



04 June 2018

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

2126171_LET_factual letter 16

Dear ██████████

JBRF & HMAS Creswell- Environmental investigation: Preliminary sampling results Aquatic ecology from the unnamed ponds (processed by 31 May 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 31 May 2018, from freshwater aquatic sampling program from the unnamed ponds.

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

Table 1: Biota Results – Unnamed Ponds



Service Layer Credits: © Department of Finance, Services & Innovation 2017

Paper Size A3
 0 345 690 1,380 2,070
 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



- LEGEND**
- Investigation Area Extent
 - Jervis Bay Range Facility
 - HMAS Creswell
 - Water Bodies
 - Drainage Areas
 - Major Waterways
 - Minor Waterways / Drainage Lines
 - Estuarine Species Sampling Location
 - Freshwater Species Sampling Location
 - Terrestrial Species Sampling Location
 - Marine Species Sampling Area (Approximate)



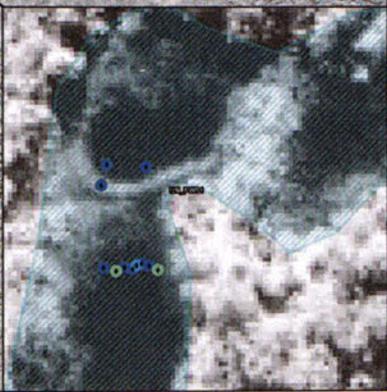
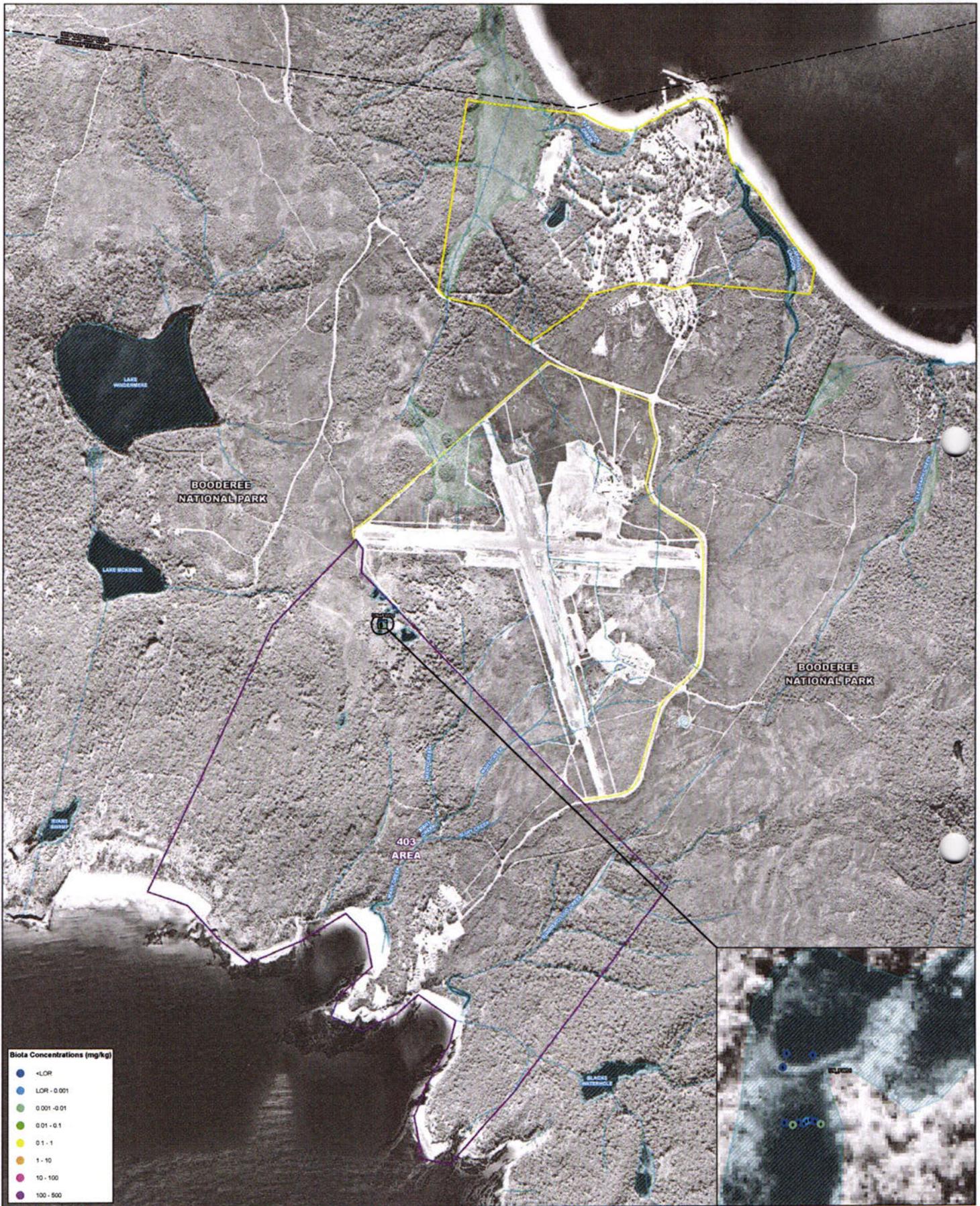
Department of Defence

Job Number	21-26171
Revision	A
Date	27 Apr 2018

Biota Sample Locations

Figure 1

G:\2106171\GIS\Map\Deliverables\21_26171_2020_Ecology\Marine.mxd
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Department of Defence
HMAS Creswell and Jervis Bay Range Facility
Concentrations of PFHxS + PFOS (Sum) -
Invertebrates

Job Number | 21-26171
Revision | A
Date | 01 Jun 2018

Figure 2A

G:\2106171\GIS\Maps\Deliverables\Concentration\21_26171_2026_Biota_FW_invertebrate_Concentrations.mxd
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Department of Defence
 HMAS Creswell and Jervis Bay Range Facility
**Concentrations of PFHxS + PFOS (Sum) -
 Plants**

Job Number | 21-26171
 Revision | A
 Date | 01 Jun 2018

Figure 2B

N:\AU\johney\Projects\2106171\GIS\Maps\Deliverables\Concentrations\21_26171_2022_Biota_FW_Plant_Concentrations.mxd
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 Data source: Imagery - Land and Property Information (2017), Streets, Waterways, Contours - NSW LPI 2015 DTDB, Contours - NSW LPI 2016. Created by:mveber
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Stedman, Andrew (Health)

From: [REDACTED] >
Sent: Thursday, 7 June 2018 7:56 AM
To: [REDACTED];
[REDACTED]; Clapham, David; Chester, Heath;
[REDACTED];
[REDACTED]; Stedman, Andrew (Health); [REDACTED];
[REDACTED]; Hudson, Lyndell (Health);
Subject: JBRF PFAS Investigation Factual Letter 14
Attachments: 2126171_LET_factual letter 14_ June 2018.pdf
Follow Up Flag: Follow up
Flag Status: Completed

Dear PCG,

Attached for your information is Factual letter 14 Preliminary sampling results Dry weather soil and water.

Regards,

[REDACTED]

GHD

Level 2, 57 Graham Street (PO Box 621) Nowra NSW 2541 Australia | <http://www.ghd.com/>
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05 June 2018

2126171_LET_factual letter 14

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

Dear [REDACTED]

JBRF & HMAS Creswell- Environmental investigation: Preliminary soil and water sampling results from dry weather offsite investigations (processed by 31 May 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 31 May 2018, primarily for the offsite sampling program.

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
- Eurofins | mgt, Unit F3, Building F, 16 Mars Road, Lane Cove West, NSW, 2066

4 Preliminary Results Tables

The preliminary results are provided in the attached figures and tables.

Some of the data used to generate the thematic colour coding for sample locations shown in Figure 1 and Figure 2 has been provided previously and has not been repeated in the tables attached to this letter for brevity.

The data is not for public distribution.

5 Closure

GHD trusts the above information is suitable for Defence requirements.

Yours Sincerely
GHD Pty Ltd



[REDACTED]
[REDACTED]
[REDACTED]

Enclosures:

Figure 1: Concentration plan for PFHxS and PFOS (sum) – Soil and Sediment

Figure 2: Concentration plan for PFHxS and PFOS (sum) – Surface Water and Groundwater

Table 1: Dry Weather Water Results - PFAS

Table 2: Dry Weather Water Results - Ions, Metals and Nutrients

Table 3: Dry Weather Water Results - BTEXN, TRH, Phenols, Phthalates, PAHs, MAH, Herbicides, Dioxins, Furans and Explosives

Table 4: Dry Weather Water Results - VOCs, Nitroaromatics, Nitroamines and SVOCs

Table 5: Dry Weather Water Results - OCP, OPP, Halogenated Hydrocarbons, Chlorinated Hydrocarbons

Table 6: Dry Weather Soil Results – PFAS

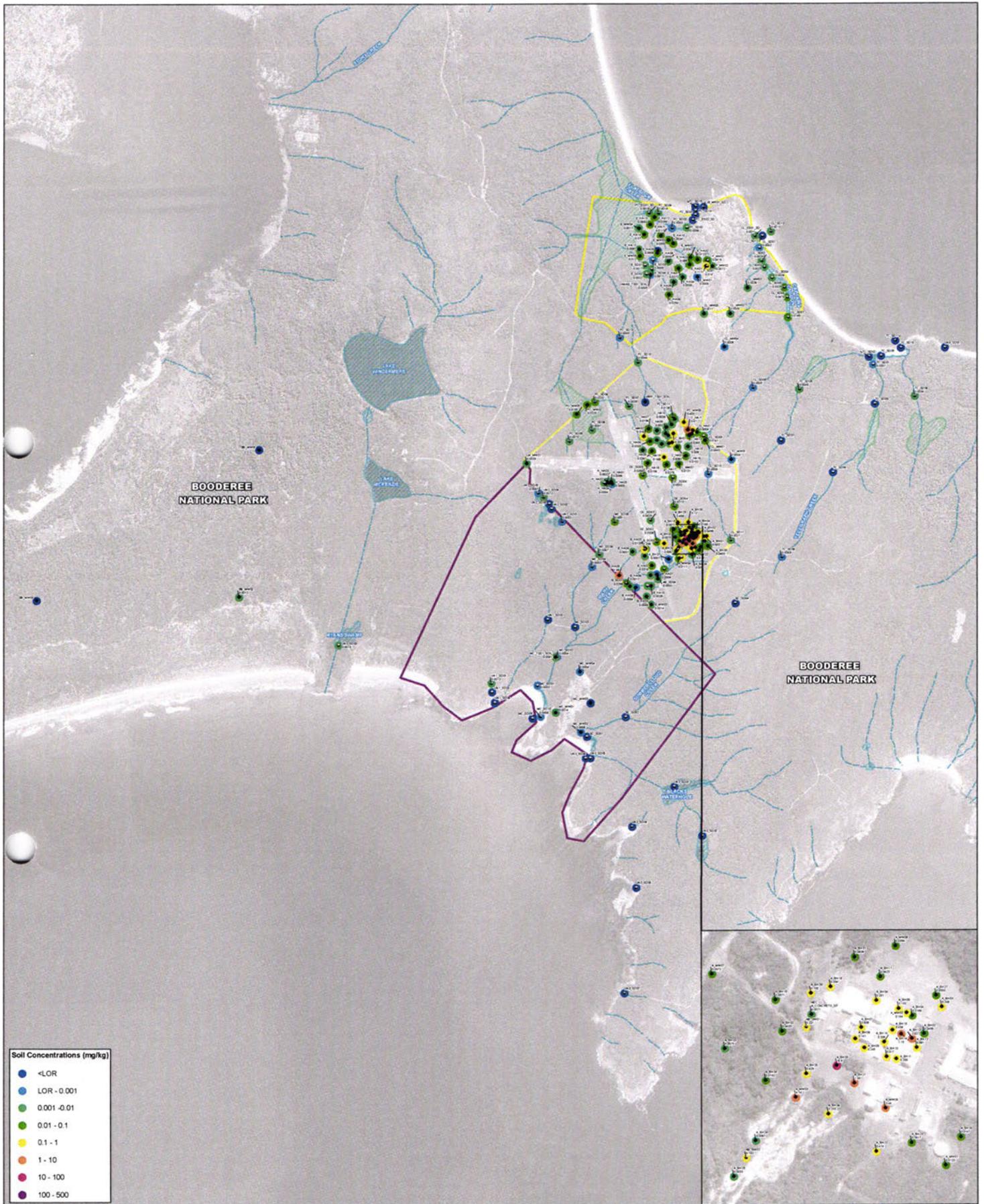
Table 7: Dry Weather Soil Results - Particle Size Analysis, Inorganics, Cations, TOC and Metals

Table 8: Dry Weather Soil Results - BTEXN, TRH, Phenols, Phthalates, PAHs, MAH, Herbicides, Dioxins, Furans

Table 9: Dry Weather Soil Results - VOCs, SVOCs

Table 10: Dry Weather Soil Results - OCP, OPP, Halogenated Hydrocarbons, Chlorinated Hydrocarbons, Explosives

Table 11: Dry Weather Soil Leachate Results – PFAS

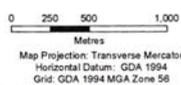


Soil Concentrations (mg/kg)

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

LEGEND

- HMAS Creswell / JBRF Boundary
- Water Bodies
- Drainage Areas
- Major Waterways
- Soil Sample
- Sediment Sample



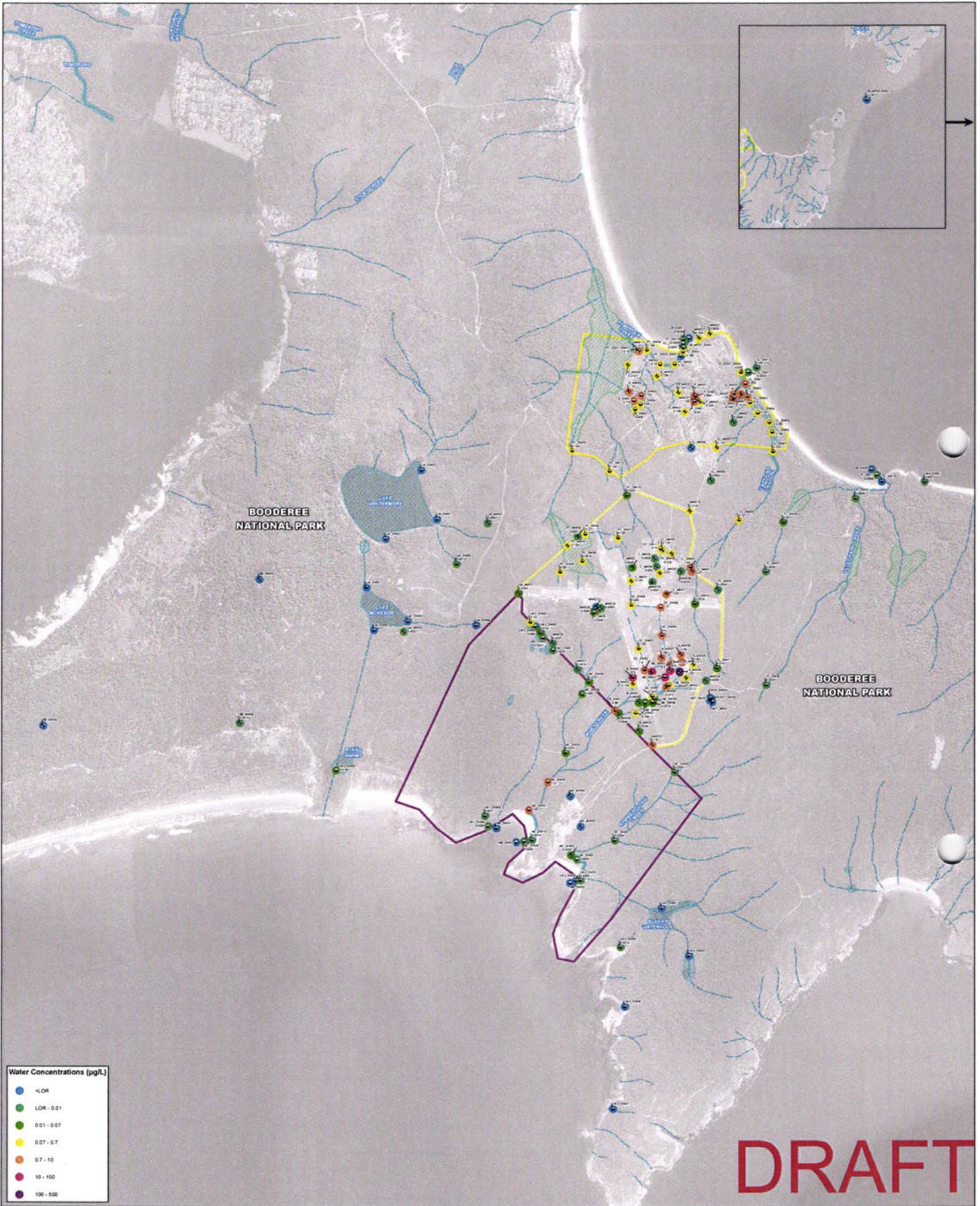
DRAFT

Department of Defence
 HMAS Creswell and Jervis Bay Range Facility
 Concentration plan for PFHxS and PFOS (sum)
 - Soil and Sediment

Job Number 21-26171
 Revision A
 Date 10 May 2018

Figure 1

G:\212617\FIGS\Maps\Deliverables\Concentrations\21_26171_2010_Concentrations_PFHxS_SoL_PORTRAIT.mxd
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DRAFT

LEGEND

- HMAS Creswell / JBRF Boundary
- Water Bodies
- Drainage Areas
- Major Waterways
- Groundwater Sample
- Surface Water Sample

0 250 500 1,000
Metres

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



Department of Defence
HMAS Creswell and Jervis Bay Range Facility
Concentration plan for PFHxS and PFOS (sum)
- Surface Water and Groundwater

Job Number 21-26171
Revision A
Date 05 Jun 2018

Figure 2

N:\AU\Sydney\Projects\2106171\GIS\Map\Deliverables\Concentrations\01_26171_2011_Concentrations_PFHxS_Water_Dry.mxd
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Location	Sample Date	Field ID	Location Code	Sample Comments	BTEXN										TRH - NEPM 2013										TRH - NEPM 1999										Phenols										Phthalates																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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Table 7: Dry Weather Soil Results - Particle Size Analysis, Inorganics, Cations, TOC and Metals

Monitoring Zone	Location Code	Field ID	Sample Comments	Sample Date	Particle Size Analysis													Inorganics				Exchangeable cations					TOC		Metals												
					% Clay (<2 µm)	% Silt (2-60 µm)	% Sand (60.0-2.00 mm)	% Gravel (>2mm)	% Cobbles (>6cm)	% >75µm	% >150µm	% >300µm	% >425µm	% >600µm	% >1180µm	% >2.36mm	% >4.75mm	% >9.5mm	% >15.0mm	% >37.5mm	% >75.0mm	Moisture (%)	pH (Lab)	Density	pH (Field)	Moisture Content (dried @ 105°C)	Exchangeable Calcium	Exchangeable Magnesium	Exchangeable Sodium	Exchangeable Potassium	EC	Exchangeable Sodium Percent	Total Organic Carbon	Inorganic Carbon	Calcium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc
LOR					1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.1	0.1	0.01	0.1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	200	5	1	2	5	5	0.1	2	5		
Summercloud Creek	SC_SD01	SC_SD01_0.0_180323		23/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.8	-	-	-	-	-	-	-	-	-	-	-	2000	<5	<1	<2	<5	<5	<0.1	<2	<5		
Summercloud Creek	SC_SD02	SC_SD02_0.0_180323		23/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.9	-	-	-	-	-	-	-	-	-	-	1800	<5	<1	<2	<5	<5	<0.1	<2	<5			
Summercloud Creek	SC_SD04	SC_SD04_0.0_180406		5/04/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39.2	-	-	-	-	-	-	-	-	-	23,400	<5	<1	3	<5	<5	<0.1	<2	<5				
Telegraph Creek	TC_SD01	TC_SD01_0.0_180321		21/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45.1	-	-	-	-	-	-	-	-	-	47,500	<5	<1	<3	<5	7	<0.1	<2	<5				
Telegraph Creek	TC_SD02	TC_SD02_0.0_180321		21/03/2018	2	5	87	6	<1	92	87	27	15	12	8	4	1	<1	<1	<1	<1	<1	38	4.8	2.33	-	0.8	2.8	12.2	0.3	16.1	75.6	67,500	<5	<1	2	<5	5	<0.1	<2	<5
Telegraph Creek	TC_SD03	TC_SD03_0.0_180320		20/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35.6	-	-	-	-	-	-	-	-	-	33,000	<5	<1	<2	<5	<5	<0.1	<2	<5				
Telegraph Creek	TC_SD04	TC_SD04_0.0_180321		21/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35.3	-	-	-	-	-	-	-	-	-	39,100	<5	<1	<2	<5	<5	<0.1	<2	<5				
Telegraph Creek	TC_SD05	TC_SD05_0.0_180320		20/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	-	-	-	-	-	-	-	-	-	228,000	<5	<1	8	9	18	<0.1	3	15				
Telegraph Creek	TC_SD06	TC_SD06_0.0_180320		20/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39.2	-	-	-	-	-	-	-	-	-	20,400	17	<1	21	15	10	<0.1	8	32				
Telegraph Creek	TC_SD07	TC_SD07_0.0_180321		20/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47.5	-	-	-	-	-	-	-	-	-	59,600	<5	<1	7	<5	12	<0.1	<2	<5				
Telegraph Creek	TC_SD08	TC_SD08_0.0_180320		20/03/2018	5	8	87	20	<1	87	84	66	58	50	32	14	<1	<1	<1	<1	<1	87.9	4.8	-	-	5.4	9.9	3.4	3	22.6	15.9	204,000	6	<1	8	9	13	<0.1	<2	10	
Telegraph Creek	TC_SD09	TC_SD09_0.0_180321		21/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.2	-	-	-	-	-	-	-	-	-	600	<5	<1	<2	<5	<5	<0.1	<2	<5				
Telegraph Creek	TC_SD10	TC_SD10_0.0_180326		26/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.5	-	-	-	-	-	-	-	-	-	300	<5	<1	<2	<5	<5	<0.1	<2	<5				
Telegraph Creek	TC_SD11	TC_SD11_0.0_180326		26/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17.9	-	-	-	-	-	-	-	-	-	400	<5	<1	<2	<5	<5	<0.1	<2	<5				
Unnamed Water Bodies	UN1_SD01	UN1_SD01_0.0_180327		27/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16.2	-	-	-	-	-	-	-	-	-	41,700	<5	<1	<2	<5	<5	<0.1	<2	<5				
Unnamed Water Bodies	UN1_SD02	UN1_SD02_0.0_180327		27/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15.9	-	-	-	-	-	-	-	-	-	11,100	<5	<1	<2	<5	<5	<0.1	<2	<5				
Unnamed Water Bodies	UN1_SD03	UN1_SD03_0.0_180327		27/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24.3	-	-	-	-	-	-	-	-	-	1600	<5	<1	4	<5	<5	<0.1	<2	<5				
Unnamed Water Bodies	UN1_SD04	UN1_SD04_0.0_180327		27/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26.3	-	-	-	-	-	-	-	-	-	1900	<5	<1	4	<5	<5	<0.1	<2	<5				
Unnamed Water Bodies	UN2_SD01	UN_QC104_180322	UN2_SD01_0.0_180322	22/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44.4	-	-	-	-	-	-	-	-	-	39,500	<5	<1	9	108	8	<0.1	7	15				
Unnamed Water Bodies	UN2_SD02	UN_QC104_180322	UN2_SD02_0.0_180322	22/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79.1	-	-	-	-	-	-	-	-	-	-	<5	<1	8	101	7	<0.1	6	14				
Unnamed Water Bodies	UN2_SD02	UN2_QC204_180322	UN2_SD02_0.0_180322	22/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14.4-33	-	-	-	-	-	-	-	-	-	-	<5	<1	13	42	13	<0.1	4	<5				
Unnamed Water Bodies	UN2_SD03	UN2_QC304_180322	UN2_SD03_0.0_180322	22/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.2-38	-	-	-	-	-	-	-	-	-	-	<5	<1	11	62	11	<0.1	3	<5				
Unnamed Water Bodies	UN2_SD04	UN2_QC404_180322	UN2_SD04_0.0_180322	22/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.5-30	-	-	-	-	-	-	-	-	-	-	<5	<1	10	75	12	<0.1	3	<5				
Unnamed Water Bodies	UN2_SD05	UN2_QC504_180322	UN2_SD05_0.0_180322	22/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.4-45	-	-	-	-	-	-	-	-	-	-	<5	<1	10	11	20	<0.1	2	9				
Unnamed Water Bodies	UN3_SD01	UN3_QC101_180405		5/04/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27.2	-	-	-	-	-	-	-	-	-	6000	<5	<1	<2	<5	<5	<0.1	<2	<5				
Unnamed Water Bodies	UN3_SD02	UN3_QC201_180403		3/04/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33.5	-	-	-	-	-	-	-	-	-	52,500	<5	<1	<2	<5	<5	<0.1	<2	<5				
Unnamed Water Bodies	UN3_SD03	UN3_QC301_180319		19/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71	-	-	-	-	-	-	-	-	-	178,000	<5	<1	5	5	13	<0.1	4	5				
Unnamed Water Bodies	UN3_SD04	UN3_QC401_180407		5/04/2018	1	<1	98	1	<1	99	91	5	2	1	1	<1	<1	<1	<1	<1	18.8	9.2	2.71	-	0.6	<0.2	<0.2	<0.2	0.6	<0.2	400	<5	<1	<2	<5	<5	<0.1	<2	<5		
Unnamed Water Bodies	UN3_SD05	UN3_QC501_180328		28/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19.5	-	-	-	-	-	-	-	-	-	-	<5	<1	<2	<5	<5	<0.1	<2	<5				
Unnamed Water Bodies	UN3_SD06	UN3_QC601_180328	UN3_SD05_0.0_180328	28/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	-	-	-	-	600	<5	<1	<2	<5	<5	<0.1	<2	<5				
Unnamed Water Bodies	UN3_SD07	UN3_QC701_180403		3/04/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-	-	-	-	-	-	1000	<5	<1	<2	<5	<5	<0.1	<2	<5				
Unnamed Water Bodies	UN3_SD08	UN3_QC801_180403		3/04/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23.1	-	-	-	-	-	-	-	-	-	800	<5	<1	2	<5	<5	<0.1	<2	<5				
Unnamed Water Bodies	UN4_SD01	UN4_QC101_180326		26/03/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.8	-	-	-	-	-	-	-	-	-	300	<5	<1	<2	<5	<5	<0.1	<2	<5				

Notes:
µg/L = micrograms per litre
mg/L = milligrams per litre
LOR = Limit of Reporting
- = Not analysed

Stedman, Andrew (Health)

From: [REDACTED]
Sent: Thursday, 7 June 2018 7:57 AM
To: [REDACTED];
[REDACTED]; Clapham, David; Chester, Heath;
[REDACTED];
[REDACTED]; Stedman, Andrew (Health); [REDACTED];
[REDACTED]; Hudson, Lyndell (Health);
[REDACTED] au
Subject: JBRF PFAS Investigation Factual Letter 15
Attachments: 2126171_LET_factual letter 15_ June 2018.pdf

Dear PCG,

Attached for your information is Factual letter 15 Preliminary sampling results Wetweather soil and water.

Regards,

[REDACTED]

GHD

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

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05 June 2018

2126171_LET_factual letter 15

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

Dear ██████████

JBRF & HMAS Creswell- Environmental investigation: Preliminary soil and water sampling results from wet weather offsite investigations (processed by 31 May 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 31 May 2018, primarily for the offsite sampling program.

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
- Eurofins | mgt, Unit F3, Building F, 16 Mars Road, Lane Cove West, NSW, 2066

4 Preliminary Results Tables

The preliminary results are provided in the attached figures and 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: Concentration plan for PFHxS and PFOS (sum) – Soil and Sediment (Wet Weather Sampling)

Figure 2: Concentration plan for PFHxS and PFOS (sum) – Surface Water and Groundwater (Wet Weather Sampling)

Table 1: Wet Weather Water Results – PFAS

Table 2: Wet Weather Water Results – Ions, Metals and Nutrients

Table 3: Dry Weather Water Results – BTEXN, TRH, Phenols, Phthalates, PAHs, MAH, Herbicides, Dioxins, Furans and Explosives

Table 4: Wet Weather Water Results – VOCs, Nitroaromatics, Nitroamines and SVOCs

Table 5: Dry Weather Water Results – OCP, OPP, Halogenated Hydrocarbons, Chlorinated Hydrocarbons

Table 6: Wet Weather Soil Results – PFAS

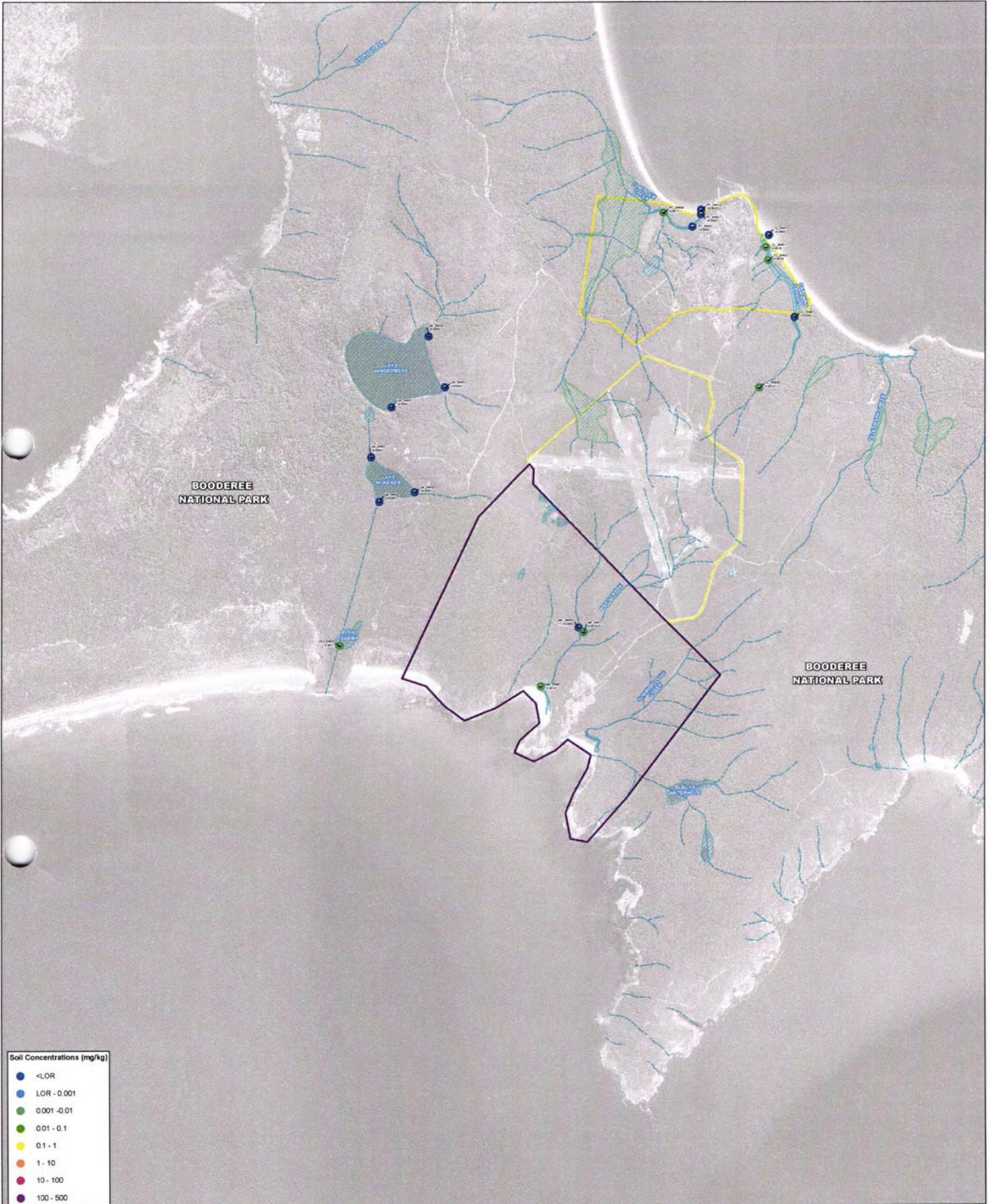
Table 2: Wet Weather Soil Results – Inorganics, TOC and Metals

Table 8: Wet Weather Soil Results – BTEXN, TRH, Phenols, Phthalates, PAHs, MAH, Herbicides, Dioxins, Furans, Explosives

Table 9: Wet Weather Soil Results – VOCs, SVOCs

Table 10: Wet Weather Soil Results –OCP, OPP, Halogenated Hydrocarbons, Chlorinated Hydrocarbons

Table 11: Wet Weather Pore Water Results – PFAS

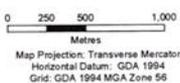


Soil Concentrations (mg/kg)

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

LEGEND

—	HMAS Creswell / JBRF Boundary	—	Major Waterways
—	403 Area	●	Sediment Sample
—	Water Bodies		
—	Drainage Areas		



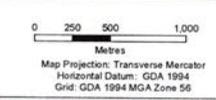
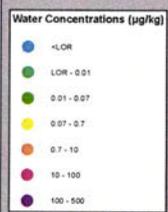
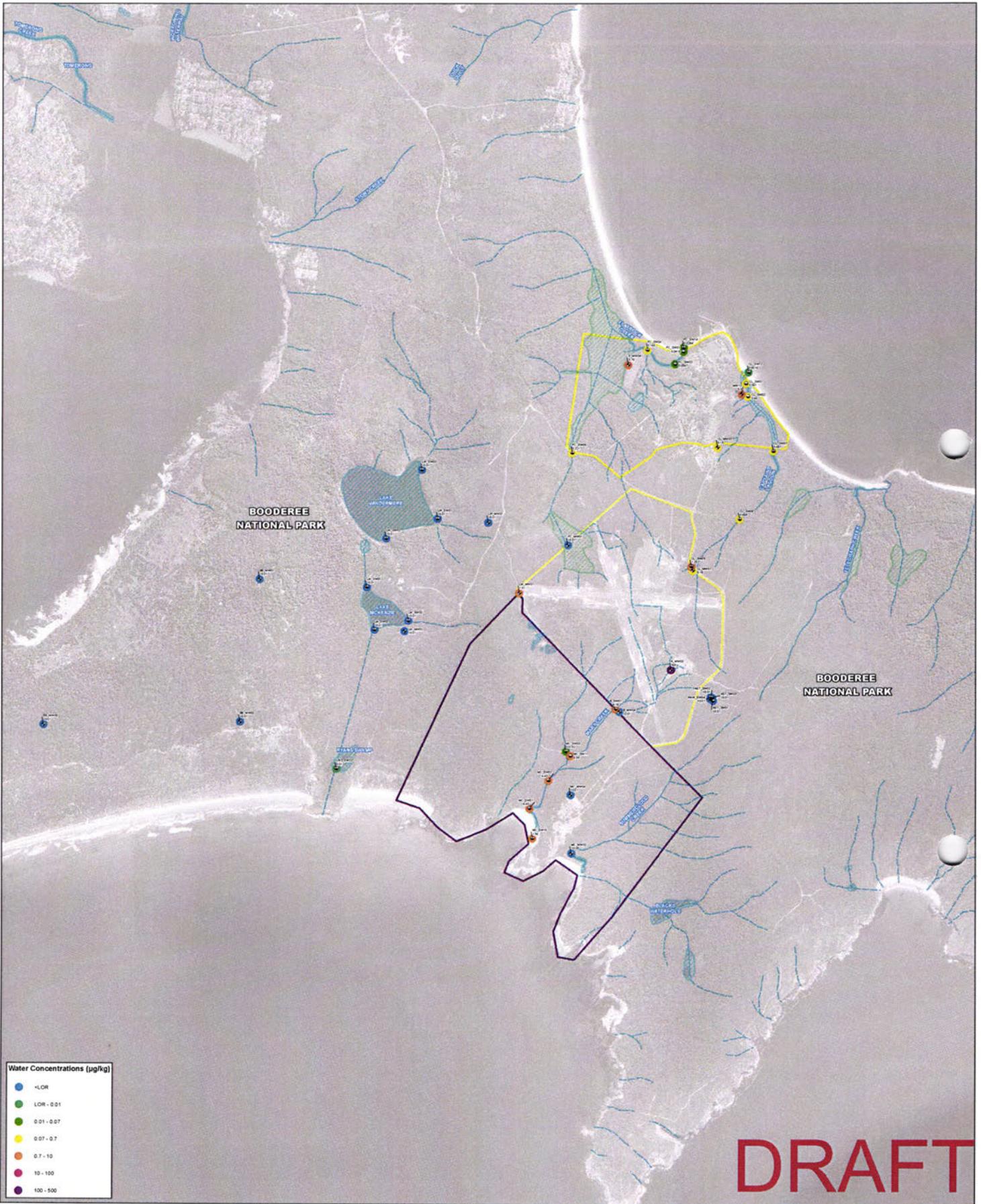
DRAFT

Department of Defence
HMAS Creswell and Jervis Bay Range Facility
Concentrations of PFHxS and PFOS (sum)
- Soil and Sediment (Wet Weather Sampling)

Job Number | 21-26171
Revision | A
Date | 04 Jun 2018

Figure A

N:\AU\Sydney\Projects\2126171\GIS\Maps\Deliverables\Concentrations\21_26171_2018_Concentrations_PFHxS_Soil_Wet.mxd
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Data source: Imagery - Land and Property Information (2017). Streets, Waterways, Contours - NSW LPI 2015 DTDB. Contours - NSW LPI 2016. Created by mwelber
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



Department of Defence
HMAS Creswell and Jervis Bay Range Facility

Job Number: 21-26171
Revision: A
Date: 04 Jun 2018

Concentrations of PFHxS and PFOS (sum) - Surface Water and Groundwater (Wet Weather Sampling)

Figure B

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Data source: Imagery - Land and Property Information (2017). Streets, Waterways, Contours - NSW LPI 2015 DTDB, Contours - NSW LPI 2016. Created by mwbebr

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

Table 3
Dry Weather Water Results - BTEXn, TRH, Phenols, Phthalates, PAHs, MAH, Herbicides, Dioxins, Furans and Explosives

LOR	Phenols															MAH					Herbicides	Dioxins & Furans		Explosives							
	3/4-Methylphenol (m/p-cresol)	2,3,4,6-Tetrachlorophenol	2,3,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,4-Dinitrophenol	2,6-Dichlorophenol	2-Chlorophenol	2-Methylnaphthalene	2-Methylphenol	2-Nitrophenol	3-methylcyclohexene	4-chloro-3-methylphenol	4-nitrophenol	Acetophenone	Pentachlorophenol	Phenol	1,2,4-trimethylbenzene	1,2,5-trimethylbenzene		Isopropylbenzene	Styrene	Total MAH	Promethide	Dibenzofuran	Dibenzofuran	1,3,5-Trinitrobenzene	2,4-Dinitrotoluene	2,6-Dinitrotoluene	Nitrobenzene
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
4	10	2	2	2	2	30	2	2	2	2	2	2	2	30	2	4	2	5	5	5	5	3	2	2	2	2	4	4	4	2	
Monitoring Zone	Location Code	Field ID	Sample Comments	Sample Date	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
AEC A	A_MW03	A_MW03_180502		2/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
AEC B	B_MW04	B_MW04_180502		2/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
AEC B	B_SW01	B_SW01_180501		1/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
AEC E	E_MW04	E_MW04_180503		3/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Bherwerre Barrier	BB_MW01	BB_MW01_180515		15/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Bherwerre Barrier	BB_MW02	BB_MW02_180516		16/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Bherwerre Barrier	BB_MW02	BB_QC116_180516	BB_MW02_180516	16/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Bherwerre Barrier	BB_MW02	BB_QC217_180516	BB_MW02_180516	16/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Bherwerre Barrier	BB_MW03	BB_MW03_180516		16/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Captains Lagoon	CL_MW01	CL_MW01_180503		3/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Captains Lagoon	CL_MW01	CL_QC114_180503	CL_MW01_180503	3/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Captains Lagoon	CL_MW02	CL_MW02_180502		2/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Captains Lagoon	CL_SW01	CL_SW01_180501		1/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Captains Lagoon	CL_SW02	CL_SW02_180501		1/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Captains Lagoon	CL_SW07	CL_SW07_180501		1/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Captains Lagoon	CL_SW07	CL_QC221_180501	CL_SW07_180501	1/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Captains Lagoon	CL_SW08	CL_SW08_180501		1/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Captains Lagoon	CL_SW09	CL_SW09_180430		30/04/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Captains Lagoon	CL_SW12	CL_SW12_180515		15/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Flatrock Creek	FC_MW01	FC_MW01_180503		3/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Flatrock Creek	FC_SW01	FC_SW01_180515		15/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Flatrock Creek	FC_SW01	FC_QC216_180515	FC_SW01_180515	15/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Flatrock Creek	FC_SW02	FC_SW02_180515		15/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Flatrock Creek	FC_SW04	FC_SW04_180515		15/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Flatrock Creek	FC_SW05	FC_SW05_180430		30/04/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Flatrock Creek	FC_SW05	FC_QC113_180430	FC_SW05_180430	30/04/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Flatrock Creek	FC_SW14	FC_SW14_180515		15/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
HMAS Creswell	MW12	0020 MW012_180503		3/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Lake McKenzie	LM_MW01	LM_MW01_180503		3/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Lake McKenzie	LM_MW02	LM_MW02_180503		3/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Lake McKenzie	LM_SW01	LM_SW01_180514		14/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Lake McKenzie	LM_SW02	LM_SW02_180516		16/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Lake McKenzie	LM_SW03	LM_SW03_180514		14/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Lake Windermere	LW_MW01	LW_MW01_180515		15/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Lake Windermere	LW_SW01	LW_SW01_180514		14/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Lake Windermere	LW_SW02	LW_SW02_180516		16/05/2018	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	<L	
Lake Windermere	LW_SW02	LW_Q																													



Table 7
Wet Weather Soil Results - Inorganics, TOC and Metals

Monitoring Zone	Location Code	Field ID	Sample Comments	Sample Date	Inorganics		TOC	Metals								
					Moisture Content (dried at 105°C)	Moisture Content (dried @ 103°C)		Total Organic Carbon	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc
					%	%		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR					0.1	1	200	5	1	2	5	5	0.1	2	5	
Captains Lagoon	CL_SD01	CL_SD01_0.0_180501		1/05/2018	19.8	-	300	<5	<1	<2	<5	<5	<0.1	<2	<5	
Captains Lagoon	CL_SD02	CL_SD02_0.0_180501		1/05/2018	24.1	-	2100	<5	<1	<2	<5	<5	<0.1	<2	<5	
Captains Lagoon	CL_SD07	CL_SD07_0.0_180501		1/05/2018	32.9	-	7500	<5	<1	<2	<5	<5	<0.1	<2	<5	
Captains Lagoon	CL_SD07	CL_QC220_180501	CL_SD07_0.0_180501	1/05/2018	-	20	-	<2	<0.4	<5	<5	<5	<0.1	<5	<5	
Captains Lagoon	CL_SD08	CL_SD08_0.0_180501		1/05/2018	32	-	11,000	<5	<1	<2	<5	<5	<0.1	<2	<5	
Captains Lagoon	CL_SD12	CL_SD12_0.0_180515		15/05/2018	21	-	200	<5	<1	<2	<5	<5	<0.1	<2	<5	
Flatrock Creek	FC_SD01	FC_SD01_0.0_180515		15/05/2018	24.1	-	<200	<5	<1	<2	<5	<5	<0.1	<2	<5	
Flatrock Creek	FC_SD01	FC_QC215_180515	FC_SD01_0.0_180515	15/05/2018	-	19	<1000	<2	<0.4	<5	<5	<5	<0.1	<5	<5	
Flatrock Creek	FC_SD01	FC_SD01_0.2_180515		15/05/2018	28.4	-	-	-	-	-	-	-	-	-	-	
Flatrock Creek	FC_SD02	FC_SD02_0.0_180515		15/05/2018	20.7	-	500	<5	<1	<2	<5	<5	<0.1	<2	<5	
Flatrock Creek	FC_SD04	FC_SD04_0.0_180515		15/05/2018	37.2	-	10,100	<5	<1	2	<5	<5	<0.1	<2	5	
Flatrock Creek	FC_SD14	FC_SD14_0.0_180515		15/05/2018	25	-	<200	<5	<1	<2	<5	<5	<0.1	<2	<5	
Lake McKenzie	LM_SD01	LM_SD01_0.0_180514		14/05/2018	23.1	-	3000	<5	<1	<2	<5	<5	<0.1	<2	<5	
Lake McKenzie	LM_SD02	LM_SD02_0.0_180516		16/05/2018	22.2	-	500	<5	<1	<2	<5	<5	<0.1	<2	<5	
Lake McKenzie	LM_SD03	LM_SD03_0.0_180514		14/05/2018	24.6	-	1100	<5	<1	<2	<5	<5	<0.1	<2	<5	
Lake Windermere	LW_SD01	LW_SD01_0.0_180514		14/05/2018	25.4	-	4100	<5	<1	<2	<5	<5	<0.1	<2	<5	
Lake Windermere	LW_SD02	LW_SD02_0.0_180516		16/05/2018	19.2	-	2900	<5	<1	3	<5	<5	<0.1	<2	<5	
Lake Windermere	LW_SD02	LW_QC118_180516	LW_SD02_0.0_180516	16/05/2018	18.3	-	1000	<5	<1	<2	<5	<5	<0.1	<2	<5	
Lake Windermere	LW_SD03	LW_SD03_0.0_180514		14/05/2018	44.5	-	41,000	<5	<1	<2	<5	<5	<0.1	<2	<5	
Mary Creek	MC_SD01	MC_SD01_0.0_180501		1/05/2018	25.3	-	300	<5	<1	<2	<5	<5	<0.1	<2	<5	
Mary Creek	MC_SD03	MC_SD03_0.0_180501		5/05/2018	32.9	-	700	<5	<1	<2	<5	<5	<0.1	<2	<5	
Unnamed Water Bodies	UN3_SD03	UN3_SD03_0.0_180517		17/05/2018	88.1	-	246,000	<5	<1	8	6	7	<0.1	3	38	

Notes:
mg/kg = milligrams per kilogram
LOR = Limit of Reporting
- = not analysed

Table 6
Wet Weather Soil Results - BTEXN, TRH, Phenols, Phthalates, PAHs, MAH, Herbicides, Dioxins, Furans, Explosives

				PAHs																	Herbicides	Dioxins & Furans		Explosives									
				Pyrene	Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Benzo[e]pyrene	Benzo[a]perylene	Chrysene	Fluorene	Fluoranthene	Indeno[1,2,3-cd]perylene	Phenanthrene	Phenanthrene-PAH	Peranthrene	PAH (Sum of total) - Lab Calc	Total 8 PAH (as BAP TEQ)(zero LOR) - Lab Calc	Total 8 PAH (as BAP TEQ)(half LOR) - Lab Calc	Total 8 PAH (as BAP TEQ)(full LOR) - Lab Calc	Propionamide	Alibenzofuran	2,3,7,8-Tetrachlorodibenzo-p-dioxin	2,3,7,8-Tetrachlorodibenzofuran	2,4-Dinitrotoluene	2,6-Dinitrotoluene	4-Nitrotoluene	4-Toluenesulfonamide	
LOR				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	
Monitoring Zone	Location Code	Field ID	Sample Comments	Sample Date	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Captains Lagoon	CL SD01	CL SD01 0.0 180501		1/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Captains Lagoon	CL SD02	CL SD02 0.0 180501		1/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Captains Lagoon	CL SD07	CL SD07 0.0 180501		1/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Captains Lagoon	CL SD07	CL QC220 180501	CL SD07 0.0 180501	1/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Captains Lagoon	CL SD08	CL SD08 0.0 180501		1/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Captains Lagoon	CL SD12	CL SD12 0.0 180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Flatrock Creek	FC SD01	FC SD01 0.0 180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Flatrock Creek	FC SD01	FC QC215 180515	FC SD01 0.0 180515	15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Flatrock Creek	FC SD02	FC SD02 0.0 180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Flatrock Creek	FC SD04	FC SD04 0.0 180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Flatrock Creek	FC SD14	FC SD14 0.0 180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lake McKenzie	LM SD01	LM SD01 0.0 180514		14/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lake McKenzie	LM SD02	LM SD02 0.0 180516		16/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lake McKenzie	LM SD03	LM SD03 0.0 180514		14/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lake Windermere	LW SD01	LW SD01 0.0 180514		14/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lake Windermere	LW SD02	LW SD02 0.0 180516		16/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lake Windermere	LW SD02	LW QC118 180516	LW SD02 0.0 180516	16/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lake Windermere	LW SD03	LW SD03 0.0 180514		14/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Mary Creek	MC SD01	MC SD01 0.0 180501		1/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Mary Creek	MC SD03	MC SD03 0.0 180501		5/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Unnamed Water Bodies	UN3 SD03	UN3 SD03 0.0 180517		17/05/2018	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2

Notes:
mg/kg = milligrams per kilogram
LOR = Limit of Reporting
- = not analysed



Table 10
Wet Weather Soil Results - OCP, OPP, Halogenated Hydrocarbons, Chlorinated Hydrocarbons

Monitoring Zone	Location Code	Field ID	Sample Comments	Sample Date	OC Pesticides															OP Pesticides										Halogenated Hydrocarbons				
					γ-HCH	β-HCH	α-HCH	γ-DDE	γ-DDD	γ-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	γ-HCH (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Phosphor-ethyl	Permethrin	Bromomethane	Dichlorodifluoromethane		
					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	
LOR					0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	5			
Captains Lagoon	CL SD12	CL SD12 0.0 180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
Flatrock Creek	FC SD01	FC SD01 0.0 180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
Flatrock Creek	FC SD02	FC SD02 0.0 180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
Flatrock Creek	FC SD04	FC SD04 0.0 180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
Flatrock Creek	FC SD14	FC SD14 0.0 180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
Lake McKenzie	LM SD01	LM SD01 0.0 180514		14/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
Lake McKenzie	LM SD02	LM SD02 0.0 180516		16/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Lake McKenzie	LM SD03	LM SD03 0.0 180514		14/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Lake Windermere	LW SD01	LW SD01 0.0 180514		14/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Lake Windermere	LW SD02	LW SD02 0.0 180516		16/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Lake Windermere	LW SD03	LW SD03 0.0 180514	LW SD02 0.0 180516	16/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Lake Windermere	LW SD03	LW SD03 0.0 180514		16/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Mary Creek	MC SD01	MC SD01 0.0 180501		1/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Mary Creek	MC SD03	MC SD03 0.0 180501		5/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Unnamed Water Bodies	UN3 SD03	UN3 SD03 0.0 180517		17/05/2018	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	

Notes:
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Table 10
Wet Weather Soil Results - OCP, OPP, Halogenated Hydrocarbons, Chlorinated Hydrocarbons

					Chlorinated Hydrocarbons																									
Monitoring Zone	Location Code	Field ID	Sample Comments	Sample Date	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloropropane	1,2,4-trichlorobenzene	1,2-dibromo-3-chloropropane	1,2-dichlorobenzene	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	1,4-dichlorobenzene	2,2-dichloropropane	1-chloronaphthalene	2-chlorotoluene	1-chlorotoluene	Bromobenzene	Carbon tetrachloride	Chlorobenzene	Chloroform	Chloromethane	1,1,2-dichloroethane	Hexachlorobutadiene	Vinyl chloride	
LOR					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Captains Lagoon	CL_SD12	CL_SD12_0.0_180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Flatrock Creek	FC_SD01	FC_SD01_0.0_180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Flatrock Creek	FC_SD02	FC_SD02_0.0_180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Flatrock Creek	FC_SD04	FC_SD04_0.0_180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Flatrock Creek	FC_SD14	FC_SD14_0.0_180515		15/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lake McKenzie	LM_SD01	LM_SD01_0.0_180514		14/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lake McKenzie	LM_SD02	LM_SD02_0.0_180516		16/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lake McKenzie	LM_SD03	LM_SD03_0.0_180514		14/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lake Windermere	LW_SD01	LW_SD01_0.0_180514		14/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lake Windermere	LW_SD02	LW_SD02_0.0_180516		16/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lake Windermere	LW_SD02	LW_QC118_180516	LW_SD02_0.0_180516	16/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lake Windermere	LW_SD03	LW_SD03_0.0_180514		14/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Mary Creek	MC_SD01	MC_SD01_0.0_180501		1/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Mary Creek	MC_SD03	MC_SD03_0.0_180501		5/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Unnamed Water Bodies	UN3_SD03	UN3_SD03_0.0_180517		17/05/2018	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes:
mg/kg = milligrams per kilogram
LOR = Limit of Reporting
-> not analysed

White, Sarah-Jane (Health)

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

Hi Lyndell,

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

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

Kind Regards,

[REDACTED]
 Wreck Bay Aboriginal Community Council

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

Hi Team,

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

Can either of you please respond.

Kind regards,

[REDACTED]
 [REDACTED]



Wreck Bay Aboriginal Community Council
 [REDACTED]
 [REDACTED].a

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

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

Sent: Tuesday, 5 June 2018 1:27 PM

To: [REDACTED] <[REDACTED]@[REDACTED]>

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

Hello [REDACTED]

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

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

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

The main aquatic organisms within the sample include:

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

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

Fish

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

Crustacea, bivalves, gastropods, echinoderms, polychaetes

- What percentage of the diets consists of these species?
- Where are these species usually caught?
- Are shrimp, urchins, oysters and abalone sourced from the bay?

Aquatic Plants

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

Terrestrial organisms captured in the sampling include Fox and Rabbit

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

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

Please email or call if you have any questions.

Regards,



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

This email, and any attachments, may be confidential and also privileged. If you are not the intended recipient, please notify the sender and delete all copies of this transmission along with any attachments immediately. You should not copy or use it for any purpose, nor disclose its contents to any other person.

Stedman, Andrew (Health)

From: [REDACTED] <[REDACTED]>
Sent: Wednesday, 13 June 2018 4:44 PM
To: [REDACTED]; [REDACTED]; Clapham, David; Chester, Heath; [REDACTED]; Stedman, Andrew (Health); [REDACTED]; Hudson, Lyndell (Health); [REDACTED]
Subject: JBRF PFAS Investigation PCG meeting 14 Minutes
Attachments: JBRF-PGC Meeting Minutes 14 - May 2018.pdf; JBRF PCG_MEETING 15_AGENDA.pdf

Dear PCG,

Please see attached meeting minutes from PCG meeting 14 May 2018 and agenda for JBRF PCG meeting 15, next Tuesday 19 June 2018, with details below.

Join WebEx meeting

Meeting number: [REDACTED]

Join by phone

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

Call-in number: +[REDACTED] (Australia)

Show global numbers

Participant Pin Code: [REDACTED]

Regards,

[REDACTED]

GHD

[REDACTED]

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

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Australian Government
Department of Defence
Estate and Infrastructure Group

PFAS Environmental Investigation – Jervis Bay Range Facility
PROJECT CONTROL GROUP MEETING #14

Administrative Details	
Date	Tuesday 15 May 2018
Time	14:00 – 14:50 hrs
Venue	Teleconference
Dial-in Details	Toll ----- [REDACTED] Toll-free ----- 6 [REDACTED] Participant PIN: [REDACTED]
Chair	[REDACTED], Defence Project Manager
Minutes	Taken by [REDACTED]

ATTENDEES	
Defence	
[REDACTED]	Project Manager PFAS Branch
[REDACTED]	Project Manager PFAS Branch
[REDACTED]	Executive Officer HMAS Creswell
Lead Contractor (LC), GHD	
[REDACTED]	Service Line Leader – LC Project Director
[REDACTED]	Principal Environmental Consultant
[REDACTED]	Principal – Stakeholder Engagement
[REDACTED]	Stakeholder Engagement
[REDACTED]	Project Manager
Site Auditor (SA), AECOM	
[REDACTED] ([REDACTED])	Environment Defence appointed peer review
[REDACTED]	
Agencies	
Sashini Salgado (SS)	Act Government
[REDACTED]	NSW Health
[REDACTED]	NSW Health
[REDACTED]	NSW EPA
[REDACTED] ([REDACTED])	Senior Environmental Officer NSW EPA PFAS unit
[REDACTED] ([REDACTED])	Operations Manager JBTA
[REDACTED]	Dept of Infrastructure and Regional Development
[REDACTED]	ACT Construction, Environment and Workplace

Welcome and Conduct of PCG Meetings

Defence PFAS - Welcomed attendees to the JBRF PFAS Investigation meeting.

Investigation Progress Detailed Site Investigation

1. (GHD) provided an overview of investigation progress.
 - Site investigation is largely completed as detailed in the SAQP both on and off-site, with GHD currently in the process of finalising the investigation sampling loose ends, including wet weather sampling. Wet weather events in the area have been limited therefore GHD are focusing sampling to achieve good spatial coverage, with 30-40% of water sample locations covered so far over two rain events.
 - Additional lab analysis has been scheduled, based on the outcomes of primary samples that have been received to date.
 - Emphasis on the large amount of results data that has not been received from the laboratories at this time, with a complete data set expected to be received mid-June. GHD are working with a limited data set approximately 50% therefore no absolute determinations can be made at this point until all data is received and verified.
2. (GHD) provided an overview of investigation results received so far.
 - Southern Tributaries
 - Mary Creek
 - Sediment - some low level PFAS detections
 - Surface water – elevated PFAS levels between 0.7 - 10 µg/l
 - Biota - elevated levels in PFAS in most terrestrial and aquatic species.
 - Summercloud Creek
 - no PFAS detects in sediment
 - Surface water – low levels between 0.01 – 0.07 µg/l
 - Biota – some fish with minor PFAS levels detected
 - Assume a hydraulic connection exists between JBRF source areas and Summercloud.
 - Blacks Waterhole minor detects in surface water up to 0.07 µg/l, no biota sampling results.
 - Ryans Swamp – minor detections in surface water.
 - Berrewerri Barrier to the west, minor detections in ground water.
 - Northern Tributaries
 - Captains Lagoon
 - Surface water – elevated PFAS levels up to 0.7 µg/l
 - Biota - elevated levels in PFAS in most aquatic species including fish, crustacean and other species.
 - Flat Rock Creek
 - Similar concentrations to Captains Lagoon
 - Surface water – low levels between 0.1 – 0.07 µg/l
 - Biota - PFAS detections in most terrestrial and aquatic species.
 - Telegraph Creek low detects in surface water, no biota sampled in this area.
 - Marine areas – Jervis Bay and Wreck Bay
 - No detects in marine waters beyond immediate mixing zone
 - No verified results received indicating PFAS detects in any marine biota.
 - Vegetable samples taken from Wreck Bay, Village road and the school properties with no results received at this time.
 - Resampling of some of these areas will be carried out as part of the wet weather sampling program.