,002	40.002	40 00s	<0.005	*0.002	<2001	19 091	40.005	<2.001	15 (52 75 (62	10.502	100001	100.001	40,001	0.001	40 (0A	40,500	401.002	10701	0.001	1.6	0.001
19/02/2018 HMAS_TS01_608_180219	Normal	Sota	Fly, Invertebrate	40.003	190,001	4(U\$U)	40,000	40,007	<1/201	40,001	40,001	0.001	×0.000	×0.002	40,002	10.002	40,005	50,002	(0.001	40,001	vu bus	<0.L01	10,00%	10,002	<0.001	40.001	(0.00)	0.002	40.00C	41.312	10,102			0.7	0.001
20/02/2018 HMAS_TS01_809_180220	Normal	Biota	Snail, Invertebrate	40,502	40.301	ND:001	40,000	40,002	<0.001	+0.001	40/901	<0.10(d	40,502	<0.002	50,002	<0.002	140,005	- <0.002	<0.001	40.001	10.005	<0.001	<0.143	10.102	<0.001	<0.001	40.00	40,001	4kthes	10,702	<0.002	40,501	40,001	10.7	<0.0005
20/02/2018 HMAS_TS01_J010_180220 20/02/2018 HMAS_TS01_J011_180220	Normal	Biota	Spider, Invertebrate	91.012		40,001	61715	<0.002	40.001	*u.Du1	<0.001.	0.002	40,009	<0.002	<0.003	41,000	×0.005	<0.000	_			10,071	<0.02	40,002	10,001	10701	40,001	0.023	10.005	40,300	4(1.0)2	×6.(0)			0.021
20/02/2018 HMAS_TS01_I011_180220	Normal	Biota	Moth, Invertebrate Spider, Invertebrate	10.002	10,001	40,021	VQ.7027	×0.002	40,001	N0.R01	100.001	0.001	10,709	30.003	<0.502	92,022	<0.008	<0.000	9,631	10,051	<0.006	10,001	49.002	40,660	40,701	<0.001	40,001	×0.701	<0.00A	A0,500	40,002	101/01	40,001	0.8	VD,7005
21/02/2018 HMAS_TS01_I013_180221	Normal	Biota	Snat, Invertebrate	40,002	98,001	1000	40.002	40,00	40,007	60,001	40,001	<0.001	40,002	40.002	40,002	40.000	40,005	<0.002		49,001	40,015	<0.001	10,002	40,012	<0.01	100,001	46,067 (0,06)	0.028	10.000 40.000	4.0.2	40,102	19,001	0.028	1.5	0.027
20/02/2018 HMAS_TS01_3014_180220	Normal	Bicta	Snat, invertebrate	WLDKU.			60,503	410,7400	- 80,005	40,001	K0.001	<0.30%	40,000	<0.002	40 d02	40.002	- vid.1905	-0.00	6/1,001	+10.(4)	-0.00F	40001	+13,04%	0.002	49,004	*11,591	10.001	-(0,0)1	*10.00G	40,002	40,000	<0.007	+6,001	1.8	40,000 40,000
20/02/2018 HMAS_TS01_3015_180220	Normal	Bieta	Snat, Invertebrate	NUDCZ	<0.001	40,001	40.00Z	40,002	100.0>	40,001	40.001	40,0005	40.009	KQ:302	40,900	10.0.0	×0.096	40,602	10.001	<0.001	<0.000	10,000	×0.002	40,660	100001	40.001	40,001	40,001	vib.con	40.002	9411207	<0.001		4.7	10,0006
29/02/2018 HMAS_TS01_8016_180220	Normal	Biota	Snail, Invertebrate	40,702	40,001	entor	+0.002	40,002	*0.501	10.001	<0.001	40,0005	40.702	<0.002	<0.002	10,002	<0.005	×0.002	40.001	10,001	40,005	<0.(01	10.002	60,002	103.00	10.001	40:201	40,001	40.004	40.502	<0.002	40.001	400,001	8.5	10.0005
20/02/2018 HMAS_TS01_J017_180220	Normal	Biota	Spider, Invertebrate	103300	130,01		40,002	467,0673	- V0.001	+0,001	46,001	0,001	<0,002	<e0003< td=""><td><0.002</td><td><0,602</td><td><0.000</td><td>02002</td><td><03,01</td><td>40,001</td><td>192,005</td><td><0.001</td><td>-0.00C</td><td>11/01/2</td><td><0.001</td><td><0,001</td><td>10.061</td><td>0,006</td><td>40,005</td><td>11.00</td><td><0.102</td><td>40,001</td><td>0.005</td><td>2.4</td><td>0.004</td></e0003<>	<0.002	<0,602	<0.000	02002	<03,01	40,001	192,005	<0.001	-0.00C	11/01/2	<0.001	<0,001	10.061	0,006	40,005	11.00	<0.102	40,001	0.005	2.4	0.004
20/02/2018 HMAS_TS01_8018_180220 20/02/2018 HMAS_TS01_8019_180220	Normal	Biota	Spider, Invertebrate	40000	190,001	M0.001	40,000	47005	<0.001	<0.201	102001	0.001	<0.002	10,000	40,002	40,002	<0.005	10.002	-736777	193321	10,105	+9,001.	<0.002	40,002	<0.001	<0.601	100.00	0.005	10,505	40,002	40,002	40.001	0.005		0.004
20/02/2018 HMAS_TS01_6020_180220	Normal	Biota	Spider, Invertebrate	40.00g	40.001	40.001	40,000	40,102	40.005	40,001	40.001 30.001	0.003	40.00	40.005	40,000	4100	-00 (405 -00 (405	40.002	69.001	<0.(Q)	-0.000 40.006	(0,001	*0.02	10.002	30,001	NU.(U1)	-00,001	30,001	40.005	10,002	0,000	- ANDAL	40,001	3.6	*0.01.05
20/02/2018 HMAS_TS01_8021_180220	Normal	Biota	Scider, Invertebrate	-10,1409	10.001	0.001	40,502	60.002	0.003	40.001	0.002	0.093	<0.102	(0.002	40.002	40.000	+0.00%	40,000	<0.101	10.001	10,000	-02.01	10,002	46,06-2	<0.001 <0.001	10,001	46,061	0.03	10,000	40.000	+0.0.0	<0 (0) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	0.03	2.0	0.027
21/02/2018 HMAS_TS01_8022_180221	Normal	Biota	Earthworm, Invertebrate	40,002	90,001	10201	×0,000	40,009	100.00	40,001	40,001	KG (00)	40,602	40.003	<0.002	40.002	10,005	40 (62	<0.001	40,001	10.005	<0.101	40.000	10.362	101.01	40,001	VD.001	0.005	440005	47.003	VUL92		0.005	0.7	0.005
23/01/2018 HMAS_TS01_8037_180223	Normal	Biota	Fly, Invertebrate	4/\D(0	40.001	100,011	e0.002	+10,7002	40.001	+0.001	+10.001	VID.00000	€0,002	<0.002	40.002	40,002	+0.005	40.002	400,001	+0.001	10.005	103,001	+0.002	40,402	40,001	+11.001	40.00	10,001	×11.fal5	45,002	40,207	<0.001	40,001	0.7	40,5005
23/01/2018 HMAS_TS01_l038_180223	Normal	Biota	Beetle, Invertebrate	40,4(0,12)	10,501	40,001	10,0,0	40,002	40,001	SUBIR	<0.001	<0.0005	42,009	<0.002	<0.00.0	40.0.0	19,095	40,000	10,001	<0.001	400,000	10,001	×0.002	1290000	40,001	100.05	40,001	100,001	40006	40,000	91002	<9.001	<0.001	1.3	9000.0
28/02/2018 HMAS_TS01_I050_180228 28/02/2018 HMAS_TS01_I051_180228	Normal	Biota	Fly, Invertebrate Beetle, Invertebrate	~D.1102	46.061	40,540	40,002	<0.002	40,001	40,001	40.061	0.001	<0.002	<0.002	<0.002	10.002		49,502	10.001			<0.001	500.002	40,562	~0.001	<0.001	47,561	0.005	40 db6	493502	<0.002	100,01	0.005	0.6	0.004
28/02/2018 HMAS_TS01_8052_180228	Normal	Biota	Fly, Invertebrate	40,001	40.002		40,000	47/0/2	50,005	40.000	40,000	VS 004	<0.002	40.000	<0.005 sui 002	<0.000	<0.005 60.005	e0102	-0.002 -0.001	<0.002	40,005	<0.002	40,000	40,002	40,002 40,001	40,000	VI012	40,002 40,001	41,005	100,000	<0.02	-40,001	40,002	0.3	40,004
2/03/2016 HMAS_TS01_8056_180302	Normal	Biota	Earthworm, Invertebrate	- sudud			50,000	100.00	400.004	enfort.	<0.001	0.002	40,002	40.002	50,000	40,002	401406	10,002	10,001	400,001	0.000	(0,0)4	*85,002 *85,002	10.002	40,001	40,001	SD.001	0.022	AUUD	-40 ()CO	40,007	40707	0.022	0,2	0.02
2/03/2018 HMAS_TS01_I057_180302	Normal	Biota	Sectle, Invertebrate	40.009	10,061	×0.001	40,000	40.002	42,501	*D.001	40.001	40,0005	<0.009	40.003	<0.00.	40.00	v0.005	40,002	10,001	10 (01	40,005	<2,001	10 (02	10,002	10,001	1000	40,501	40.001	40.006		40.000	-100001	40,001	0.7	10,000
2/03/2018 HMAS_TS01_8058_180302	Normal	Biota	Earthworm, Invertebrate	40,700	16,001	+0.501	40,707	40,002	+0.001	+0.001	45.06 t	40,08.05	+0.102	efc002	<0.002	+0.102	40,05%	×0.102	42.(0)	46,0h1	+0,005	10,101	(0,000)	HILDRY.	<0.(01	10,001	x6001	0,009	40,009	46.062	47/45	48,001	0.009	5,1	0,009
2/03/2018 HMAS_TS01_l059_180302	Normal	Biota	Earthworm, Invertebrate	40,500	90,001	V9.001	40,000	40,002	<0.001	40,001	40,001	40,0006	<0.002	50,002	40.005	40,002	40,005	Viz.05/2				<04.01	40,000	500.002	<0.001	40,001	40,007	0.003	40,005	407.07.5	40,002	40,001	0.003	4.9	0.003
2/03/2018 HMAS_TS01_I060_180302 21/02/2018 HMAS_TS01_P001_160221	Normal	Biota	Ply, Invertebrate Pteridium Esculentum- Bracken, Plant	480,000 Vis.Dug	40.901	*D.00/1	*0.502	+10,002	10.001	<0.001	40.901	40.000d	<0.002	40,002	10.002	<0.002	rd.005	40,005	<0,001	103.00	<0.005	<9,001	r0.000	930,002	40,001	*U.(401	40,001	10,001	40,005	40,702	46402	eu.but	100.001	3.4	WELDOOD
21/02/2018 HMAS_TS01_P002_180221	Normal	Biota	Pteridium Esculentum- Bracken, Plant	10,000		50,501	40,000	16:007	A0,000	40,001	40.301	40,0005	<0.009	<0.002 vb.002	40,000	- 40.009 -cd.009	<0.006	40,000	10,001	-<0.001 -<0.001	40,006	10000	<0.002	40,000	10001	40.001 40.001	46,061 46,061	94,001	<0.008 <0.006	40,002	40,002	49.001 49.001	40,001	56,2 27,1	15.0006 15.0006
21/02/2018 HMAS_TS01_P003_180221	Normal	Biota	Pteridium Esculentum- Bracken, Plant	40,100			40.102	40.002	*0.DU1	40.101	40.001	41.01.05	40.102	40.002	40.002	40.102	40.005	411 D12	<0.101	40.001	411.014	<0.01	48.002	10.000	<0.01	40.001	40.007	0.002	49.006	40.002	100,002			101	0.002
21/02/2018 HMAS_TS01_P004_180221	Normal	Biota	Pteridium Esculentum- Bracken, Plant.	48,602	40,001	100 CU1	+0,001	+31,0d2/	=0.001	<0.001	40,001	-tu 7006	<0.002	*40,700z	47 002	<0.00±	<0.005	~U 01/2	10,001	< 6,001	VQ-865	<0401	+0.004	4:002	40,001	K0.001	(0.00)	0.001	10,005	40.002	40,002	40.001	0.001	15.8	0.001
21/02/2018 HMAS_TS01_P005_180221	Normal	Biota	Pteridium Esculentum- Bracken, Plant	40,000	-10,001	40,001	<0.00J	10000	<0.001	<0.001	40,001	<0.006	450002	+0.002	10.800	e(0,000	- C(05	<0.002	10,001	*U(Q)	(0.000)	(0,001	+10.6002	930.0	49,001	40.501	40.001	10,001	+1L(166	10,102	40,002	<0.001	40/(01	33.3	<1.0106
21/02/2018 HMAS_TS01_P006_180221	Normal	Biota	Eustrephus Latifolius - Wombat berry, Plant	V6.002	-	48,001	67.00%	40.002	49,001	40'901	100.001	40,5005	10.002	×6:305	40,000	40.003	40.005	40,000	(0.001	< 0.001		40,001	<0.002	40,502	50,001	100:02	40,001	10,001	+0.109		441,002		<0.001	19.4	10,0006
23/02/2018 ST10_QC103_180223 21/02/2018 HMAS_TS01_P007_180221	Field_D Normal	Biota	Eustrephus Latifolius - Wombat berry, Plant Eustrephus Latifolius - Wombat berry, Plant	40,760	40,001	*0.601 *0.001	<0.002 KOUKO	40,007	STADIST.	40.001	<0.001	40,000S	<0.002	40.002	<0.002 vo.002	40.70g		<0.002		10,001		<0.001	(0.00.2	<0.602	<0.001	40.061	*0.201	<0.001	<0.003	40,002	+13.012	<0.001	40,001	10.0	40,0005
	Normal	Biota	Eustrephus Latifolius - Wombat berry, Plant	40,002	40.001	<0.001	40,601	48,002		#0,001	40,001	40,0006		48,080	40 d02	40,000	40,005	40.003	<0.001	40,001	10,005	<0.001 <0.001	40,000	VU.002	100.01	48,681	V6.001	-10,001 -40,001	48.005 48.005	47.07.5	450.00Z	40,001	40,001	12.6	40,0005
21/02/2018 HMAS_TS01_P009_180221	Normal	Biote	Eustrephus Latifolius - Wombet berry, Plant	10.00		40.001	NLDL2	40.102	<0.001	10,001	10.001	42,004	40.002	+0.002	40 d0.1	4150	vd.(405	obiab.	50001	-9341		10,0,0	10 (402	10,000	10,001	*B.001	<0.001	10,001	*10.065	40,002	40,00Z	*0.001	40,001	4.5	40.0005 VILDUOS
26/02/2018 HMAS_TS01_P010_180221	Normal	Biota	Eustrephus Latifolius - Wombat berry, Plant	10,002	46.061	50,001	ND,002	VC.002	40,009	40.001	45.001	40,00005	40,002	v0.007	40000	40,002	v6.066	+0,002	10.001	10,001		10,001	<0.002	10,600	100,001	<0.061	40,001	-48,001	<0.068	40,000	+11,512	45.651	40,001	13,5	V0.0006
22/02/2018 HMAS_TS01_P011_160222	Normal	Biota	Eustrephus Latifolius - Wombat berry, Plant	<0,002	91,011	TURLUR	<0.002	421,001,7	49,004	<0.001	40:001	*6.0006	<0.102	40.003	40,002	<0.002	40,005	40,402	101.01	10,001	40,005	-93.001	40,000	41.012	<0.001	40.001	46,061	-407.01	40.006	40.002	407.03	40,001	40,001	3.3	40,0005
23/02/2018 HMAS_TS01_VL005_180223	Normal	Biota	Rabbit, Male	<0.002	- 00,001	100.05	<0.000	40.002	<0.001	<0.501	40,901	0.001	<0.002	40,000	40,002	<0.000	<0.005	<0.002		<0,001		0.002	<0.000	0.004	40±01	40,001	96.06	0.007	<0.005	41.712	40,002	<0.001	0.013	35.4	0.006
23/02/2018 HMAS_TS01_VL006_180223 23/02/2018 HMAS_TS01_VL007_180223		Biota	Rabbit, Male Rabbit, Male	40,002	+0,/-01 +0,001	10,001	40,000	+10,1405	<0.001	40,001	10,001	0,002	40,000	+0.702	<0.000	e(1,002	+0.005	-0.000	O(0)1		~0,00£	4/5,001	+0.762	5000	10,001	*0.(e)1	40,001	0.014	+0.008		474007	41.501	0,014	7,2	0,012
23/02/2018 HMAS_TS01_VL008_180223		Biota	Rabbit, Male	40,009	40.001	100,007	V0.002	40,002	40,001	40.001	<0.061	0.003	40.009	<0.002 <0.002	40,000	<0.002	<0.066 etrates	40,002	103.01	<0.001	40,505	<0.001	10.002	40.502 20.502	100.01	100.001	40,001	0.014	<0.066	40.002	40,007	<0.001	0.014	0.8	0.011
23/02/2018 HMAS_TS01_VM005_180223		Biota	Rabbit, Male	40,100	46,0611	VILUE	40.102	40.002	40.001	40.01	40,001	0,001	<0.002	140.002	40.00g	40.602	40.005	ending.	-0x01	40.001	40,000 41,000	(0.00)	10.000	40.002	100.01	40,001	VIL. DU 1	-0.017 0.c01	40,000	40,502	<0.002		0.017	31.2 12.5	40,0005
23/02/2018 CH07_QC101_180223	Normal	Biota	Rattit, Male	40,500	10,001	100.091	40,000	40.762	40:001	<0.001	40,001	<0.0006	40,002	40,009	<0.002	40.002	<0.005	10,002				<0,001	145,040	-0.002	100,01	<0.001	10.001	+0.001	10,005	40,002	40,002	480001	40,001	20.4	40,000
23/02/2018 HMAS_TS01_VM006_180223		Biota	Rabbit, Male	4100.02		40,001	40.0.0	<0.102	43.051	41,001	40,001	40,000	40,002	<0.000	40.002	41,012		9.103	49.00t			40,001	<0) (4)2	500,00	40,001	40.001	40,001	40,001	40.005	40,002	40,002	40.001	49,001	10.7	44.DL06
23/02/2018 HMAS_TS01_VM007_180223		Biota	Rabbit, Male	47.000	100,001	40,001	NO. DOD	40,302	40,001	<0.001	<0.001	40,0005	10,002	KD 005	40.000	10.002		10000	50,001	40,001	40,665	502,001	10 (0)2	40000	40,001	<0.001	40,001	40,001	40.009	40,000	461,000	<0.001	K0.001	20.4	60.000
23/02/2018 HMAS_TS01_VM008_180223	Normal	Bota	Rabbit, Male	+93,002	riugert.	*G.5U1	HQ.102	461,007	*UD03	+0.001	40,001	+0.0005	<0.102	40,002	40.002	+0.600	10,005	+0402	<0.001	10,001	+0366	+0.601	10,000	100002	<0.501	10.004	<6.061	<0.041	-60004	44-26-2	43.002	40.004	40.000	34.7	OR LICENS

																		PF	AS .						- T							37	50 7		Inorganics		NA.
			PPCS/PFHAS (Sum of Total) - Lab Calo	N-Methyl perfluoroctane sulforamidoethanol	N-Ehyl perfluoroctans sufforamidoacetic acid	Perfuorcheptare suffenic acid	10.2 Fluoretalomer sufferio acid	4.2 Fluorotelomer suffonic acid	Perfluorobutana sulfonic acid	N-Methyl perfluoroctane suffonsmidoacetic acid	Perfluorohexane sulfonic acid (PFHuS)	Perfluorootane sulfonic acid (PFOS) - Branched	Perfluoropentanoic acid	8.2 Fluorofelomer sulfonic acid	N-Ethyl perfluorooctane suffonamide	N-Ethyl perfluoroodane sulfonamidoethanol	N-Methyl perfluoroctane sufforamide	8.2 Fluorotelomer Sulfonate (8.2 FTS)	Perfluorootanoic acid (PFOA)	Perfluoropentane sulfonic acid	Perfluorobutanoic acid	Perfluorodecanor; acid	Perfuncióecana sulfonio acid	Perfluorododecanoic ecid	Perfuorobaptanoic acid	Perfucesherancic acid PFHsA)	Perfluoronanaic soid	Perflueroottane sulfonic acid (PFOS)	*effuoroctane ulfonamide (FOSA)	Perfluoroletradecanoio cid	erfluorotridecanoic rost	*fluoroundecanoic eid	FAS (Sum of Total)	FAS (Sum of obst)(WA DER Liet)	foature (%)	Veight of Sample repared	erfluorootane uffonic acid (PFOS) -
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg 0.0002	mg/kg	mg/kg 0.0005	mg/kg	mg/kg 0,0005	mg/kg	mg/kg	mg/kg	mg/kg 0.0005	mg/kg	mg/kg 0.0002	mg/kg	mg/kg 0.0002	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kp	mg/kp	mg/kg	make	mo/kg	mg/kg	moke	- 1	0	mg/kg
QL .			0.0002	0.0005	0.0002	0.0002	0.0005	0.0006	0.0002	0.0002	0.0002	0.0005	0.0002	0.0005	0,0005	0.0005	0.0005	0.0006	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	mg/kg 0.0002	0.0002	0.0005	0,0002	0.0002	0.0002	0,0002	0.1	0.1	0.0005
late Field ID	Sample Type	Matrix Type																							De la		1			10000000							
1/02/2018 HMAS_TS01_Se4001_180221	Normal	soil	(9400)	40.0005	10,0000	40,000	40,0005	<0.0005	VID.0000	407000	46,000		×3,0002	40,0005	1010000	<0.0005	341,9056	40.000e	<0.0002	<0.0002	<0.001	40,000	40,0650	VR 0000	40,0002	<0.00002	×9.7602	491.00%	40,000/2	4E0006	40,000	4,0,0,002	56,0003	40.400	3.1		T
/02/2018 HMAS_TS01_Sei002_180221	Normal	soil	0.0005	*9.0000	40.400.2	40/100/15	46.00/0E	×6.0000	401/02/32	W.505.602	40.1600		45/D/402	400-000-5	<0.00005	30.00 es	H0.0006	10/10/75	4/1/0//02	*10,0x00/1	100,001	4/300002	<0.0000	40.0002	30,00002	1003000	40.407.0	0.0005	<0.0400	40.0005	40,00402	*44.00000	0.0005	0.0005	3.7		+
5/02/2018 JBRF_TS01_Sol001_180226	Normal								100001	19891			-16 TSO/R	20.7755	10.0000	124,000	100 / 402	and today's	- 10 Years	-40,001	-45,505	10.061	<0.000	40,502	40.001		-	- voror	40.006	<0.602	40.002	70.361	100,000	410174		116	9,1500

Stedman, Andrew (Health)

From:

Clapham, David

Sent:

Wednesday, 30 May 2018 11:10 AM

To: Cc: Barr, Conrad (Health); Sargent, Narelle

Subject:

Hudson, Lyndell (Health); Chester, Heath; Stedman, Andrew (Health) FW: Factual letter 13 - Terrestrial biota result on site sampling [SEC=UNCLASSIFIED.

DLM=For-Official-Use-Only]

Attachments:

2126171_LET_factual letter 13_ Rev 2_May 2018.pdf

Follow Up Flag:

Follow up

Flag Status:

Flagged

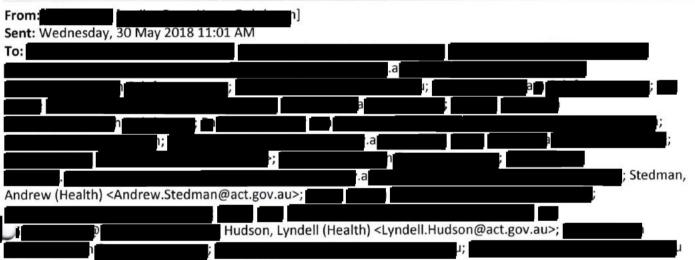
Dear Narelle and Conrad

Please find attached a factual letter relating to terrestrial biota results.

To be factored into our advice to DIRD.

Thanks

David



Cc: PFASIM Jervis Bay <pfasim.jervisbay@defence.gov.au>

Subject: Factual letter 13 - Terrestrial biota result on site sampling

Hi JBRF PCG.

Attached is factual letter 13, which reports the laboratory sampling results received for terrestrial biota, taken on Defence estate between February and April 2018.

If you have any questions please contact:

Defence Project Manager -Defence Project Director -GHD Project Manager -

Regards,



Level 2, 57 Granam Street (PO Box 621) Nowra NSW 2541 Australia | http://www.gnd.com/ Water | Energy & Resources | Environment | Property & Buildings | Transportation

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29 May 2018

2126171_LET_factual letter 13

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

Dear

JBRF & HMAS Creswell- Environmental investigation: Preliminary sampling results Terrestrial ecology sampling results from onsite investigations (processed by 27 April 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 27 April 2018 for the terrestrial biota sampling program within the Site.

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





Enclosures:

Figure 1: Biota Sample Locations

Figure 2A: Concentrations of PFHxS + PFOS (Sum) - Invertebrates

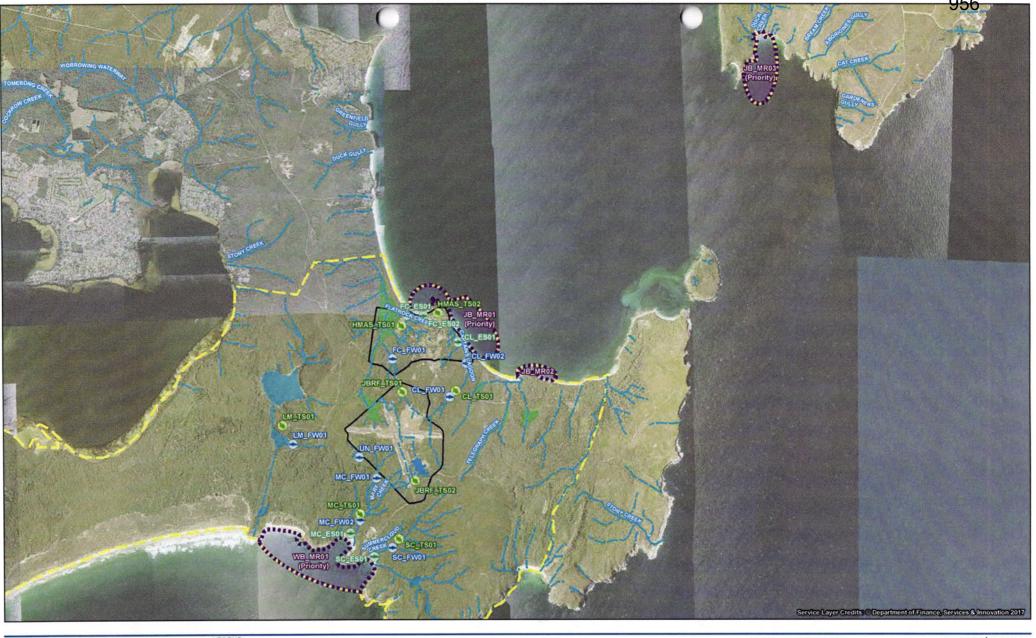
Figure 2B: Concentrations of PFHxS + PFOS (Sum) - Plants

Figure 2C: Concentrations of PFHxS + PFOS (Sum) - Mammals

Table 1: Biota Results - JBRF

Table 2: Biota Results - HMAS Creswell

Table 3: Co-located Soil Results - JBRF and HMAS Creswell



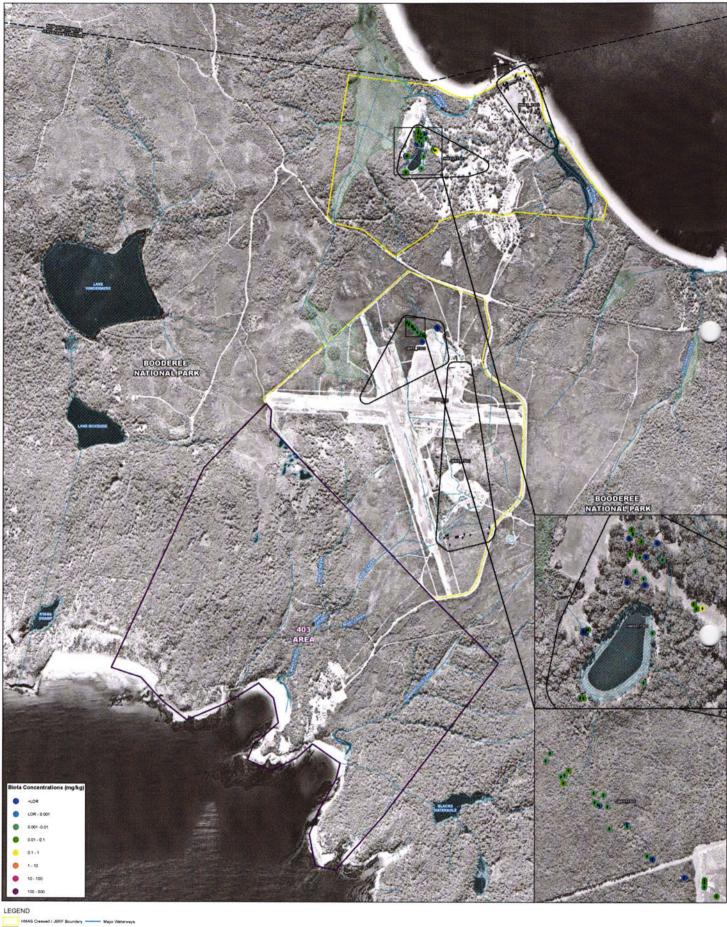


Department of Defence

Job Number 21-26171 Revision Date 27 Apr 2018

Biota Sample Locations

Figure 1



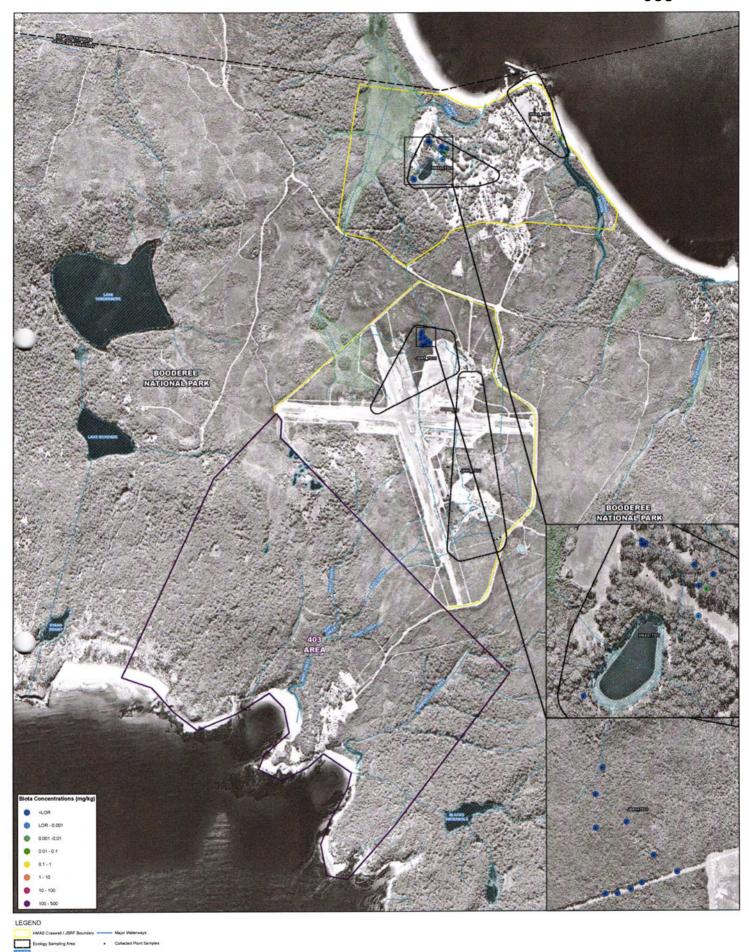






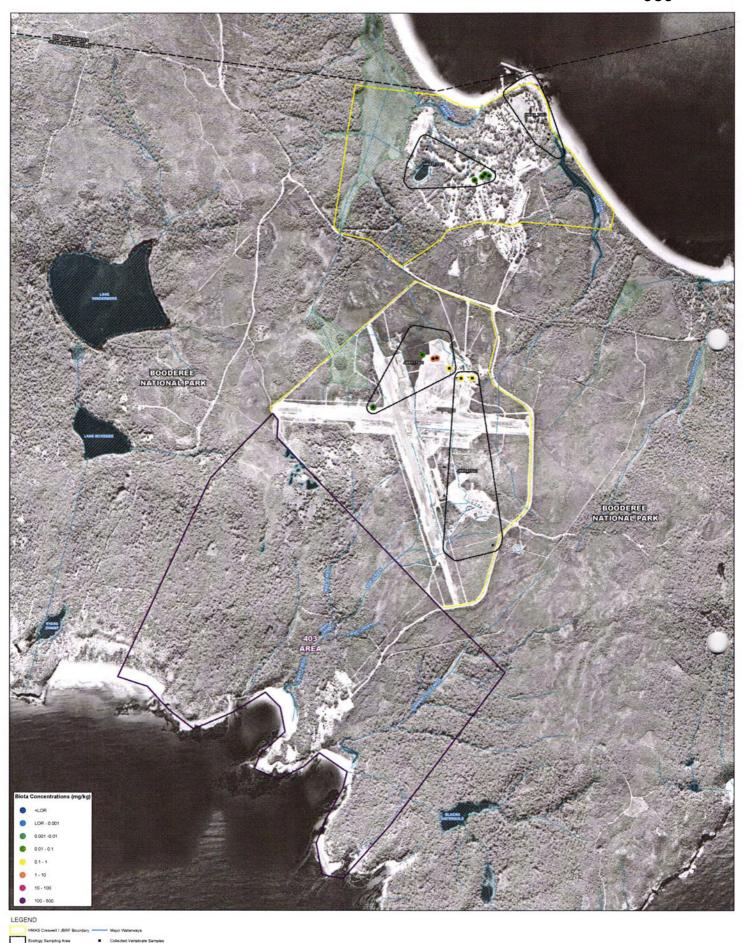
Department of Defence HMAS Creswell and Jervis Bay Range Facility

Concentrations of PFHxS + PFOS (Sum) - Invertebrates



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Department of Defence HMAS Creswell and Jervis Bay Range Facility Concentrations of PFHxS + PFOS (Sum) Job Number | 21-26171 Revision | A Date | 08 May 2018









Department of Defence HMAS Creswell and Jervis Bay Range Facility Concentrations of PFHxS + PFOS (Sum) Job Number | 21-26171 Revision | A Date | 09 May 2018

- Vertebrate Figure 2C

Level 15, 133 Castilereagh Street Sydney NSW 2000 T61 2 9239 7100 F61 2 9239 7199 E sydmail@ghd.com.au W www.ghd.com.au purpose and carrot accept lability and responsibility of any lind

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				F 50 5	P S	900	9 8	2 8	1 8	The same	8 4	PFOT	do	2 8	F 9	2 2	700	age (8 8	9.8	8	8	8.0	90.0	6	83	8	PF0 8	0.00	- Spoon	- South	8	3	2 2	060
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				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg 0,001	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg 0.002	mg/kg 0.002	mg/kg 0.0005	mg/kg 0.001	0,1	mg/kg 0.0005
EQL				0,002	0.001	0,001	0,002	0,002	0.0005	0,001	0.0005	0,0005	0.0005	0,0005	0,002	6,062	0,005	0,0005	0,0003	9,001	0.005	0.0005	0,002	0.0006	0,0005	0,0005	0.0008	0,0003	0,005	0.002	0,002	0,0005	0.001	0,1	0.0006
Date Field ID	Sample Type	Matrix Type	Matrix Description																											40,002			0.002	2.7	0.002
26/02/2018 JBRF_TS01_8001_180226			Ant, Invertebrate Ant, Invertebrate	40,000 90,002	40,001	40,001	9,00	40,002	100.07	40,001	40,001	<0.700A	<0.001 <0.002	40,009 +0.002	40.002	40,000 40,000	40,005 40,005	10.602	49,091 49,091	40,000 40,000	<0.00°	49,064 69,064	*0.002 *0.002	40,002	49.00T	40,001 40,001	40,001	90.002	410.005	<0.102	40.002	rutul	<0.002	7.2	0.0002
26/02/2018 JBRF_TS01_I002_180226 26/02/2018 JBRF_TS01_I003_180226	Normal		Ant, Invertebrate	16,742	46,001	420001	40,002	46,262	<0.001	40,001	<0.001	40,0005	42,002	<0.002	<0.000	40.002	49.099	10000	100,001	10,001	<0.005	~2,001	-0.002	20000	192,501	19.00	<0.001	0.002	1000	<0.000	X11,010/	49.00	0.002	2.9	0.002
26/02/2018 JBRF_TS01_8004_180228	Normal	Biota	Ant, Invertebrate	40,002	40,004	right	<0.102	40,003	*11,001	40.001	<0.001	40,000F	<0.000	40,003	40,002 50,002	<0.002 (0.002	<0.000	434032 50402	<0.001	100,011	10,005	+0,001 +0.001	40,002	10000	40,001 40,001	10,001	46,061 40,001	0.002	10,005	46,002 50,002	+0.102 +0.102	10,001	0.002	5.3	0.0009
26/02/2018 JBRF_TS01_8005_180226 26/02/2018 JBRF_TS01_8006_180226	Normal Normal	Biota	Ant, Invertebrate Snall, Invertebrate	40,002	40,001	+5/051	40,000	46,002 46,002	10:001	10.001	<0.001	+0.0005	40.002	+0.002	40.000	40.002	ed.(465	10.002	+9.001	+0.691	10.000	e0.001	-0.702	40.002	10.001	+6.00	46,301	10.501	+0.005	<0.002	40,002	+0.07	-(0.00)	2.2	00,00000
26/02/2018 JBRF_TS01_K07_180226	Normal	Biota	Spider, Invertebrate	APDPS.	+0,001	. 40,001	ATTORS.	v0.002	40,001	V0.001	+9.591	0.007	V0:002	19.002	4000.	40.002	×3.096	00000	47.074	(9,09)	<0.000	100,02	19.052	400.000	10,001	*10.6821	10,001	0.082	<12.015	40,102	<0.007	A0'00	0.062	1,3	0.075
26/02/2018 JBRF_TS01_K08_180226	Normal	Biota	Spider, Invertebrate	10,002	*6.001	40,001	40,002	<0.002	<0.601	40.001	<6.061	0.001	40.002	<0.002 40.007	40.00g	40.002 40.002	49.005	10.002	40.001	40.001 40.000	40.005 40.005	-0.001	40.002	400,000 Z	40.461	40.001 40.001	460,061 460,061	0.009	49,000	40,002	40.02	40.001 40.001	0.009	3.1	0.006
26/02/2018 JBRF_TS01_009_180226 26/02/2018 JBRF_TS01_010_180226	Normal	Biota	Spider, Invertebrate Spider, Invertebrate	40,002	~60,001 ~40,0d1	95,051	40,461	*80,000	10.001	60,001	*40,001	10,000s	40,000	441,002	<0.002	40.003	40,005	V9.052	<0.001	*4U07	V0.065	100.05	0.002	90,002	15,004	- restars	100,001	0.006	<0.006	10.002	40.50	40,000	800.0	1.6	0.006
26/02/2018 JBRF_TS01_J011_180226	Normal	Biota	Spider, Invertebrate	46,002	40,001	40,001	40,202	40.002	40.001	40.001	407.401	0.002	10,002	+0.002	<0.002 <0.002	40.002	<0.1405 vb.pxps	<0.002 <0.002	49,001	<0.001	40,000	40,001	+0.002 +0.002	<0.002 <0.002	40,001	+10.(30)	40.001	0.012	19,000 19,000	40,602	40,002	*0.001	0.012	2.0 0.3	0.003
21/02/2018 JBRF_TS01_J012_180221 26/02/2018 JBRF_TS01_J012_180226	Normal Normal	Biota	Moth, Invertebrate Moth, Invertebrate	90,002	40,001	*0.501	<0.002	40,003	<0.001 +0.001	+0.001	45.064 45.064	*0.001	<0.002	<0.002	*0.000	<0.802	<0.006	<0.002	10.001	10.001	+0,005		10002	K0.002	48.01	10,001	<6,061	0.063	101001	etube2	-10,1002	100,001	0,053	0.2	0.052
26/02/2018 JBRF_TS01_J012_180226 26/02/2018 JBRF_TS01_J013_180226		Biota	Invenebrate	40,000	10,001	<0.001	40,502	40,002	100.001	<0.001	190,00	10,7006	40.002	40,002	10 002	40,400	48,005	<0.002	<0.601	58,000	42,005		48,000	10.002	40,001	190,92	100.00	0.003	48,005	VELTO2		<0.001	0.003	4.9	0.003
26/02/2018 JBRF_TS01_J014_180226	Normal	Biota	Invertebrate	40.562	40,001	<0.001	40/202	<0.002	\$ 60 T	45,361	0.0017	0.001	40:002 41:005	+0.002 101/100	<0.002	40.002	<0.005	<0.002 ×0.002	40,001	+0.601	<0.005	40,0005	<0.002	<0.002	130,001 A300,004	VII.0001	10.001	0.003	<0.005	10,702	46,062	40.501 96.5006	0.003	4.0	0.002
28/02/2018 ST23_GC109_180228 26/02/2018 JBRF_TS01_8015_180226	Field_D Normal	Biota	Invertebrate	10,002	40,001	4005471	40.102	46.06t	403,007	100.001	<0.001	0.001	40,303	<0.002	+20,602	<0.009	<0.009	<0.802	42.001	<0.001	40,005		<0.002	400503	190,001	<0.061	40,001	0.004	<0.009	40,000	44,002	<0.001	0.004	3.4	0.003
26/02/2018 JBRF_TS01_I016_180226	Normal	Biota	Invertebrate	40,002	<0.001	42(0)	<0.000	<0.007	40.00T	<0.301	<0.001	40,0,05	<0.005	1,00.0>	<0.002	<0.100	40,005 40,005	40.000	<0±01	<0.001 203.05	\$0,005 \$1,005	<0.001	<0.002	VILDE2	<0.001 40.001	40.001	10.001 10.001	0.003	40,008	411010	40.162	40.001	0.003	3.1	0.003
26/02/2018 JBRF_TS01_J017_180226	Normal	fliota	Bush conckronch, Invertebrate Fly, Invertebrate	46,000	40,001	40.001 40.001	40,000	407.005 407.005	<0.001 <0.001	40,001	+0.001	0,001	40,002	<0.002	40.802 40.800	40,002	40,005	10.0100	10,001	*0.00	10,005	46,001	+90,002	40,002	40.001	*0.001	-9,001	40.001	*U.DUS	49,000	10,007	40000	10.001	8.3	10.000
27/02/2016 JBRF_TS01_J016_180227 27/02/2018 JBRF_TS01_J019_180227	Normal	Biota	Fly, Invertebrate	40'00'5	100.001	40,001	40.002	<0.002	40,001	40.001	10001	<0.000S	50,002	<0.002	400,000	49.002		<0.001	< 9,001	<0.001	<0.006	40,001	40.005	10,602	40,001	<0.001	40,601	92,001	<0.005	<0.002	<0.002	103.05	40,001	2.7	411,0005
27/02/2018 JBRF_TS01_I020_180227	Normal	Biota	Fly, invertebrate	40,302	F00.00	*G.001	<0.002	40,003	<13,001	<0.001	46.061	<0.002 <0.006	<0.002	< 0.00.2	<0.002 50.002	10,002	(0.005	+0,002	<0.001	10.001	40.005 SARIA	100.00	10.000	40,502 visibs2	<0.001 <0.001	100,01	48,501 NuD01	40,001 40,001	40.005	40.002 40.002	+0.002	40.001 40.001	40,001	6.5	<0.002 (0.0005
27/02/2018 JBRF_TS01_l021_180227 27/02/2018 JBRF_TS01_l022_180227	Normal	Biota	Earthworm, Invertebrate Beetle, Invertebrate	40,002	40,001	100001 VS 251	40,002	<0.007 <0.002	49 (91 45 (51	40.001	40,001	40,0003	<0.002	<0.002	V\$.002	<0.002	40.005	VD 1002	40,001	<0.001	V0.005	40,001	+0.002	10,002	40,001	40,001	100.001	40,001	40,505	40.00g	<0.002	<0,001	40.001	0.6	40,5005
28/02/2018 JBRF_TS01_023_180228	Normal	Biota	Invertebrate	11,012	100.01	<0.001	<0.002	<0.002	40,004	40,001	40.(0)	0.004	40.002	<0.002	<0.00.	40.002		40,000	ep.Dirt	4010	<0.00E	-cir.birt	+10.002	40,000	40,001	40(0)	/0.001	0.024	41),(1)5	401107	40/2002	vo bu i	0.024	3,1	0.02
28/02/2018 JBRF_TS01_8024_180228		Biota	Invertebrate Invertebrate	10,102	<0.001	<0.601	40,002 40,002	<0.002	40,001	40.001 40.001	46,061	0.005	40,002	<0.002 <0.002	40.000	-ID.1692		<0.002	10,001	100.001	40006 40006	<0.001	49,002	40,002	-10.101	100,001	40,001	0.019	49,000	40,002	<0.002	<0.001	0.019	2.0	0.015
28/02/2018 JBRF_TS01_8025_180228 28/02/2018 JBRF_TS01_8026_180228	Normal	Biota	Invertebrate	40,000	40.001	40 (01	40,002	<0.002	100.001	40.001	<0.001	91,0006	40.000	40,002	<0.002	<0.00.	<0.005	VD 002	100.05	40,001	<0.005	103301	748,000	v6.062	100.00	<0.001	199,061	0.009	40,005	40,002	40,102	700.05	0,009	11.3	0.009
26/02/2018 JBRF_TS01_P001_180226	Normal	Biola	Banksia ericifolia, Plant	46,002	<0,001	40,001	40,002	40,/02	<0.001	40,001 90,001	v0.001	40,0003	40,002	+0.002 +0.002	40,600	10.002	<0.005 800.09	<0,602	40,001	<0.001	<0.006	40,001	*0.002	40,002	10,001	<0.001	40,001	46,064 46,064	+0.745	<0.002	40,002 90,002	*10.001	<0.001	30,4	40,5005 50,0005
25/02/2018 JBRF_TS01_P002_180226 27/02/2018 ST17_QC104_180227	Normal Field D	ficta	Banksia ericifolia, Plant Banksia ericifolia, Plant	40.002	40,001	40.001	V0.702	<0.002	*0.5605	40.001	10.0565	40,000,5	40.005	<0.0065	4000	10,000	19400	40,00cS	+0.0003	1900		6303.0>	-9100	10.6005	<0.0406	40,000%		<0.0000	1919			40.0006			
26/02/2018 JBRF_TS01_P003_180225		Biota	Banksia ericilicea, Plant	40,000	46,001	10/101	40,002	40,000	40.00F	45.001	<0.001	100,000 E	<0.000	40,000	<0.042	<0,002	41/000/2	STREET	<0,601	40,001	<u. <="" th=""><th>103.01</th><th>'40,00',</th><th><0.002</th><th>15,001</th><th>49,001</th><th>- MLDUT</th><th>40,001</th><th><0.008</th><th>477005</th><th><0.105</th><th>+0,001</th><th>-07070</th><th>31,3</th><th>40,000.5</th></u.>	103.01	'40,00',	<0.002	15,001	49,001	- MLDUT	40,001	<0.008	477005	<0.105	+0,001	-07070	31,3	40,000.5
26/02/2018 JBRF_TS01_P004_180226		Biota	Banksia ericifolia, Plant Banksia ericifolia, Plant	40,000	<0.001	40.001	40,000	<10.002 <10.002	100.001	<0.001 #0.001	A0,501	40,000s	<0.00.1	<0.003	40,002	40,002 40,002	<0.005 <0.005	<0.002	40,001	<0.001	10,005	40,001	<0.002 <0.002	40,002	40,001	46,001	<0.001	40,001	40.005 40.005	40,102 40,102	40,002	40,001 40,001	<0.001	66.8	40-0005 40-0005
26/02/2018 JBRF_TS01_P005_180226 27/02/2018 JBRF_TS01_P006_180227		Biota	Epacris Micropylia, Plant	40,000	100,01	<0.001	V0.002	46,062	40,001	40.001	×0.001	<0,0005	NU.002	₹0,052	<0.602	H2.002	10.005	<0.602	<0.001	103.05	<0,605	100,001	40.00%	40,002	100,001	<0.001	40,061	92,001	<0.005	40,000	+30,009	<0.001	40,501	6.8	-su.0006
27/02/2018 JBRF_TS01_P007_180227	Normal	Biota	Epacris Micropylla, Plant	40,102	40,001	100,007	<0.1003	49,000	<0.60t	-0.001	40,001	<0.0006	<0.002	+0.003	+0.802	<0.102	40,005	10,012	<0.601 <0.601	10.001	<0.005		40,002	*0.002	40,001	100.001	40,061	40,001	40,005	10,002	+10.002 +00.002	100.00	62.004 62.004	9.8	40,0006
27/02/2018 JBRF_TS01_P008_180227 27/02/2018 JBRF_TS01_P009_180227		Biota	Epacris Micropylla, Plant Epacris Micropylla, Plant	40,000	40.001	<9.001 ch.001	<0.002 60.002	401,002 401,002	<0.001	<0.001 <0.001	40,901	40,000s	40,002	+0.002	10.002	<0.002	<0,005	<0.002	40,001	+0,601	10,100		*0.0002	40,002	40.001	40.00T	10,001	40,001	40.00G	<0.002	40.062	*0.601	<0.001	5.4	*£.5665
27/02/2018 JBRF_TS01_P010_180227 27/02/2018 JBRF_TS01_P010_180227		Biota	Epacris Micropylla, Plant	111713		40,001	<0.002	<0.005	40,001	40.001	<0.001	V03005	40,002	40705	40,000	40,002	19,035	0.00	10,001	100.00	<0,606		<0.002	<0.002	40,001	10201	-10,001	19,041	10.005	<0.002	<0.000	40.00	403,01	3.8	<0.0006
27/02/2018 ST18_QC105_180227	Field_D	Biota	Epacris Micropylla, Plant	40.002	50.004	0.011	40.000		40,5005 40,501	40.001	40.000a	0.0560	<0.005	<0.0003	40.00g	10.100	60.005	<0.0005 xxx0x2	40,0003	0.001	411,008	10,001	40.00.	40.0005 mile2	2000F	ND.00095	40,0005 (UU)UH	0.471	48,005	40.002	140,162	40,001	0.499	32.7	0.415
13/02/2016 JBRF_TS01_VL001_18020 13/02/2018 JBRF_TS01_VL002_18020		Biota	Rabbit, Female Rabbit, Female	40,502		49.091	<0.000	<0.000	10.001	40,001	<0.001	0.0010	40.002	<0.002	10.002	<0.002	<0.005	<0.002	10.051	40,001	<0.000		<0.002	<0.702	<0.001	~8.601	40.001	0.022	<0.005	V0,702	V0,002	40,001	0.022	29.8	0.0210
13/02/2018 JBRF_TS01_VL003_18020	Normal	Biota	Fox, Male	40.502		0.037	40.002	+0.002	40.001	40.001	0.101		40.002			60.002	<0.005 <0.005	200.00	40.001	0.002	40,000		0.015	10,002	10,001	*19,097	40,501	2.57	*U.005	40,102	40.002 40.009	0.002	1.75	65.4 136	1.57
13/02/2018 JBRF_TS01_VL004_18020 13/02/2018 JBRF_TS01_VM001_18020		Biota	Fox, Female Rubbit, Female	40,002		0.022	<0.000	40.002	<0.0001	40,001		0.0500	<0.709	40,002	40,000 40,002			40,002		10,003	<0,000		10,000	40,002	-0.401	10,001	*0,061	0.001	10,000	*0.002	<0.002	10,004	0,001	32.6	0,0009
13/02/2018 DH01_QC101_180209	Normal	Biota	Rabbit, Female	40,000	10,001	109.09	40,002	50,002	<0.001	40.001	0.001	0.0007	40,000	40,000	<0.002	40,000	49,005	V0.002		49,000	×3,005	<0.001	48,092	10,002			10,001	0.005	<0.505	40.003	<0.002	40,001	0.006	40.9	0.0043
13/02/2018 DH02_QC201_180209	Normal	Biota	Rabbit, Female	40.002	20101	15.001	10.00	10000	40,0006	o.b.	×0.00°	0.0010	40,003	+0.0005	10.00	40,002	10.005	<0.0008	40.00x3	<9.091	<0.008	411,007	v0.(152	10,0005	10,0005	3000.09	40,6005	0.033	*11.515	40,502	46,002	<0.5005 vu.tu-l	0,011	56.6	0.0100
13/02/2018 JBRF_TS01_VM002_18020 13/02/2018 JBRF_TS01_VM003_18020		Biota	Rabbit, Female Fox. Male	481065		<0.001	*0.002	<0.002	40,001 40,001	40,001	0.008	0.0007	10,002	<0.002	<0.000	40,002	-	40,000	-0.001	V0.001	40,005	50,001	<0.002	<0.002	40,001	10.001	40,004	0.011	10,000	40,500	40.00	100.07	0.017	53.4	0.0103
13/02/2018 JBRF_TS01_VM004_18020	9 Normal	Biota	Fox, Female	100,3002	10000	*9.001	<0.000	40,003	40.003	40.001	0.007	0.0007	40.002	40,002	40.002	<0.002	10.000	40 002 40 002	+0±01	<00,005 400,005	<0.005 V0.005	<0.601	0.002	<0.002 00.002	40,001	190.061	46.061 46.001	0.014	<0.006	*0.002	40,002	40,001	0.675	49.8 39.4	0.0133
23/02/2018 JBRF_TS02_VL009_18022		Biota	Rabbit, Female Rabbit, Female	40,000	40,501	0.014	40.002 40.002	41/0/0	40 (01 40 (01	40.001	0.033	0.129	40.002 46.002	<0.002	<0.002	*0.002		40,002	40,001	-0.001	10.600		<0.002 <0.002	10.002	10,001	-	40,001	0.284	+0.105	40,000	46,002	*0.001	0.372	8.4	0.233
23/02/2018 JBRF_TS02_VL010_18022 23/02/2018 JBRF_TS02_VM009_18022		Biota	Rabbit, Female	<0.002	40.001	420001	<0.002	40.75	40,601	×6.001	100 UV	0.001	40.002	<0.002	40,002	40,002	<0.000	40,002	40.001	×0.00:	493,00		<0.002	40,002	10,001				<0.00F	40,102	40,002	<0.001	0,003	45,8	0.002
23/02/2018 JBRF_TS02_VM010_18022	23 Normal	Biota	Rabbit, Female	40,000	100.001	19,035	<0.002	- 40.202	*i3,5(1)	9,0006	0.003	40,0005	<0.002		<0.000 <0.0006			<0.502		10.001	200,005		200.00	40.002 10.0002	*0.001			0.002	00000	40,500	*0.002	40.001 40.0002	0.005	14.3	0.002
CTRICIONAL MOR TEXA COM 180927				100,000	40,000,0	*ULD0002	-VELOCOS	40,500,6	- WILDLIGHT																										

									y		v/							PF	AS				91	iet.			rue I file						-	_	NA]
				7	sciere .				uffore	100	Monks	ufforic	9		clare	a clans			90		90	909	Monk	8	poe o	908	8	Mone	3	900	90	8	9	1000	Mone
				yl roodare mobelhar SA	f perfluoros mábacetio	roheplane : acid	Lorotelons c acid	orotalome c acid	robulare	yl rroctane rrichacelo	roheaare FHGS)	rooctane s FOS) - Bra	oceureo	orotelomer s acid	perfloro	perfuoro	yl recotans	orotelomer de (6.2 FT	roodanok	ropertane	robutanoic	endecanole	endecane	redodecan	roteptano	- Chesano	ronomenox	FOS)	rocciane made (FOS	rotefradeo	retribecan	roundecan	Sem of To	of Sample	rooclane s FOS) - Lin
				and	44	a se	801F	2.3	2 8	944	od ()	0 P	1 8	2.0	40	Pag.	9 4 6	2 2	100	2.5	l å	ą.	g R	å x	ą.	35	ag.	8 8	8 8	& R	- £	6 K	8	5 3	8 8
7				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	3.8	mg/kg
EOF				0.002	0.001	0.001	0.002	0.002	0.0005	0.001	0.0005	0.0005	0.0005	0.0005	0.002	0.002	0.005	0.0005	0.0003	0.001	0.005	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0003	0.005	0.002	0.002	0.0005	0.001	0.1	
Date Fleid ID	Sample Type	Matrix Type	e Matrix Description																																
19/02/2018 HMAS_TS01_J001_180219	Normal	Biota	Ant, Invertebrate	NUPUZ	10,001	<0.001	0.006	<0.002	40,005	Tulture	40,001	0.001	470/0	<0.902	<0.000	40,002	<0.006	40,000	10002	vitini)	40,006	va,601	-10.002	100,000	10,071	10.001	46,001	0.016	<0.006	40,002	V6U0607	103.07	0.022	2.2	0.015
19/02/2018 HMAS_TS01_8002_180219	Normal	Biota	Arit, Invertebrate	40,002	100.001	<0.000 m	<0.1703	40.002	40,001	40,001	<0.001	0.002	50.700	40.002	40,000	40,009	40,006	40,000	<0.001	10:001	K0.005	103.691	45/35/2	40,000	90,001	10.001	40,000	0.022	40.005	46,000	90,002	100,001	0.022	2.4	0.02
19/02/2018 HMAS_TS01_I003_180219	Normal	Biota	Ant, Invertebrate	40,1/02	16.001	40.00	40,002	40,002	1000	<0.001	40.001	0.002	40.002	40,002	40.002	40.00%	40,005	40,002	<0.001	40.001	K0.005	<0.001	49,000	40.062	10,001	40,001	9.50	0.027	40,000	46,312	401.02				0.025
19/02/2018 HMAS_TS01_J004_180219	Normal	Siote	Ant, Invertebrate	40,000	40,001	100.00	40,000	41,002	100,001	<0,001	190,001	0.002	<0.002	+30,7802	<0.002	<0.007	440,005	40.002	×0.001	48,001	VD (00)	<0,001.	46,000	11,012	<0,001	+0.001	4750	0.022	40,700	16,762	<0,002	<0.001		2.0	
19/02/2018 HMAS_TS01_006_180219	Normal	Sicts	Ant, Invertebrate	46,000	435.001	19,000	49,002	+12.142	<0.001	₹3,504	43(74)	+0,5006	45,002	<0.002	40.000	495000	+10,0406	<0.000	43,001	*0.001	(0.000)	60,000	+10.0402	-0.002	40,007	+19.0101	40,001	0.007	*0.005	40,002	10,002	*0.591	0.007		
19/02/2018 HMAS_TS01_8006_180219	Normal	Siota	Beetle, Invertebrate	40,002	<0.001	49,001	<0.008	<0.002	40,001	10,001	<0.00 l	<0.0005	12.002	40 DG2	40,002	50.002	10,006	40,002	100.001	100:07	40,605	40.001	×0.002	40,001	40.001	10 (01	40,001	0.001	<0.095	40,000	40,012	48 (0)	0.001	1.8	0.001
19/02/2018 HMAS_TS01_J007_180219 19/02/2018 HMAS_TS01_J008_180219	Normal	Biota	Milipede, Invertebrate Fly, Invertebrate	40.002	10.001	*30.EAT	40,000	1,00,00	40.007	<0.001	40,001	0.001	40.002	40.00.2	<0.003	<0.000	(0.005	40.002	<0.001	<0.001	≠0.005	<0.001	(0.002	+0.502	40.701	101.001	40,001	0.006	10.005	40,002	-10.002		0.006		
20/02/2018 HMAS TS01 1009 180220	Normal	Biota	Snall Invertebrate	40,000	90,001	<0.001	40,000	411,002	V0.001	40,001	+00/901	50,0001 50,0006	<0.002	40.00U	<0.002	<0.002 <0.502	40,005	40.002	<0.001 <0.001	40,001	<0.005 <0.005	r0.001	40,000 40,000	40.005	100,01	100001	45,001	0.002	K0,905	40,002	-0.002		0.002		
20/02/2018 HMAS_TS01_000_180220	Normal	Ricta	Spider, Invertebrate	411D12	10:01	<0.001 shifted	40,012	*0.102 *0.102	40.001	40,001 40,001	400.001	0.002		40.002	<0.002	400,000	10,005	<0.002	40,001 40,001	1000	<0.606	<0,0001	<0.002	40.002	40,003	*10,0001	40,001	0.023	<0.005 <0.005	40,702	40.002 40.002		0.023		40,0005
20/02/2018 HMAS_TS01_R011_180220	Normal	Biota	Moth, Invertebrate	VILTUS	40.001	+0.00*	10.002	40.002	60,001	40,001	40.001	10,000		vti 302	KRINEO	<0.00	-	40.000	140,000	-(0.001	60,505	50.001	eti (162	40,000	90,001	40 dt/1	40,001	10.001	40.004	40,002	40,000		40,001		10,0006
20/02/2018 HMAS TS01 I012 180220	Normal	Biota	Scider, Invertebrate	40,102	40,001	ended.	<0.102	40,002	*11.007	40.001	40.001	0.001			40.002			40.002	<0.101	40.001	40,005	<0.01	10.002	10,002	10101	10.001	45-06-7	0.028	40.005	10,000	<0.102				
21/02/2018 HMAS_TS01_I013_180221	Normal	Biota	Snal Invertebrate	40,602	40,001	75 DU 1	40,000	41,00y	40.001	40,001	40.001	40,001	40.002	40.000	40.002		40,005	40/00/2	<0.001	40,001	00,005	c0.601	+0.005	<0.002	10.001	<0.001	10,001	70,001	40,005	10.002	200.002	48,001	40,001	1.8	0.027
20/02/2018 HMAS TS01 IO14 180220	Normal	Bota	Snat Invertebrate	40,002	(Q.(Q))	*00.00*	471,000	+10,1100r	10.001	40,001	+10,001	-D.0009	40.00J	+(0.760)	-strate	40,007	<0.005	eb.abe	404001	ethial.	-0.00F	6/10/11	+10.(+02)	10,002	60x004	+0.001	10.001	10.074	10.005	-0.00	+0.000	60,007	-(D,1)01	3.9	10,0005
20/02/2018 HMAS TS01 J015 180220	Normal	Biota	Snail Invertebrate	VILUE2	40.001	-00,004	<0.002	VEL102	40,001	\$0.00T	40,001	12,3005	40.00	×0.002	40.00\	10,000	×0.506	40.000	4/1/01	<0.001	300,005	53,607	10.002	40,600	SILDITI	45.05/1	42,001	10,001	KD 006		40,002	10.001	40,005		
20/02/2018 HMAS_TS01_J016_180220	Normal	Biota	Snall, Invertebrate	<0.002	10.001	rotari	0.70	<0.002	<0.001	<0.001	<0.001	60,5005	<0.002	40.002	<0.002	<0.009	<0.003	<0.002	<0.(0)	<0.001	<0.505	10.00 i	+5.002	40,562	100.001	100.001	40.561	10.01		10,502	40.002				
20/02/2018 HMAS_TS01_I017_180220	Normal	Sicta	Spider, Invertebrate	×0,002	V0,001	**************************************	<0,002	40,007	100,00	<0,001	40,001	0.001	<0.000	40.00G	V0.002	<0.1602	+0.005	40 0.2	-0.001	40,001	witchists.	10.00	~0.00.2	40.002	10U01	+0.001	46,067	0,006	40,000	10.0.2	VI0.U02		0,005		
20/02/2018 HMAS_TS01_ID18_180220	Normal	Bota	Spider, Invertebrate	40.001	92,701	10001	40,000	*40,009	<0.001	+0.001	40,001	0.001	45,002	40,002	40,002	<0.002	1,0,005	10 102	<0.005	10,001	10,005	103.05	+40.040	10.002	100,001	+45,00%	40,001	0.006	-48.00S	40,002	500.0×	43,501	0.005		0.004
20/02/2018 HMAS_TS01_J019_180220	Normal	Biota	Beetle, Invertebrate	51.012	40.561	<0.001	<0.00	<0.165	40,001	40.001	+40.001	<0.0065	49,002	40,002	40,000	40,002	10 (105	<0.002	40.001	<0.001	10,600	416001	40.002	500.00	sitairi	<0.001	40,001	10,001	<0.005	140,1002	40,002	140,001	4D,J01	3.6	50u0us
20/02/2018 HMAS_TS01_I020_180220	Normal	Biota	Spider, Invertebrate	N0.002	X0.001	<0.027	<0.002	40.002	40,001	49,001	-c0:001	0.003	20,000	<0.002	K0,000	+2.002	<5,005	+0.000	+0.(0)	10,001	40,006	50,001	<0.002	100,002	10,001	10 (0)	40,501	0.03	<0.000	140,000°C	*0.000	(0)(0)	0.03	2.0	0.027
20/02/2018 HMAS_TS01_8021_180220	Normal	Biota	Spider, Invertebrate	<0.102	16,061	0.001	<0.7.02	+0.00.2	0.003	<0.001	0.002	0.093	40,1,02	+0.002	+0.002	<0.002	(0.005	40,402	<0.001	(0),001	<0.005	<0.001	- HOURS	40,002	40,001	100,001	14E-06/1	0.102	40,005	46,262	HU.5-02	<0.001	0.108	2.6	0.009
21/02/2018 HMAS_TS01_K022_180221	Normal	Biota	Earthworm, Invertebrate	<0.502	10,001	1000	40,000	<0.007	Y0.001	40,001	40.001	100 02	<0.002	40,902	V0.002	<0.000	40,005	47/102	<0.T01	30,001	V0.005	<0.01	40,000	40.002	<0.001	100,001	(40.00)	0.005	<0.005	47003	<0.002	40,001	0.005	0.7	0.005
23/01/2018 HMAS_TS01_I037_180223	Normal	Biota	Fly, Invertebrate	ell.bill	40,501	100.00	40,002	*10.002	40.001	<0.001	+30,001	+0.0000	49.000	<0.002	<0.002	₹3,002	<0.005	40,000	400001	<0.6d1	10,005	49,601	+0.002	40,002	100.09	+1/1.0(31)	(0,00)	40,001	*U.045	<\$0.0000	1,000.09	*UUUT	40,001	0.7	<0.000E
23/01/2018 HMAS_TS01_K38_180223	Normal	Biota	Beetle, Invertebrate	401000	<0.001	40,001	407075	VQ,1302	40,001	47001	400,001	<0,0005		40.002		42,000		40,002	10,001	10401	303,005	100001	×0.002	40,000	190007	15.001	40,001	40,001	<0.005		40,007	40.001	<0.001		
28/02/2018 HMAS_TS01_NS0_180228	Normal	Biota	Fly, Invertebrate	<2,002	40.001	440,5401	42,002	40.002	443,0001	40,001	40.001	0.001	40,002	45.052	40,002			4/3/2/2	<0.601	<0.001	<0.005	+0.001	<0.002	40,562	10,001	100.001	49,561	0.005	(0.005	40,002	40,002	40.001	0.005		0.004
28/02/2018 HMAS_TS01_9051_180228	Normal	Biota	Beetle, Invertebrate	<0.005	40,002	<0.005	_	41.000	MIDUS.		40.000	<0.004		1000 P	KO 005		40.005	40 (102	101.00	(0.00.2	431,005	<0.002	40,000	40.002	<0.1.02	4000	VL:012	10,002	49.000	49,005	<0.1.05	49,000	41.Dt.2		<0.004
26/02/2018 HMAS_TS01_K62_180228	Normal	Biota	Fly, Invertebrate	*0.003	45,001	40,001	40,000	40,002	<0.001	40,001	<0.001	-0.0056		10,702	<0.002	<0.000	<40.005	0.002	10,001	<0.001	10,000	100,05	<40.000	40,002	400001	~QL/A05	V6E001	1000	<0.000	<0.702	×6,002	<0.001	<0.001	0.2	40,0000
2/03/2018 HMAS_TS01_3056_180302	Normal	Biota	Earthworm, Invertebrate	40,002	42.003	-0.001 +0.001	41003	+10.102	100,001	40,001	10,001	0.002		40,002	<0.000	40,002	<0.006	10.002	CADN	<0.001	<0.000	6(6,004)	+10.002	401105	50,004	40,001	40,001	0.022	<0.005		40,002	103,01	0.022		0.02
2/03/2018 HMAS_TS01_J057_180302 2/03/2018 HMAS_TS01_J058_180302	Normal	Biota	Beetle, Invertebrate	<0.002	40.001 46.061	+0.001	<0.000	40,002	40,501 40,501	<0.001	<0.001	*0.0005	<0.009	V0.002	<0.001	40.009	10 006	<0,00.	<0.001	(0.00)	40,005	10000	40.005	40,002	100,001	70.001	40,001	40,001	10 005	_	40,002		40,001		19.0006
2/03/2018 HMAS_TS01_J059_180302	Normal	Dicta	Earthworm, Invertebrate Earthworm, Invertebrate	40,000	40,001		40,00	-17017	-112-0	63,001	46.001	44-3X-05	10,102	10,002	40.002	-0.002	10,004	470,0402	<2,001	10,001	+0,005	<0'031	10,000	10,002	40,001	10,001	40,001	0.009	40,006	45/00/2	140,1402		0.009		0,009
2/03/2018 HMAS TS01 K60 180302	Normal	Biota	Fly. Invertebrate	*6.502	40,001	49.051	#0.002 #0.002	401.002	40.001	40.00t	+30,901	<0.0006 40.0006	40,002	40,002	<0.002	<0.002	40,005	40.002	<0.001	<0.001	<0.005 <0.005	<0.001 <0.001	40.002	40'005	40,001	40,001	40,001	0.003 40.001	40,005	40'005	40,002	49,001	0.003		0.003
21/02/2018 HMAS_TS01_P001_180221	Normal	Biota	Pteridium Esculentum-Bracken, Plant	41LD12	10,161	40.001	40.D.G	VD 162	40,001	40,001	40.001	+0.0005		V0.902			10,005	40.002	10,001	<0.601	10.005	53.07	+0.002	40,002	164,007	+10.001	46,001	10,001	<0.005 <0.005	40,002	40,002	100.001	<0.001	3.4 56.2	\$1,0,00
21/02/2018 HMAS_TS01_P002_180221	Normal	Biota	Pteridium Esculentum-Bracken, Plant	V0.002	40:004	cotton	40,009	40.002	60 500	~Q.001	-ti 361	47,5005		<0.002 <0.002	60,000	10,000	10:000	<0.000	42,101	10001	<0,006	S0.001	<0.002	40,602	92.001	15 db1	46,001	10,001	-0.009	46,502	NUUNID*	10101	40,001	27.1	10.000
21/02/2018 HMAS_TS01_P003_180221	Normal	Biota	Pterklum Esculentum-Bracken, Plant	40.102	40.001	*ului	40,102	40.002	*10001	40.001	40.001	4U.DLGS		40.00.Z	40.002	<0.002	40.005	40 (102	<3101	10.001	40.005	r0.01	46.d02	40.04.2	101.01	181.001	44.06.1	0.002	40.004	46,04.2	10.102	40,001	0.002		0.002
21/02/2018 HMAS_TS01_P004_180221	Normal	Biota	Pteridium Esculentum-Bracken, Plant	40,000	10,001	10001	42,001	40,009	100.00	60.001	+0.001	10,7006	40.000	40,002	40 002	40.000	<0.005	10 002	40.001	40.00T	10,005	102.0>	+0.002	10.002	100,01	-10.001	VE.001	0.001	+0.005	VE.062	40,002		0.002		
21/02/2018 HMAS_TS01_P005_180221	Normal	Biota	Pteridium Esculentum- Bracken, Plant	46,002	10,501	(6.001	*CL\$63	<0.702	<0.001	+0.001	+10,0401	40,0004	40,502	+0.002	40.000	40,000	+10.0405	-(0.002	40,001	100,00	(0.000)	engo4	*10.002	-D180	100001	+31707	40.001	40,004	visites.		40.007		*10,1101		
21/02/2018 HMAS_TS01_P006_180221	Normal	Biota	Eustrephus Latifolius - Wombat berry, Plant	NILDOS:	400.001	40.001	10.00	VID.202	40,001	NU.DOI	40.001	40,0005	40,009	VE.002	40,000	40,002	40,006	40,002	140,000	19091	300,005	10,001	<0.002	40,662	90,001	+0.001	40,001	10,001	*0.005	40,500	40,002	10(0)	40,001	19.4	
23/02/2018 ST10_QC103_160223	Field_D	Biota	Eustrephus Latifolius - Wombat berry, Plant	40,700	10,001	<0.507	<0.002	40,002	100,601	<0.001	<0.001	*0.5005	<0.009	r0.002	40.002	40.002	10.005	<0.002	<0.601	10.001	40.505	<0.001	(0.00.2	10,502	40.001	10.001	100,001	40,001	10.055	46,062	×0.002		*0.001	10.0	
21/02/2018 HMAS_TS01_P007_180221	Normal	Biota	Eustrephus Latifolius - Wombat berry, Plant	40,602	10,001	198991	<03302	40,007	eutu)	<0.001	46,001	40.0006	<0.502	<0.00J	40 DJ2	×0.002	40,005	-vir.0.02	<9.691	10,001	41,005	20.601	<0.00.0	VU.01/2	<0.001	<0.001	VELDE/1	-10,001	40,005	40,012	×0.002	<0.001	90,001	12.6	10,000,5
21/02/2018 HMA5_TS01_P008_180221	Normal	Biota	Eustrephus Latifolius - Wombat berry, Plant	40,502	12,021	40.051	40,502	<0.002	100.001	<0.00t	+10.001	<0.0016		40.702	<0.002	<0.002	<0.005	<0.002	<0.091	40,001	10,005	40,001	<0.002	40,002	40,001	+40,001	40,001	40,004	140,0405	40.002	<0.202	40,001	40.001	8.6	40,0005
21/02/2018 HMAS_TS01_P009_180221	Normal	Biota	Eustrephus Latifolius - Wombat berry, Plant	611005	<0.001	<0.001	4/1/2/15	<0.105	40,001	400001	40.001	49,0014	401003	40.002	40.000	<0.002	<0.105	<0.000	<0.001	<0.001	<0.006	50,001	+U : U2	40,000	40,001	10.001	40.001	10,001	133.065	40,002	40,002	1000	<0.001	4.5	<0.0005
26/02/2018 HMAS_TS01_P010_180221	Normal	Biota	Eustrephus Latifolius - Wombat berry, Plant	40,002	40,003	<0.001	40,702	<0.002	K0,001	43,701	<0.001	40,0005	40.002	<0.002	420502	47.00	10,005	<0,002	<3.001	19,001	40,005	10,001	40.003	<0.000	90,001	*fr.0fr1	e0,005	10,001	40,008	coppe,	437,0435	40.001	<0.501	13,5	40,0006
22/02/2018 HMAS_TS01_P011_180222	Normal	Biota	Eustrephus Latifolius - Wombat berry, Plant	<0.102	49,001	100,00	40.007	40,002	40,001	<0.001	40.001	40,0005	<0.100	40.002	<0.002	<0.002	.401,005	40.002	<0.101	19,001	40,005	<0.001	10,002	9,002	40,001	40,004	41,001	40.(4)	40,006	40,002	<0.002	40.001	40,001	3.3	40,000/6
23/02/2018 HMAS_TS01_VL005_180223		Biota	Rabbit, Male	×0.002	10,001	40.001	<0.002	40,009	40 00 T	<0.001	+0.001	0.001	40,002	40,502	<0.002		59,005	<0.002	<9.001	<0.001	<0.055	0.002	<0.00%	0.004	100.01	<60,001	-40,000	0.007	-0.00E	<0.002	<0.002	<0.001	0.013		
23/02/2018 HMAS_TS01_VL006_180223		Biota	Rabbit, Male	wilded:	-10.001	00,001	with the	*10, 102	40,001	+1,004	+10.7401	0,002		410,7402	<0.000	45,002	+10,0406	40.002	49,091	<0.(40)	<0.000	40,004	<0.002	<0.802	40t001	+0.001	-40,001	0.014	+15.0435		40,062	<3.001	0,014		
23/02/2018 HMAS_TS01_VL007_180223		Biota	Rabbit, Male	<0.003	40.001	40,001	401003	<0.005	40,001	100 EP	<0.001	0.003		<0.002	40,000	40,000	<0.006	<0,000	40,001	<0.001	40,006	10,007	40.003	40,603	10,001	40.001	40,561	0.014	19.096	40,000	<0.002	10001	0.014		
23/02/2018 HMAS_TS01_VL008_180223		Biota	Rabbit, Male	<0.002	40,001	163,595	40,002	40,002	r0.001	40.001	40,001	0.001	40,709		K0.002	40,002		<0.502	<3.031	10.001	€0.505	<0.001	540.01	K0,002	<0.001	<0.001	40,001	0.017	<0.005	40,002	407.005	<0.001	0.017		
23/02/2018 HMAS_TS01_VM005_180223		Biota	Rabbit, Male	401105	44,001	40001	40,000	41,000	10000	<0.001	<0.001	40.008		40,002	K0.005			<0.002	<0.001	49,001	V0.005	<0.601	40,000	ATTORIS.		40,001	multi-	10,001	40,005	4000	<.07/05	10,001	41,001	12.5	
23/02/2018 DH07_QC101_180223	Normal	Biota	Rabbit, Male	50000	92,921	10.001	<0,002	430,009	<0.001	<0.00t	+10,7001	<0.7056		40,702	<0.002		10,005	<0.002	<0.091	×40001	10,005	40,601	<0.000	40,002	40,001	10.647	VD.001	10,00/1	49,548	-0.702	<0.002	44,041	~0.701	20.4	
23/02/2018 HMAS_TS01_VM006_180223		Biota	Rabbit, Male	40,002	93/(0)	<0.001	with a	40.102	40,001	40.001	40.001	<0,10(6		40 (802	40,000	4(1,0),0	10 (405	40.002	40,001	412 (12)	<0.00%	40,001	40.002	50%05	40,001	+31.001	40,001	46,007	411(4)6	<0.002	<0.002	41(1)1	<0,001	10.7	46,0005
23/02/2018 HMAS_TS01_VM007_180223 23/02/2018 HMAS_TS01_VM008_160223		Biota	Ratiol, Male	10,702	40,001	<0.007 (100.00)	40.00	40,002	10,001	43.001	130.35	40,0005			<0.002	<0.000		<0.007	100.00	10,001	<0,006	50,001	-40.005	40700	90,001	<0.001	40,001	90,001	40 (08		<0.002				
23/12/2010 [minka_1501_VM008_180223	recrimal	DICIS	Rabbit, Male	<2103	46,001	* ILLE TU	4QU(Q2)	40.00.	411/2017	<0.101	<0.001	40.00.0E	<0.002	*D.00.2	<0.0552	421105	49,005	40,002	<3.601	10,001	10,005	<0.001	49,000	HU202	<0.001	40,001	H0.067	40,001	10,000	46,002	<0.1145	49,001	40,001	34,7	100,000

							,											PF/	\s								45° 58								Inorganics	N/
ox.			PFOS/PFHAS (5um of Total) - Lab Calt	0.0000 By Perfucionation Melionamidoshand	Proposedana sufformandoaceana mg/kg 0.0002	mg/kg 0.0002	Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden Syden	50000 Sylida Sufferice acid	mbyd mayd merchonic scot merchonic scot	0.0003 M-Methyl More flow octave aufonamido aceto	DOOCS Parfluoroheans and (PFHuS)	Perfluorootane Sydinic acid (PFOS) - 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Fleid ID	Sample Type	Matrix Type																																		
2/2018 HMAS_TS01_Seli001_180221	Normal	soil	10/1005	40,0005	10,000	<0.00%	<0.0005	10,0005	-50,000 a	42,000.5	16,5002		37,0707	10,0005	10,0505	(5,000)	90,0008	<0.000G	40,000	<0.0002	<0.001	vibubly.	10,0002	- AD 0000 I	40,0002	40,00002	40,0002	40.0005	×3.0302	- NELDE/DE	10.0002	×0.0302	40.0002	40,0000	3.1	$\overline{}$
2018 HMAS_TS01_Sel002_160221	Normal	soil	0.0005	471,01,05	40,000	40,0002	*KLDUCK	<0.1904	40,000.02	40,0002	<0.000°		50,0002	40/409	<0.0065	40.0006	110,710015	0.00.6	<0.00002	<0.0000	40:001	40,0002	<0.00000	(0.1012	4550002	1000000	10.100.0	0.0005	<0.000C	40.000	40,00402	satute:	0.0005	0.0005	3.7	\rightarrow
/2018 JBRF_TS01_Sel001_180226	Normal	sol		10.102	<0.001	40,001	90.007	40,002	40,001	1475476	100.00	<0.00065	40.002	200,02	10,002	10,002	/0.00E	14/50/52	100.001	<0.001	40,005	40,003	<0.000	40,000	visition :	-diob1	100,005	sci Dui	35.006	- vol.652	1/4/0/20	10.001	rarnt			116

Moroney, Rebecca (Health)

From:

sw.gov.au>

Sent:

Monday, 4 June 2018 10:28 AM

To: Subject:

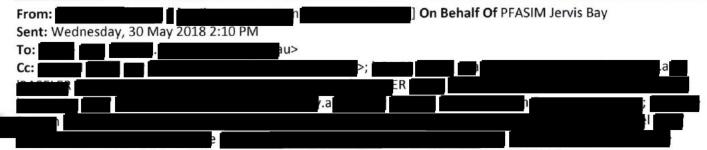
FW: JBTA - additional biota consumption information required

[SEC=UNCLASSIFIED]

Barr, Conrad (Health)

Attachments:

2126171 -Water Use Survey Findings report_DRAFT.PDF



Subject: RE: JBTA - additional biota consumption information required [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi e ,

For the Defence investigation, please find attached our findings from the water use survey (which also takes into account consumption from the territory where information was provided) we conducted with the community. It falls short of your questions below however.

This report was provided to the PCG and WBACC.

Regards,

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

Department of Defence | Estate & Infrastructure Group

E:

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From: u>

Sent: Tuesday, 29 May 2018 2:36 PM

Subject: JBTA - additional biota consumption information required



NSW EPA met with ACT gov this afternoon and were pointed in your direction. In order to mostly accurately calculate dietary advice for PFAS in JBTA, the NSW EPA requires additional information regarding the consumption of biota by the local Wreck Bay Aboriginal community – how much of their diet consists of sampled biota, what part of the organisms are consumed and where do they source these organisms from?

Main aquatic organisms captured in the current sampling regime 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)

Key questions:

- Fish what parts do they typically eat (the whole fish or just fish fillets)? how much do they typically consume per serve and what % of their diet is fish? where do they source these from (I am guessing for the most part these are caught from the bay)?
- Crustacea, bivalves, gastropods, echinoderms, polychaetes how much of their diet consists of these? where do they usually source these from (I am guessing shrimp, urchins, oysters and abalone are sourced
 from the bay)?
- Aquatic plants do they consume these? If so what is their intake quantity?

Terrestrial organisms captured in sampling regime include:

- A) Fox
- B) Rabbit
- Do they eat these mammals? If so, what portions and how much of their diet consists of these?

If you could please let me know if JBTA holds this sort of information that would be appreciated, or if you can point me in the direction of someone who does.

Regards,



Senior Operations Officer - NSW PFAS Strategy

Hazardous Incidents and Environmental Health, NSW Environment Protection Authority



u www.epa.nsw.gov.au ♥@EPA NSW

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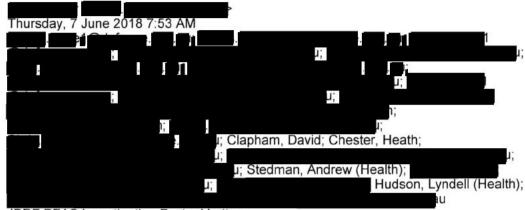
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Stedman, Andrew (Health)

From: Sent:

To:



Subject:

Attachments:

JBRF PFAS Investigation Factual Letters

2126171_LET_factual letter 16_June 2018.pdf

Follow Up Flag: Flag Status:

Follow up Completed

Dear PCG.

Attached for your information is Factual letter 16 Preliminary sampling results Aquatic ecology from the unnamed ponds.

To follow this email are Factual letters 14 and 15, of larger file size. Please contact me if you do not receive factual letters 14 and 15 and I will arrange file transfer.

Regards,



GHD

Level 2, 5/ Graham Street (PO Box 621) Nowra NSW 2541 Australia | http://www.ghd.com/ Water | Energy & Resources | Environment | Property & Buildings | Transportation

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