

Stedman, Andrew (Health)

From: [REDACTED] <[REDACTED]@defence.gov.au> on behalf of PFASIM Jervis Bay
 <pfasim.jervisbay@defence.gov.au>
Sent: Thursday, 23 March 2017 12:01 PM
To: Stedman, Andrew (Health)
Subject: RE: RFI - Defence PFAS JBT - sampling information for GHD -ACT Health results
 [SEC=UNCLASSIFIED]

UNCLASSIFIED

That is excellent. Thanks Andrew.

[REDACTED]
 (Contractor to Defence)
 Defence Project Manager - Environmental Investigations
 PFAS Investigation and Management Branch
 Department of Defence

T: [REDACTED]
 E: [REDACTED]@defence.gov.au
 A: BP8-1, 8 Brindabella Circuit, Brindabella Business Park
 PO Box 7925, Canberra BC 2610

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

From: Stedman, Andrew (Health) [mailto:Andrew.Stedman@act.gov.au]
Sent: Thursday, 23 March 2017 11:57 AM
To: PFASIM Jervis Bay
Subject: RE: RFI - Defence PFAS JBT - sampling information for GHD -ACT Health results [SEC=UNCLASSIFIED]

Hi [REDACTED],

Thanks for your call.

In regards to the sampling we conducted in November, to clarify, the 'Raw water JBT' sample was obtained from within the JBT water treatment plant. I took the sample from an inflow valve prior to any water treatment taking place.

The 'Processed Water JBT' sample was taken from the outflow (post-treatment train) within the plant.

The Lake Windermere sample was taken at the shoreline behind the water inlet point (probably the most accurate GPS address would be -35.140046, 150.672173)

Of the exact treatment train used in the water treatment plan, it may be best to clarify with JBT admin themselves but we have it recorded as follows.

JBT Water treatment plant

Provided to

Source water from Lake Windermere



Pre Ozone generator -a level of flocculation occurs here



Sand filter



Ozone



Contact tank - main Ozone disinfection occurs here



Carbon filtration – removes Ozone



Chlorine dosed at 1.5mg/L



Fluoridation



Outflow

Hope the above is helpful

Kind regards



Andrew Stedman | Environment Team Leader
Health Protection Service | health.act.gov.au
Phone (02) 6205 4404 | Mobile [REDACTED]

From: Stedman, Andrew (Health)

Sent: Thursday, 16 March 2017 10:02 AM

To: 'PFASIM Jervis Bay'

Subject: RE: RFI - Defence PFAS JBT - sampling information for GHD -ACT Health results [SEC=UNCLASSIFIED]

No problem [REDACTED]



Andrew Stedman | Environment Team Leader
Health Protection Service | health.act.gov.au
Phone (02) 6205 4404 | Mobile 0434 607 429

From: [REDACTED] [REDACTED]1@defence.gov.au] **On Behalf Of** PFASIM Jervis Bay

Sent: Thursday, 16 March 2017 9:02 AM

To: Stedman, Andrew (Health)

Subject: RE: RFI - Defence PFAS JBT - sampling information for GHD -ACT Health results [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi Andrew,

Thank you for this location data, it was very helpful.

Regards,

██████

██████ ██████

(Contractor to Defence)
 Defence Project Manager - Environmental Investigations
 PFAS Investigation and Management Branch
 Department of Defence

T: ██████████
 E: ██████████@defence.gov.au
 A: BP8-1, 8 Brindabella Circuit, Brindabella Business Park
 PO Box 7925, Canberra BC 2610

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

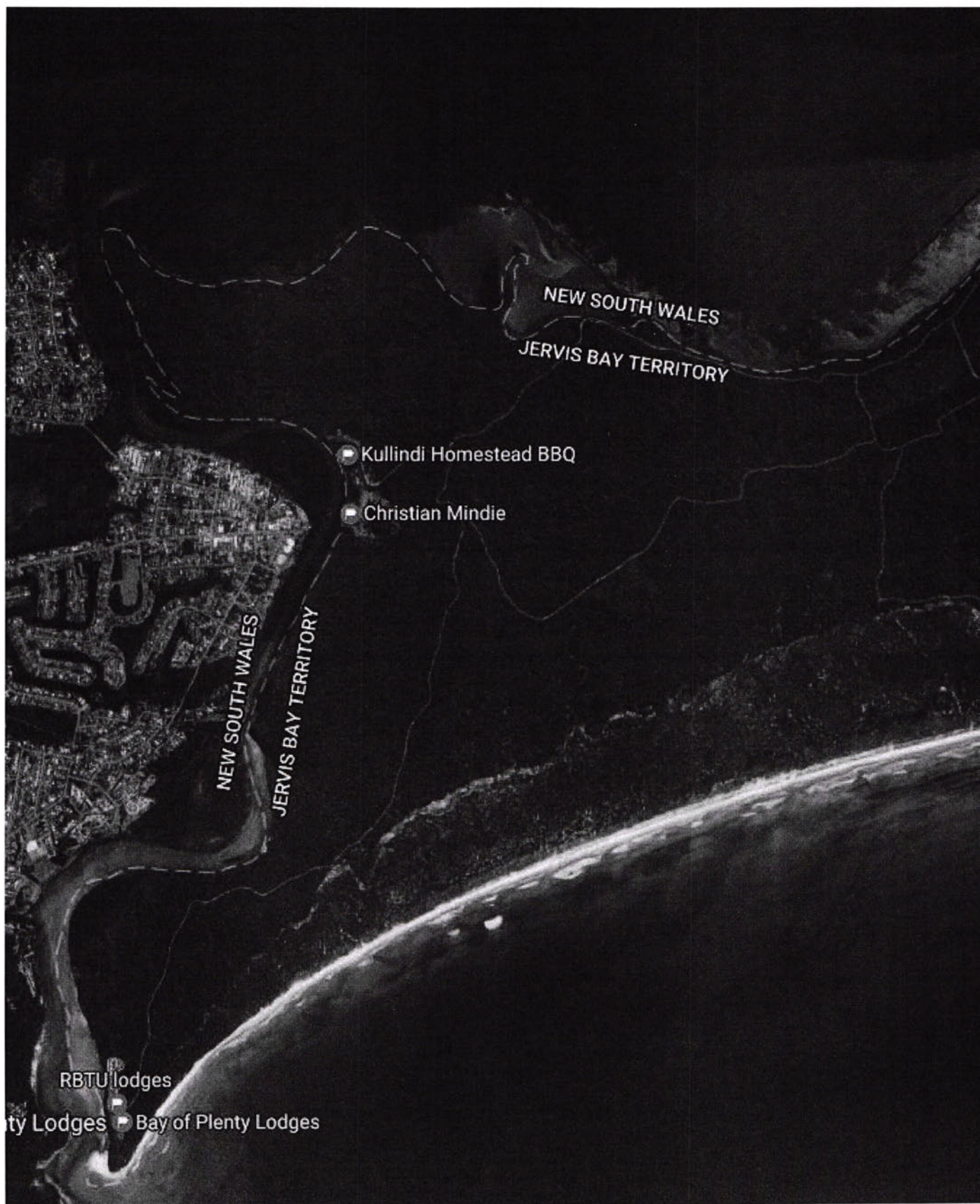
From: Stedman, Andrew (Health) [mailto:Andrew.Stedman@act.gov.au]
Sent: Thursday, 9 March 2017 4:55 PM
To: PFASIM Jervis Bay; ██████████@ghd.com'; '██████████@ghd.com'
Cc: Krsteski, Radomir (Health); ██████████@infrastructure.gov.au'
Subject: RE: RFI - Defence PFAS JBT - sampling information for GHD -ACT Health results [SEC=UNCLASSIFIED]

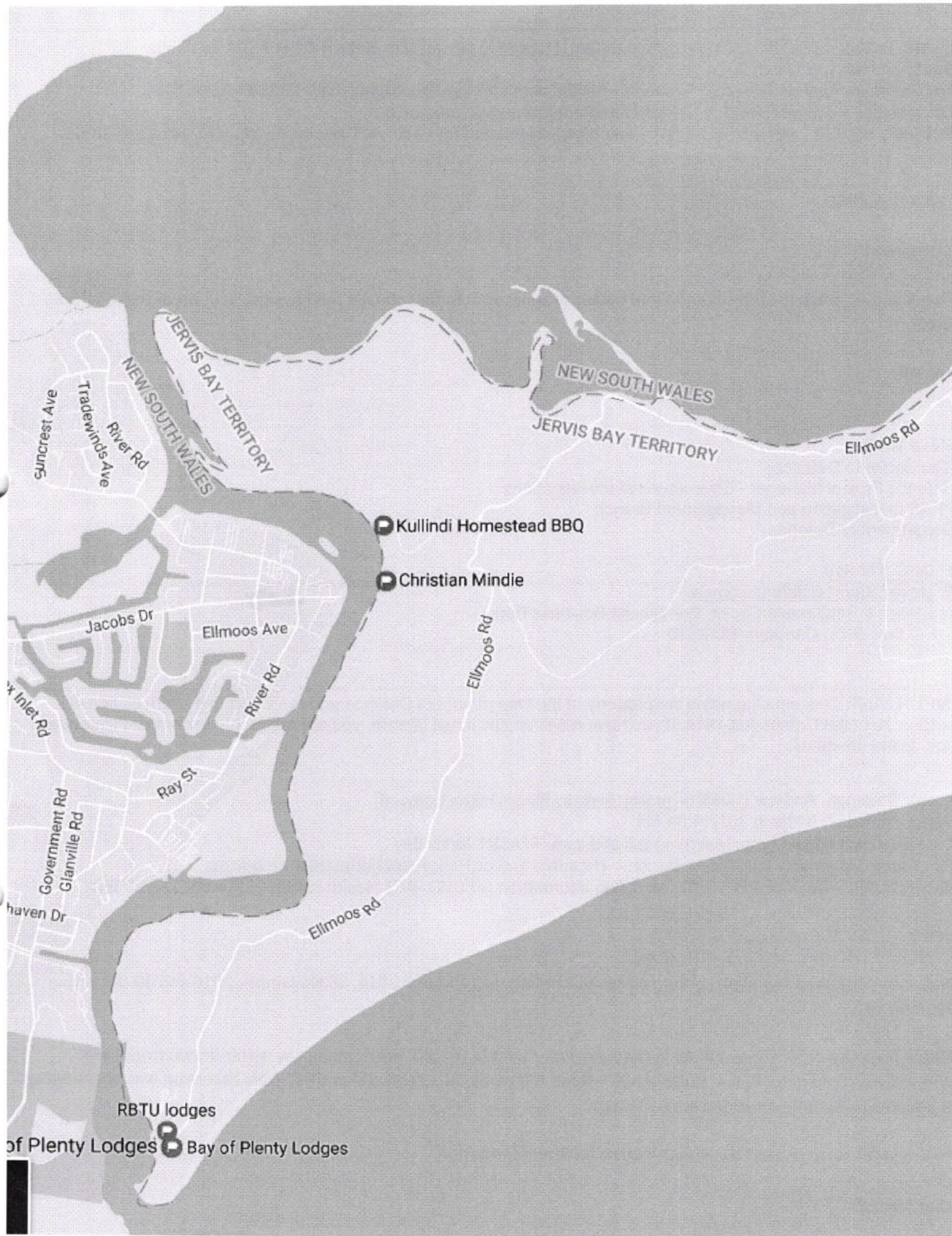
Hi ████████,

Please see the locations of sampling GPS coordinates of sample sites put onto google maps. Please note on the map grabs the red pin is on the location of the JBT water treatment plant.

Kind Regards

Location	Water sampled	GPS coordinates
Kullindi BBQ	Bore water	-35.153589, 150.606301
Bay of Plenty Lodges	Bore water	-35.181367, 150.594771
Rail Tram and Bus Union Camp	Bore mixed with rain water	-35.179548, 150.594398
Lake Windermere	Raw water	-35.139211, 150.678804
JBT Water Treatment Plant	Raw water & water post treatment (potable)	-35.139211, 150.678804





Andrew Stedman | Environment Team Leader
Health Protection Service | health.act.gov.au
Phone (02) 6205 4404 | Mobile [REDACTED]

From: [REDACTED] [REDACTED]@defence.gov.au] **On Behalf Of** PFASIM Jervis Bay
Sent: Thursday, 9 March 2017 4:15 PM
To: Stedman, Andrew (Health); [REDACTED]@ghd.com'; [REDACTED]@ghd.com'; PFASIM Jervis Bay
Cc: Krsteski, Radomir (Health); [REDACTED]@infrastructure.gov.au'
Subject: RE: RFI - Defence PFAS JBT - sampling information for GHD -ACT Health results [SEC=UNCLASSIFIED]

UNCLASSIFIED

Hi Andrew,

Thank you so much for this data. Do you have a graphic or map that show's the physical location of these sample sites?

Regards,
Tatts

[REDACTED]
 (Contractor to Defence)
 Defence Project Manager - Environmental Investigations
 PFAS Investigation and Management Branch
 Department of Defence

T: [REDACTED]
 E: [REDACTED]@defence.gov.au
 A: BP8-1, 8 Brindabella Circuit, Brindabella Business Park
 PO Box 7925, Canberra BC 2610

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

From: Stedman, Andrew (Health) [mailto:Andrew.Stedman@act.gov.au]
Sent: Thursday, 9 March 2017 4:04 PM
To: [REDACTED]r@ghd.com; [REDACTED]@ghd.com; PFASIM Jervis Bay
Cc: [REDACTED] 1; Krsteski, Radomir (Health); [REDACTED]@infrastructure.gov.au
Subject: RFI - Defence PFAS JBT - sampling information for GHD -ACT Health results [SEC=UNCLASSIFIED]

Hello,

Please see attached sampling conducted by ACT Health on 22 March 2016, 28 November 2016 and 19 December 2016 for PFAS.

Please note the detections of PFAS in the Raw water inlet in the JBT water plan (raw water drawn from Lake Windermere) and detection in Kullindi homestead BBQ area on 28 November 2016 (this detection was not repeated in a follow up sample on 19 December 2016).

Please feel free to contact me if you require further information.

Kind regards



Andrew Stedman | Environment Team Leader
 Health Protection Service | health.act.gov.au
 Phone (02) 6205 4404 | Mobile [REDACTED]

From: [REDACTED]@defence.gov.au] **On Behalf Of** PFASIM Jervis Bay
Sent: Thursday, 9 March 2017 2:15 PM
To: [REDACTED]; Chester, Heath; Stedman, Andrew (Health)
Cc: Krsteski, Radomir (Health); PFASIM Jervis Bay; [REDACTED]; [REDACTED]; [REDACTED]
Subject: RFI - Defence PFAS JBT - sampling information for GHD [SEC=UNCLASSIFIED]

UNCLASSIFIED

Good Afternoon Folks,

Thank you for your attendance today at the initial PCG for the Defence PFAS investigation of Jervis Bay Range Facility, HMAS Creswell and off facility sites.

As discussed, in order for GHD (lead consultant for the investigation) to carry out the most effective Sampling Analysis and Quality Plan (SAQP) we wish to obtain as much supporting reporting as possible.

It became apparent that JBTA, ACT Health and ACT EPA 'may' hold sampling reporting for JBT that could assist GHD's investigation.

As such, please receive this request for this information for this reporting. Reports can be emailed to:

pfasim.jervisbay@defence.gov.au

[REDACTED]@ghd.com

[REDACTED]@ghd.com

If files are large and thus unable to be emailed, then please email [REDACTED]@ghd.com and Dave will arrange FTP.

Noting the SAQP is due at the end of next week, we appreciate anything that can be done to expedite this request.

Kind Regards,
Tatts

[REDACTED]
 (Contractor to Defence)
 Defence Project Manager - Environmental Investigations
 PFAS Investigation and Management Branch
 Department of Defence

T: [REDACTED]

E: [REDACTED]@defence.gov.au

A: BP8-1, 8 Brindabella Circuit, Brindabella Business Park
 PO Box 7925, Canberra BC 2610

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

 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]@ghd.com>
Sent: Tuesday, 18 April 2017 12:51 PM
To: [REDACTED]

Subject: [REDACTED] Stedman, Andrew (Health)
JBRF - Project Control Group Meeting 2 - agenda
Attachments: PFAS Investigation JBRF PCG agenda Meeting 2.docx
Categories: Red Category

Hi All,

Please see attached the JBRF – PGC meeting 2 agenda
This month's meeting is "Dial In" with details provided below.
Please contact me in advance should you wish specific items added to the monthly agenda.

Join WebEx meeting

Meeting number [REDACTED]

Join by phone

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


Call-in number: [REDACTED] (Australia)

Regards,

[REDACTED]

[REDACTED] | M [REDACTED] | F 61 2 4424 4999 | E: [REDACTED]@ghd.com
Level 2, 57 Graham Street (PO Box 621) Nowra NSW 2541 Australia | <http://www.ghd.com/>
[Water](#) | [Energy & Resources](#) | [Environment](#) | [Property & Buildings](#) | [Transportation](#)

CONFIDENTIALITY NOTICE: This email, including any attachments, is confidential and may be privileged. If you are not the intended recipient please notify the sender immediately, and please delete it; you should not copy it or use it for any purpose or disclose its contents to any other person. GHD and its affiliates reserve the right to monitor and modify all email communications through their networks.

 Australian Government Department of Defence Estate and Infrastructure Group	PFAS Investigation and Management Program Jervis Bay Range Facility Project Control Group Meeting #2 Agenda
--	--

ADMINISTRATIVE ARRANGEMENTS	
Date	Tuesday 18 April 2017
Time	2:00 pm
Venue	Dial In
Dial-in Details	Toll ---- [REDACTED] Toll-free ---- [REDACTED] Participant PIN: [REDACTED]
Chair	[REDACTED], Defence Project Director
Minutes	GHD
ATTENDEES	
Defence	
[REDACTED] (Defence)	Director, Environmental Investigations-East and Remediation Programs
[REDACTED] (Defence)	Project Manager
[REDACTED] (Defence)	Alternate Project Manager
[REDACTED] (RAN)	Executive Officer
[REDACTED] (Defence)	Base Support Manager, Shoalhaven
[REDACTED] (Defence)	Base Support Operations Manager, HMAS Creswell
[REDACTED]	Assistant Director PFAS Environmental Management
[REDACTED]	Regional Environmental and Sustainability Officer
[REDACTED]	Regional Public Affairs Manager
Stedman, Andrew (Health)	
Lead Contractor (LC), GHD	
[REDACTED] (GHD)	Service Line Leader - Contamination Assessment & Remediation
[REDACTED] (GHD)	Principal Environmental Consultant
[REDACTED] (GHD)	Service Line Leader - Stakeholder Engagement
[REDACTED] (GHD)	Project Manager
Site Auditor (SA), AECOM	
[REDACTED] (AECOM)	Technical Director-Environment Defence appointed peer review
[REDACTED] (AECOM)	Technical Director-Environment Defence appointed peer review
(Agencies)	

[REDACTED]	Director - Jervis Bay Administration
[REDACTED]	Operations Manager Jervis Bay Territory Administration
[REDACTED]	ACT Construction, Environment and Workplace Protection
Radomir Krsteski	A/g Manager, Environmental Health, ACT Health
[REDACTED] (EPA)	
[REDACTED]	NSW Health
[REDACTED] (ENV)	Park Administrator – Booderee CFO - Business Manager Parks Australia
[REDACTED]@infrastructure.gov.au	Assistant Director - Jervis Bay Administration
[REDACTED]	Shoalhaven Operations Manager
[REDACTED]	Shoalhaven Operations Manager
[REDACTED]	Shoalhaven Operations Manager
[REDACTED] (NSW EPA)	Manager - Strategic
[REDACTED] (NSW EPA)	Albury Unit – South West Region.
[REDACTED] (NSW EPA)	Unit Head – PFAS Assessment and Management
AGENDA	
Welcome and Introductions	Chair
<i>Investigation Progress</i>	
GHD Issue of Sampling analysis Quality Plan (SAQP, Rev 0).	
Site Auditor has completed preliminary review of SAQP additional scope and detail to be incorporated has been requested.	
On Site sampling commenced at HMAS Creswell and JBRF 11 April. No sampling results received from Lab Analysis at this time	
<i>Stakeholder Engagement</i>	
First Community Information Meeting: Locally advertised and held Tuesday 21 March at Jervis Bay School Hall 6pm to 9pm. <i>Attended by:</i> <i>Defence:</i> PFAS project team and HMAS Creswell CO CAPT Huxtable. <i>Agencies:</i> JBTA & Dept of Human Services <i>Community:</i> 18 Jervis Bay Territory residents <i>GHD</i> – Investigation and Stakeholder team Significant interest from community noted with numerous questions tabled. Fact sheets and information handouts provided.	

<p>Information Meeting held for WBACC board on Tuesday 10 March, which identified: The council wishes to engage their own independent expert to be part of the process and to play a stronger role. Defence advised this expert will take some time (> 3 months) to identify and appoint and no access to the off-site areas is permitted until the expert is engaged. A significant program impact is anticipated as a result.</p>	
1800 Project Information line and website established with 13 distinct enquiries to date.	
<i>Site Auditor Update</i>	SA
<i>Risks and Issues</i>	Chair
<i>Other Business</i>	All
<i>Meeting Close</i>	Chair

Stedman, Andrew (Health)

Subject: JBRF - PFAS Investigation - Project Control Group Monthly Meeting
Location: Teleconference

Start: Tue 18/04/2017 2:00 PM
End: Tue 18/04/2017 3:30 PM
Show Time As: Tentative

Recurrence: (none)

Organizer: [REDACTED]

Welcome to the Monthly Project Control Group meeting for the Jervis Bay Range Facility - PFAS investigation. This recurring meeting will be held every third Tuesday of the month at 14:00, via teleconference details below.

If you have any questions please contact:

Defence Project Manager - Mr [REDACTED]; or

Defence Project Director - Mr [REDACTED],

HD Project manager - Mr [REDACTED]

Regards,

[REDACTED]

GHD

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

[REDACTED]
 (Contractor to Defence)

Defence Project Manager - Environmental Investigations

PFAS Investigation and Management Branch

Department of Defence

T: [REDACTED]
 [REDACTED]@defence.gov.au

A: BP8-1, 8 Brindabella Circuit, Brindabella Business Park
 PO Box 7925, Canberra BC 2610

[REDACTED]
 (Contractor to Defence)

Defence Project Director - Environmental Investigations

PFAS Investigation and Management Branch

Department of Defence

[REDACTED]

-- Do not delete or change any of the following text. --

Join WebEx meeting

Meeting number: [REDACTED]

If you are a host, [go here](#) to view host information.

Join by phone

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

Call-in number: [REDACTED] (Australia)

Show global numbers

Participant Pin Code: [REDACTED]

If using a GHD VoIP phone, please dial * [REDACTED]

Please dial *0 if you experience audio difficulties during conference

Can't join the meeting? [Contact support.](#)

IMPORTANT NOTICE: Please note that this WebEx service allows audio and other information sent during the session to be recorded, which may be discoverable in a legal matter. By joining this session, you automatically consent to such recordings. If you do not consent to being recorded, discuss your concerns with the host or do not join the session..

CONFIDENTIALITY NOTICE: This email, including any attachments, is confidential and may be privileged. If you are not the intended recipient please notify the sender immediately, and please delete it; you should not copy it or use it for any purpose or disclose its contents to any other person. GHD and its affiliates reserve the right to monitor and modify all email communications through their networks.



Australian Government
Department of Defence
Estate and Infrastructure Group

PFAS Environmental Investigation – Jervis Bay Range Facility
PROJECT CONTROL GROUP MEETING # 2

Administrative Details	
Date	Tuesday 18 April 2017
Time	14:00
Venue	Teleconference
Dial-in Details	Toll ----- 61 [REDACTED] Toll-free ----- [REDACTED] Participant PIN: [REDACTED]
Chair	[REDACTED], Defence Project Director
Minutes	Taken by [REDACTED]

ATTENDEES	
Defence	
[REDACTED]	Project Director, Environmental Investigations
[REDACTED]	Project Manager
[REDACTED]	Regional Manager Public Affairs Manager
Lead Contractor (LC), GHD	
[REDACTED]	Service Line Leader - Contamination Assessment & Remediation
[REDACTED]	Principal Environmental Consultant
[REDACTED]	Project Manager
[REDACTED]	Principal – Stakeholder Engagement
[REDACTED]	Stakeholder Engagement local indigenous community
[REDACTED]	Service Line Leader- Contamination Assessment & Remediation
Site Auditor (SA), AECOM	
[REDACTED]	Technical Director-Environment Defence appointed peer review
[REDACTED]	Technical Director-Environment Defence appointed peer review
Agencies	
Mr David Clapham (DC-2)	Senior Policy Officer - Intergovernmental Relations
[REDACTED]	Director - Jervis Bay Administration
[REDACTED]	Assistant Director – JBTA
Radomir Krsteski (RK)	A/g Manager, Environmental Health, ACT Health
[REDACTED]	Spotless Shoalhaven Operations Officer
[REDACTED]	NSW Health

	Park Administrator – Booderee CFO - Business Manager Parks Australia
	NSW EPA - Unit Head – PFAS Assessment and Management
	NSW EPA
Meeting Minutes	
Agenda Item	Summary
Welcome and Conduct of PCG Meetings	Defence PFAS - Welcomed attendees to the JBRF PFAS Investigation Project Control Group (PGC) meeting.
Introductions	Identified agenda, inviting comment from PCG members at various stages throughout the meeting.
Investigation Progress	
Conceptual Site Model	<ol style="list-style-type: none"> 1. provided brief overview of the site investigation to date identifying: <ul style="list-style-type: none"> o Completion of the rev 0 combined phase 1 and SAQP and issue to site auditor for preliminary review. o SAQP structure broken into source identification gained through staff interviews, previous investigation reports and aerial photographs. o 7 areas of primary concern identified: <ul style="list-style-type: none"> ▪ School of Ship Survivability and Sea Safety (SSSS). ▪ Areas adjacent SSSS (Mary creek headwaters). ▪ Small storage shed near SSSS. ▪ HMAS Creswell Golf Course (irrigated by effluent). ▪ HMAS Creswell fire station. ▪ Sewerage treatment plant. ▪ Small drum disposal area at JBRF (previously remediated) confirmation required. o Preliminary Conceptual Site Model (CSM) produced from the identified sources considering the geology, surface waters, topography and receptors on and around the site. Including PFAS and other contaminants. o Soil, sediment, surface water and two ground water aquifers identified for assessment during the investigation. Shallow ground water system identified. o Receptors include Onsite - base personal and students, base residents, Offsite resident's village road and Wreck bay. o Other receptors include flora and fauna. Specific species to be identified post consultation with community. Fishing in the local area also to be considered. 2. Identified GHD have produced the CSM from historical reports and information available at this stage and a draft investigation area has been defined which is with Defence for approval. This investigation area (which includes a small portion of NSW land (Flatrock Creek low lying areas approx. 200 metres into NSW territory) will be defined in the SAQP rev 1 which will be provided to agencies for review. 3. Comments invited: <ul style="list-style-type: none"> o SAQP release to agencies o Investigation area line on map and caution advised as to how this is presented to community. identified to liaise with Vicki Pearce offline on this issue. o Identified treated effluent water also used on quarterdeck and near gym and adjacent houses.

Detailed Site Investigation	<ol style="list-style-type: none"> 1. [REDACTED] On base sampling has commenced and should be completed mid May. 2. [REDACTED] identified Rev 1 of SAQP will be issued to all agencies for review approximately 27th April. 3. [REDACTED] identified two stages for investigation. Stage 1 Defence land which will be completed mid-July, and stage 2 Wreck Bay and Booderee lands to commence in July. This is as a result of WBACC direction that requirement exists for council to be fully informed prior to authorising access. 4. SAQP sampling does not include biota at the moment. Biota regime will be determined on other sampling results and consultation. 5. Comments: <ul style="list-style-type: none"> ○ [REDACTED] Queried whether sampling able to commence on WB land and Booderee land. Essentially on hold. Park permits may progress as normal awaiting WBACC approval.
Future Stages	
Human Health and Ecological Risk Assessment (HHERA)	
Site Auditor Update	6. [REDACTED] has reviewed Rev 0 SAQP and will be visiting site next week to observe procedures.
Stakeholder Engagement	
Meetings and Briefs	<ol style="list-style-type: none"> 7. [REDACTED] presentation provided to WBACC board, two requirements identified prior to WBACC approval: <ol style="list-style-type: none"> a. Require an independent advisor to WBACC council, which may take up to 3 months. b. Representation in IDC or other forum which is being explored by senior Defence personnel.
Fact sheet	
Community Information Sessions	<ol style="list-style-type: none"> 8. [REDACTED] 3 hour Community consultation session held on 21 March at the Jervis Bay School Hall, attended by 18 community members. 9. [REDACTED] Summary of issues tabled is that the community is worried about the condition of land and water and the impact of Defence activity over the past 60 years. Identifying traditional use of the land is ongoing and the impacts to health is a concern. Positive feedback received from community in the conduct of the forum, presenting style could be adjusted to suit WB community expectations.
Community Enquiries	<ol style="list-style-type: none"> 10. [REDACTED] very few enquiries received on 1800 or email, mainly in relation to community information session and some questions around soil removal currently occurring on separate construction project (HATS) which has been addressed. 11. Comments: <ul style="list-style-type: none"> ○ [REDACTED] HATS project is not removing soil is being stockpiled on site for redistribution on site. Only tested and cleared material is being removed.
Agency Comments	12. (DC2) ACT government involvement is to be determined. Will liaise with Defence offline.
Risks and Issues	<ol style="list-style-type: none"> 13. [REDACTED] Invited PCG to identify key risks, received as follows: <ol style="list-style-type: none"> a. [REDACTED] Questioned waste from STP however will wait to receive sampling plan before comment. b. [REDACTED] Program timeframe and timeliness for responses required from agencies
Other Business	

Meeting Close	Meeting Closed at 15:00
---------------	-------------------------

Action Items			
Item #	Description	Owner	Due date
13b	Defence and GHD to discuss how to best to inform agencies of project program	Defence ([REDACTED])	30/4/17



Australian Government
Department of Defence
Estate and Infrastructure Group

PFAS Environmental Investigation – Jervis Bay Range Facility
PROJECT CONTROL GROUP MEETING # 1

Administrative Details	
Date	Thursday 9 March 2017
Time	11:00 am
Venue	GHD Office, Level 7, 16 Marcus Clarke Street, Canberra ACT, 2601
Dial-in Details	Toll ----- [REDACTED] Toll-free ----- [REDACTED] Participant PIN: [REDACTED]
Chair	[REDACTED], Defence Project Director
Minutes	Taken by [REDACTED]

ATTENDEES	
Defence	
[REDACTED]	Project Director, Environmental Investigations
[REDACTED]	Project Manager
[REDACTED]	Alternate Project Manager
[REDACTED]	Assistant Director PFAS Environmental Management
[REDACTED]	Regional Public Affairs Manager
[REDACTED]	Base Support Manager, Shoalhaven
[REDACTED]	Base Support Operations Manager, HMAS Creswell
Lead Contractor (LC), GHD	
[REDACTED]	Service Line Leader - Contamination Assessment & Remediation
[REDACTED]	Principal Environmental Consultant
[REDACTED]	Service Line Leader - Stakeholder Engagement
[REDACTED]	Project Manager
[REDACTED]	Principal - Stakeholder Engagement
[REDACTED]	Service Line Leader- Contamination Assessment & Remediation
Site Auditor (SA), AECOM	
[REDACTED]	Technical Director-Environment Defence appointed peer review
[REDACTED]	Technical Director-Environment Defence appointed peer review
Agencies	
[REDACTED]	Assistant Director - Jervis Bay Administration

██████████ (██████████)	ACT Construction, Environment and Workplace Protection
Mr Andrew Stedman (██████████)	ACT Health
██████████ (██████████)	NSW Health
██████████ (██████████)	Park Administrator – Booderee CFO - Business Manager Parks Australia
██████████ (██████████)	NSW EPA - Unit Head – PFAS Assessment and Management
Meeting Minutes	
Agenda Item	Summary
Welcome and Conduct of PCG Meetings	<p>██████████ Defence PFAS - Welcomed attendees to the JBRF PFAS Investigation meeting.</p> <p>(██████████) Identified the requirement to keep information provided at this and future PCG meetings as 'For Official Use Only' and on a need to know basis within each respective organisation. Some of the preliminary results, plans or strategies provided at meetings may not be confirmed and there is a requirement to present only confirmed facts to the wider community.</p>
Introductions	All attendees provided individual introductions identifying their respective organisations relationship and interest to the JBRF PFAS Investigation project
Program and Project Overview	<ol style="list-style-type: none"> 1. (██████████) provided project overview using a power point presentation (provided to PCG) as a basis for the overview. 2. (██████████) Invited PCG members to provide comment at various stage throughout the presentation. Following received: <ol style="list-style-type: none"> a. (██████████) ACT Health – Comfortable with early progress, consultation required throughout investigation, eager to review sampling plan. b. (██████████) JBTA – <ol style="list-style-type: none"> i. Remove reference to ACT as Jervis bay is a Commonwealth Territory. ii. Summarised Coffey report (1996) to PCG identifying legacy impact on project and the expectation for the project to consider and incorporate. c. (██████████) Parks – Ensure cultural sensitivities are considered d. (██████████) JBTA – ACT Government providing water sampling services. Defence invited to submit RFI to obtain data for project use. e. (██████████) NSW EPA – Requirement to understand project program & identified NSW EPA support will be provided.
Investigation Progress	
- Conceptual Site Model	3. (██████████) GHD presented overview of preliminary site investigation to understand potential sources, pathways and receptors. Identified that the CSM will be included in the draft Sampling Analysis Quality Plan (SAQP) to be issued for preliminary review 17 March 17.
Future Stages	
- Detailed Site Investigation	<ol style="list-style-type: none"> 4. (██████████) Provided an overview of the investigation process. (██████████) identified Water, Biota & sediment sampling within JBT to be conducted with all bore holes located within the "Site" (Site includes Defence estate and Non Defence areas) 5. (██████████) advised that assessment criteria will be in accordance with Defence Contamination Directive #8, Regulatory Authorities, and international standards where Australian criteria are absent.

- Human Health and Ecological Risk Assessment (HHERA)	Preliminary Stage – Not specifically addressed
Site Auditor Update	6. [REDACTED] described her role as Site Auditor as performing the same audit function but in a non-regulatory manner.
Stakeholder Engagement	
- Meetings and Briefs	7. [REDACTED] Identified consultation with Booderee and WBACC is required and GHD field team personnel will undergo cultural awareness training.
- Fact sheet	Preliminary Stage – Not specifically addressed
- Community Engagement	8. [REDACTED] Advised that usual communication with the community in JBTA is via the 'Bulletin' managed by the JBTA.
- Community Enquiries	Nil to date.
Risks and Issues	<p>9. [REDACTED] Invited PCG to identify key risks, received as follows:</p> <ol style="list-style-type: none"> [REDACTED] timely responses from agencies dependent on forewarning of when they are likely to receive the documentation. GHD to issue schedule milestones to PCG. [REDACTED] JBTA have managed statutory obligations to date and not planning to conduct additional testing, however will support Defence project as required. [REDACTED] Timing for permit processing may impact program & consideration of cultural/environmental sensitive areas, [REDACTED] Defence Base support – Careful messaging going forward required and the links to legacy issues. [REDACTED] Defence PFAS – Consistent messaging between all agencies is required. The Environmental Clearance Certificate is required ASAP. [REDACTED] – Cultural sensitivity in all messaging required [REDACTED] Legacy pollution is a cumulative risk to consider. GHD – Risk to meeting schedule and the availability of information. Risk to gaining access off-site.
Other Business	Nil
Meeting Close	12:05 PM

Action Items			
Item #	Description	Owner	Due date
2d	RFI Exiting contamination sampling reports from JBTA	Defence [REDACTED]	12/03/17
	Update PCG with schedule milestones prior to PCGs	GHD	When issuing next PCG Agenda

Regards,

[REDACTED]

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

CONFIDENTIALITY NOTICE: This email, including any attachments, is confidential and may be privileged. If you are not the intended recipient please notify the sender immediately, and please delete it; you should not copy it or use it for any purpose or disclose its contents to any other person. GHD and its affiliates reserve the right to monitor and modify all email communications through their networks.

Stedman, Andrew (Health)

From: files@ghd.sendthisfile.com
Sent: Monday, 1 May 2017 2:08 PM
To: Stedman, Andrew (Health)
Subject: GHD file(s) . .JBRF SAQP Rev 1



Send: [REDACTED]
Recipient: david.clapham@act.gov.au [REDACTED]@infrastructure.gov.au [REDACTED]@infrastructure.gov.au
[REDACTED]@infrastructure.gov.au heath.chester@act.gov.au radomir.krsteski@act.gov.au [REDACTED]@epa.nsw.gov.au
[REDACTED]@health.nsw.gov.au [REDACTED]@environment.gov.au [REDACTED]@epa.nsw.gov.au
[REDACTED]@epa.nsw.gov.au Andrew.Stedman@act.gov.au
Upload Date: 2017-04-30 23:06:37.0

Subject: GHD file(s) . .JBRF SAQP Rev 1

Message: Please find link to Jervis Bay Range Facility SAQP.
Please contact me if file transfer cannot be achieved or any questions

Use the following links to download your file(s).

<https://ghd.sendthisfile.com/QaNxpcYhsrLZZhgYSPF8CgTk>

Note: These files will expire in 6 days from the time this email was generated.

Stedman, Andrew (Health)

From: [REDACTED]@ghd.com>
Sent: Thursday, 4 May 2017 10:37 AM
To: [REDACTED]@infrastructure.gov.au; [REDACTED]@epa.nsw.gov.au;
 [REDACTED]@infrastructure.gov.au; [REDACTED]@infrastructure.gov.au; Clapham,
 David; Krsteski, Radomir (Health); [REDACTED]@epa.nsw.gov.au;
 [REDACTED]@health.nsw.gov.au; [REDACTED]@environment.gov.au; Matthew
 James; Lauren Bourke; Stedman, Andrew (Health)
Cc: PFASIM Jervis Bay
Subject: RE: Jervis Bay Range facility Sampling Analysis Quality Plan Rev 1 issue
Categories: Red Category

Dear JBRF Project Control Group,

The Jervis bay range facility SAQP rev 1 file has been provided via large file transfer link
 Could I respectfully request any comments to the document are provided prior to the **18/05/17**, addressed to Mr
 Darron Coyle, emailing - pfasim.jervisbay@defence.gov.au

Agency	Recipient/s	File Received Date	Comments Provided	General Comments
ACT Government, Policy & Cabinet Division	[REDACTED]	01/05/17		GHD File Transfer Protocol 01/05/17
Jervis Bay Territory Administration	[REDACTED] [REDACTED] [REDACTED]	04/05/17		GHD FTP 01/05/17
ACT Health	Radomir Krsteski, Andrew Stedman	01/05/17		GHD FTP 01/05/17
ACT Construction, Environment and Workplace Protection	Heath Chester	01/05/17		GHD FTP 01/05/17
Parks - Booderee	[REDACTED] [REDACTED]			GHD FTP 01/05/17
NSW Health	[REDACTED]			GHD FTP 01/05/17
NSW EPA	[REDACTED] [REDACTED] [REDACTED] [REDACTED]	02/05/17		GHD FTP 01/05/17

Regards,

[REDACTED]

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

CONFIDENTIALITY NOTICE: This email, including any attachments, is confidential and may be privileged. If you are not the intended recipient please notify the sender immediately, and please delete it; you should not copy it or use it for any purpose or disclose its contents to any other person. GHD and its affiliates reserve the right to monitor and modify all email communications through their networks.

privileged. If you are not the intended recipient please notify the sender immediately, and please delete it; you should not copy it or use it for any purpose or disclose its contents to any other person. GHD and its affiliates reserve the right to monitor and modify all email communications through their networks.

Table 1 - JBRF Environmental Investigation Key Milestone summary

Item	Start	Finish	
SAQP	30/03/2017	15/09/2017	
Defence, Auditor and Agency review of SAQP Rev 1	04/05/2017	18/05/2017	Defence/Auditor/ACT & NSW Agencies
Finalise SAQP Rev 1	19/05/2017	26/05/2017	GHD
WBACC Adviser review of SAQP Rev 1	11/07/1017	25/07/2017	WBACC
Update of SAQP to incorporate water use survey results and independent adviser comments (If Required)	26/07/2017	08/08/2017	GHD
Defence, Auditor and Agency review of SAQP Rev 2 (If Required)	08/08/2017	22/08/2017	Defence/Auditor/ACT & NSW Agencies
Finalise SAQP	22/08/2017	22/08/2017	GHD
Biota SAQP	25/07/2017	22/08/2017	GHD
Defence, Auditor and Agency review of Biota SAQP	22/08/2017	05/09/2017	Defence/Auditor/ACT & NSW Agencies
Finalise Biota SAQP	05/09/2017	15/09/2017	GHD
Off Site Access	10/05/2017	17/07/2017	WBACC/Booderee
Approval to conduct Water use survey	10/05/2017	10/05/2017	WBACC
Appointment of WBACC independent Adviser	11/04/2017	11/07/1017	WBACC
Approval to conduct Off-Site Groundwater Bore Installation, Soil, Sediment and surface water sampling	11/07/1017	17/07/1017	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 Installation, Soil, Sediment and surface water sampling (Round 2).	TBA	TBA	GHD
Factual report of On-Site sampling results	09/05/2017	11/05/2017	GHD

Item	Start	Finish	
Off-Site Groundwater Bore Installation, Soil, Sediment and surface water sampling (Round 1)	11/07/2017	11/08/2017	GHD
Off-Site Groundwater Bore Installation, Soil, Sediment and surface water sampling (Round 2)	TBA	TBA	GHD
Factual report of Off Site sampling results	15/08/2017	28/08/2017	GHD
DSI Reporting	11/05/2017	14/02/2018	
Defence and Auditor review of Draft DSI Report	16/11/2017	26/11/2017	Defence/Auditor
Update of Draft DSI Report	26/11/2017	28/11/2017	GHD
ACT & NSW State Agency review of draft DSI Report	28/11/2017	22/12/2017	Defence/Auditor/ACT & NSW Agencies
Finalise DSI Report	10/01/2018	14/01/2018	GHD
Final DSI Report approved	15/01/2018	15/01/2018	Defence
Community Information Session	18/01/2018	14/02/2018	GHD/Defence/Agency
Human health and ecological risk assessment	24/08/2017	25/05/2018	
HHERA Methodology preparation	24/08/2017	06/09/2017	GHD
Review of Draft HHERA Methodology	07/09/2017	20/09/2017	Defence/Auditor/ACT & NSW Agencies
Implementation	21/09/2017	21/12/2017	GHD
Draft Reporting	05/01/2018	15/03/2018	GHD
ACT & NSW State Agency review of draft HHERA	16/03/2018	26/04/2018	Defence/Auditor/ACT & NSW Agencies
Finalise HHERA Report	27/04/2018	27/04/2018	GHD
Final HHERA report approved	27/04/2018	27/04/2018	Defence
Community Information Session	30/04/2018	25/05/2018	GHD/Defence/Agency



Australian Government
Department of Defence
 Estate and Infrastructure Group

PFAS Investigation and Management
Monthly Report- Jervis Bay Range Facility

05 05 2017

BP3-02-B091

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

Re: Jervis Bay Range Facility Environmental Investigation – Progress Report March & April 2017

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 PFC Site Conditions at Jervis Bay Range facility, HMAS Creswell and surrounds for the period between 01 March and 30 April 2017.

2.0 Critical items

2.1 New items

- GHD Investigation team inspected existing ground water wells and interviewed site staff for historical AFFF use and information to support the development of Detailed Site Investigation (DSI), Sampling Analysis Quality Plan (SAQP)
- The Draft Detailed Site Investigation (DSI) Sampling Analysis Quality Plan (SAQP) Rev 0, issued to Defence and site auditor for comment.
- The Detailed Site Investigation (DSI) Sampling Analysis Quality Plan (SAQP) Rev 1, issued to Defence, Agencies and site auditor for comment, incorporating comments and additional sampling locations, depths and quantities requested by site auditor.
- Variation No.1 submitted to Defence to identify costs associated with additional sampling effort. In principal agreement received from Defence to allow development of SAQP Rev 1.
- The Board of Wreck Bay Aboriginal Community Council (WBACC) was briefed on 11 Apr 2017 to seek agreement to access aboriginal lands for the PFAS investigation. The Board stated that no access to aboriginal lands will be granted, prior to appointment of independent expert to advise WBACC. This directly impacts the DSI works for the '403 land' and the Booderee National Park.
- As a result of the delay associated with accessing aboriginal land (expected to be 3 months or greater) the Detailed Site Investigation (DSI) has proceeded on Defence land only. The DSI for non-Defence land will commence when approval from WBACC is provided and will likely require an update of the SAQP to incorporate feedback received from water use survey and other information provided by the community.

- WBACC board requested copies of the historical reports associated with contamination investigations conducted in and around JBRF. Copies of the Coffey report (1996) and other investigation reports are scheduled for delivery in early May.
- The On-Site sampling has been completed, with a factual report of On-Site sampling provided as separate attachment to the PCG.

2.2 Previously raised items to be addressed

Nil

3.0 Project progress

- The project schedule is presented in the enclosed Version 3 of the master project schedule, dated 04-11 May 2017

3.1 Project impacts

- Identification of WBACC independent adviser and approval to conduct investigation on aboriginal lands.
- Identification of the requirement to conduct the Groundwater numerical modelling and Human Health risk Assessment (HHRA)

3.2 Project meetings

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

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

Meeting date	Meeting title	Participants	Minutes circulated
09 Mar 2017	PCG No 1	PCG members	Yes
21 Mar 2017	Community Information Session 1	18 Community Members + GHD, Defence, 2 Agencies reps	Yes
11 Apr 2017	WBACC Board briefing	WBACC Board, Senior Defence personnel, [REDACTED] (GHD Stakeholder team)	No
18 Apr 2017	PCG No 2	PCG members	Yes
Recurring Wednesday's	Weekly meetings	JBRF project team – Defence, GHD & Site auditor	Yes

3.3 Project deliverables submitted this period

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

Table 2: Project deliverables submitted during the March and April reporting period

Document status	Title	Date submitted
Draft (Rev 0)	JBRF PSI & SAQP	17 March 2017
Final	Community Information Session 1 Debrief report	29 March 2017
Final Draft	Wreck Bay SCEP	20 April 2017
Final (Rev 1)	JBRF PSI & SAQP	21 April 2017

3.4 Project Milestones

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

- Establish and maintain community hotline.
- Community engagement session 1.
- Site Visits and interviews with key personnel to support development of SAQP.

- SAQP (Rev1) development and issue for stakeholder review.
- PFAS Source testing areas A-H (On Base) 80%.

4.0 Project Forecast

The project schedule is presented in the enclosed ~~Version 3 of the master~~ project schedule, dated 04/11 May 2017

4.1 Schedule tracking forecast

- The development and finalisation of the SAQP has been impacted by access to the Wreck Bay community and land and therefore has been delayed. It is envisaged that an update to the SAQP will be required when access is provided.
- SAQP (Rev 1) does not include reference to Biota sampling given the requirement for community input and initial results from off-base results. A standalone SAQP for Biota sampling will be developed and issued when appropriate.
- The On-base DSI is proceeding on schedule for completion in May 2017.

4.2 Project deliverables expected next period

- SAQP Rev 2 Incorporating Agency, Defence and Auditor comments.

4.3 Technical Advisor forecast

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

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

Scope item	Achieved to date	Planned for next month
Review of Draft SAQP (Rev 0)	27 March 2017	
Review of SAQP (Rev 1)	30 April 2017	
Site inspection and review of GHD Detailed Site Investigation procedures	26/27 April 2017	

5.0 Community enquiries

In this reporting period:

- 15 community enquiries in total were received via the Community Hotline (1800 987 618) and email (Jervisbay@ghd.com.au)
- There are 2 outstanding stakeholder enquires
 1. Request for the (Sic) "the report that sparked the end of PFAS use across the bases". Intention is to provide NICNAS alert on PFOS that was released in April 2003 in response.
 2. Request for Historical contamination reports from WBACC. Intention to provide all relevant reports to WBACC (May 2017)
- Recent enquiries received during this reporting period include the following themes:
 1. General enquiries relating to the community information session held 21 March 2017
 2. General enquiry relating to offsite soil disposal related to HATS infrastructure development project.

6.0 Interaction with Government

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

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

Meeting date	Meeting title	Participants	Minutes circulated
09 Mar 2017	PCG No 1	NSW & ACT Agencies	Yes
18 Apr 2017	PCG No 2	ACT Gov, NSW & ACT Agencies	Yes

9.0 Requests for information from Defence

- All relevant historical reports associated with JBRF environmental assessments and contamination investigations have been provided to GHD by Defence.
- The Coffey report 1996 volumes 2 and 3 have not been provided.

10.0 Other Matters

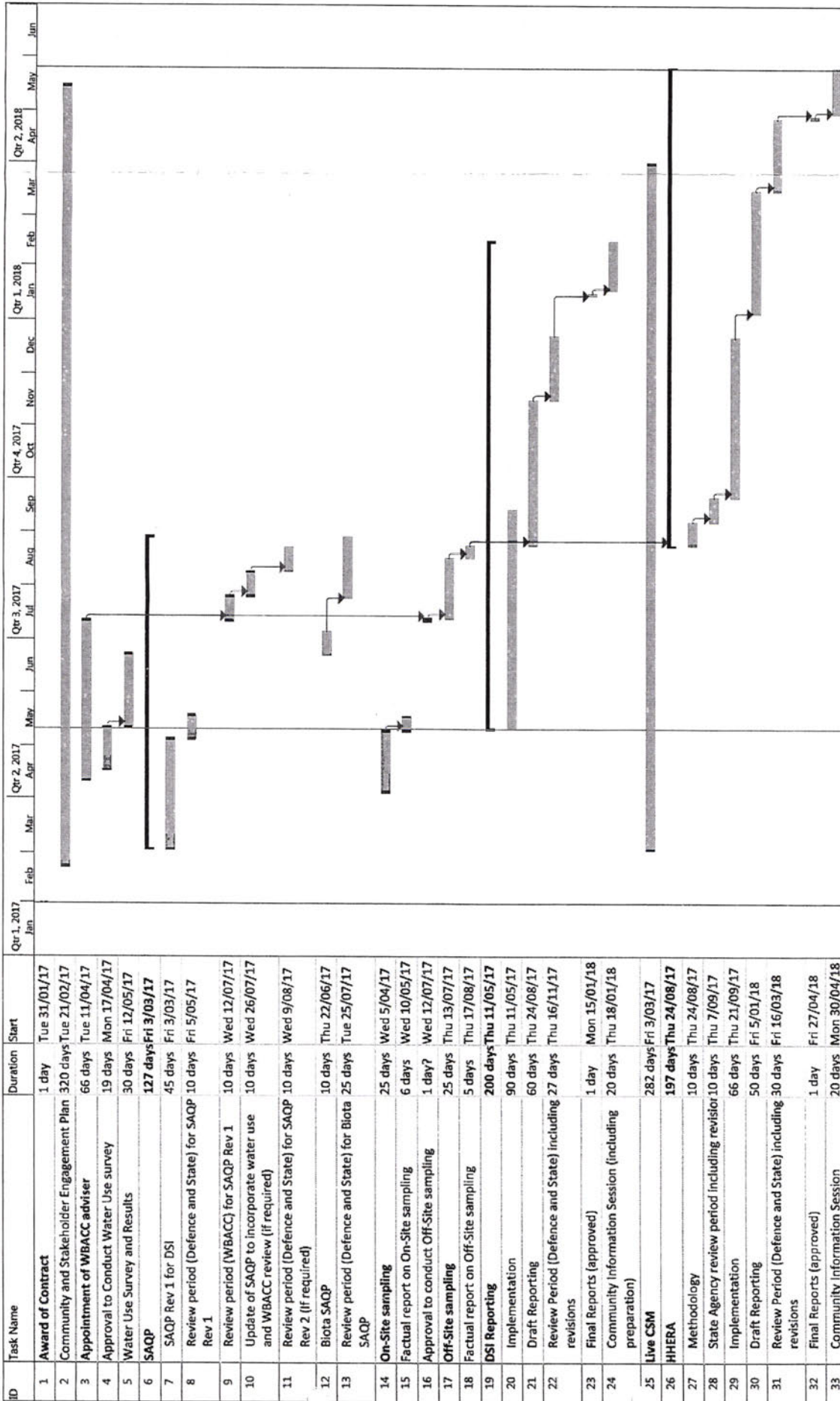
- Nil
-

Yours sincerely

[REDACTED]

CC:

Enclosures: Project Schedule Rev 1 - Dated 11/05/2017



ID	Task Name	Duration	Start	Task	Project Summary	Manual Task	Start-only	Deadline
1	Award of Contract	1 day	Tue 31/01/17	Task	Project Summary	Manual Task	Start-only	Deadline
2	Community and Stakeholder Engagement Plan	320 days	Tue 21/02/17	Split	Project Summary	Duration-only	Finish-only	Progress
3	Appointment of WBACC adviser	66 days	Tue 11/04/17	Milestone	Inactive Task	Manual Summary Rollup	External Tasks	Manual Progress
4	Approval to Conduct Water Use Survey	19 days	Mon 17/04/17	Summary	Inactive Milestone	Manual Summary	External Milestone	
5	Water Use Survey and Results	30 days	Fri 12/05/17					
6	SAQP	127 days	Fri 3/03/17					
7	SAQP Rev 1 for DSI	45 days	Fri 3/03/17					
8	Review period (Defence and State) for SAQP Rev 1	10 days	Fri 5/05/17					
9	Review period (WBACC) for SAQP Rev 1	10 days	Wed 12/07/17					
10	Update of SAQP to incorporate water use and WBACC review (if required)	10 days	Wed 26/07/17					
11	Review period (Defence and State) for SAQP Rev 2 (if required)	10 days	Wed 9/08/17					
12	Biota SAQP	10 days	Thu 22/06/17					
13	Review period (Defence and State) for Biota SAQP	25 days	Tue 25/07/17					
14	On-Site sampling	25 days	Wed 5/04/17					
15	Factual report on On-Site sampling	6 days	Wed 10/05/17					
16	Approval to conduct Off-Site sampling	1 day	Wed 12/07/17					
17	Off-Site sampling	25 days	Thu 13/07/17					
18	Factual report on Off-Site sampling	5 days	Thu 17/08/17					
19	DSI Reporting	200 days	Thu 11/05/17					
20	Implementation	90 days	Thu 11/05/17					
21	Draft Reporting	60 days	Thu 24/08/17					
22	Review Period (Defence and State) including revisions	27 days	Thu 16/11/17					
23	Final Reports (approved)	1 day	Mon 15/01/18					
24	Community Information Session (including preparation)	20 days	Thu 18/01/18					
25	Live CSM	282 days	Fri 3/03/17					
26	Methodology	197 days	Thu 24/08/17					
27	State Agency review period including revisor	10 days	Thu 24/08/17					
28	Implementation	66 days	Thu 7/09/17					
29	Draft Reporting	50 days	Fri 5/01/18					
30	Review Period (Defence and State) including revisions	30 days	Fri 16/03/18					
31	Final Reports (approved)	1 day	Fri 27/04/18					
32	Community Information Session	20 days	Mon 30/04/18					

(Health)' <Andrew.Stedman@act.gov.au> [REDACTED], [REDACTED] 3' <[REDACTED]3@defence.gov.au>
Subject: PFAS Factual data - Issue 1

Dear PCG

Please find attached a summary of the soil, sediment and surface water analytical data received as of 5 May 2017 for samples collected during the onsite investigations conducted between 10 April and 21 April 2017.

The data has been issued for factual information purposes only.

GHD will conduct a full assessment of the data upon completion of site investigations, and will screen the data against the published criteria presented in Section 5 of the GHD, Preliminary Site Investigation & Sampling, Analysis and Quality Plan (Rev1), April 2017.

Regards,

[REDACTED]

GHD

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

CONFIDENTIALITY NOTICE: This email, including any attachments, is confidential and may be privileged. If you are not the intended recipient please notify the sender immediately, and please delete it; you should not copy it or use it for any purpose or disclose its contents to any other person. GHD and its affiliates reserve the right to monitor and modify all email communications through their networks.



Memorandum

05 May 2017

To Department of Defence

Copy to File

From [REDACTED] [REDACTED] Tel +61 2 9239 7441

Subject Factual data - on site investigations – Issue 1 Job no. 212617102

Dear [REDACTED]

Factual information – Issue 1

Please find attached a summary of the soil, sediment and surface water analytical data received as of 5 May 2017 for samples collected during the onsite investigations conducted between 10 April and 21 April 2017.

The information relates to investigation locations referenced on the attached Figures 7B to 7K. GHD note that not all the investigation location listed on the attached figures have analytical results (as of 5 May 2017) as the investigation is ongoing. The data summarised herein relates to investigations conducted at the following locations.

Table 1 Summary of the investigation locations

Area of Environmental Concern (AEC)	Soils	Sediment	Surface water
Jervis Bay Range Facility (JBRF)			
AEC A – Royal Australian Navy School of Survivability and Ship Safety (RAN SSSS)	A_BH01 to A_BH28 A_MW01 to A_MW06	-	-
AEC B – Area adjacent to RAN SSSS - Mary Creek Headwaters	B_HA01 to B_HA10 B_MW01 to B_MW04	B_SED01 to B_SED03	B_SW01 to B_SW03
AEC D – Former Building 15	D_HA01 & D_HA03	-	
Area H – Former Drum Disposal Area	H_HA01 to H_HA05	H_SED01	H_SW01
Drainage channels	-	AB_SED01 to AB_SED04 & AB_SED06 DC_SED01 to DC_SED06	AB_SW01 to AB_SW04 & AB_SW06 DC_SW01 to DC_SW06
HMAS Creswell			
AEC E – Golf Course	E_HA01 to E_HA15 E_MW01 to E_MW05	E_SED01 to E_SED04	E_SW01 to E_SW04
AEC F – Fire Station	F_MW01 & F_MW02	F_SED01 & F_SED02	SW01 & SW02
AEC G – sewage treatment plant (STP)	-	-	G_SW01 & G_SW03
Captains Lagoon - onsite	-	CL_SED01 to CL_SED11	CL_SW01 to CL_SW11



Memorandum

Area of Environmental Concern (AEC)	Soils	Sediment	Surface water
Flatrock Creek - onsite	-	FC_SED01 to FC_SED11	FC_SW01 to FC_SW11

No interpretation of the data has been made at this time, and the factual information should not be reviewed in isolation. The factual information present will be evaluated in context of the whole data set on completion of all field investigations. A summary of the PFAS in soils, sediment and surface water results for the analytical results received as of 05 May 2017.

Table 2 Summary of the PFAS in soil results

Analyte (mg/kg)	Number of Samples analysed	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect
Perfluorodecanesulfonic acid (PFDS)	172	34	<0.0002	0.0002	0.0304	0.0304
PFHxS and PFOS (Sum of Total) - Lab Calc	165	157	<0.0002	0.0002	4.74	4.74
4:2 Fluorotelomer sulfonic acid	172	0	<0.0005	ND	<0.005	ND
10:2 Fluorotelomer sulfonic acid	172	6	<0.0005	0.0005	<0.005	0.0018
N-Ethyl perfluorooctane sulfonamidoacetic acid	172	3	<0.0002	0.0006	<0.01	0.0016
Perfluoroheptane sulfonic acid	172	72	<0.0002	0.0002	0.0444	0.0444
N-Methyl perfluorooctane sulfonamidoacetic acid	172	3	<0.0002	0.0003	<0.01	0.0016
Perfluorobutane sulfonic acid	172	50	<0.0002	0.0002	<0.005	0.0035
Perfluorohexane sulfonic acid (PFHxS)	172	140	<0.0002	0.0002	0.198	0.198
Perfluoropentanoic acid	172	18	<0.0002	0.0002	<0.005	0.0043
8:2 Fluorotelomer sulfonic acid	172	6	<0.0005	0.0005	0.0083	0.0083
N-Ethyl perfluorooctane sulfonamide	172	0	<0.0005	ND	<0.005	ND
N-Ethyl perfluorooctane sulfonamidoethanol	172	0	<0.0005	ND	<0.005	ND
N-Methyl perfluorooctane sulfonamide	172	0	<0.0005	ND	<0.005	ND
N-Methyl perfluorooctane sulfonamidoethanol	172	0	<0.0005	ND	<0.005	ND
6:2 Fluorotelomer Sulfonate (6:2 FTS)	172	8	<0.0005	0.0006	<0.01	0.0056
Perfluorooctanoic acid (PFOA)	172	88	<0.0002	0.0002	0.0228	0.0228



Memorandum

Analyte (mg/kg)	Number of Samples analysed	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect
Perfluoropentane sulfonic acid	172	45	<0.0002	0.0002	<0.005	0.0049
Perfluorobutanoic acid	172	7	<0.001	0.001	0.132	0.132
Perfluorodecanoic acid	172	17	<0.0002	0.0002	<0.005	0.0023
Perfluorododecanoic acid	172	3	<0.0002	0.0004	<0.005	0.0009
Perfluoroheptanoic acid	172	47	<0.0002	0.0002	<0.005	0.0024
Perfluorohexanoic acid (PFHxA)	172	101	<0.0002	0.0002	0.0104	0.0104
Perfluorononanoic acid	172	13	<0.0002	0.0002	<0.005	0.0024
Perfluorooctane sulfonic acid (PFOS)	172	158	<0.0002	0.0002	4.65	4.65
Perfluorooctane sulfonamide (FOSA)	172	25	<0.0002	0.0002	0.006	0.006
Perfluorotetradecanoic acid	172	0	<0.0005	ND	<0.005	ND
Perfluorotridecanoic acid	172	2	<0.0002	0.0002	<0.005	0.0003
Perfluoroundecanoic acid	172	8	<0.0002	0.0003	<0.005	0.0013
PFAS (Sum of Total)	165	157	<0.0002	0.0002	4.83	4.83
PFAS (Sum of Total)(WA DER List)	165	157	<0.0002	0.0002	4.77	4.77

Table 3 Summary of the PFAS in sediment results

Analyte (mg/kg)	Number of Samples analysed	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect
Perfluorodecanesulfonic acid (PFDS)	46	5	<0.0002	0.0009	<0.005	0.0031
PFHxS and PFOS (Sum of Total) - Lab Calc	45	43	<0.0002	0.0002	0.231	0.231
4:2 Fluorotelomer sulfonic acid	46	0	<0.0005	ND	<0.005	ND
10:2 Fluorotelomer sulfonic acid	46	1	<0.0005	0.0024	<0.005	0.0024
N-Ethyl perfluorooctane sulfonamidoacetic acid	46	2	<0.0002	0.0002	<0.01	0.0003
Perfluoroheptane sulfonic acid	46	14	<0.0002	0.0002	<0.005	0.0025
N-Methyl perfluorooctane sulfonamidoacetic acid	46	0	<0.0002	ND	<0.01	ND



Memorandum

Analyte (mg/kg)	Number of Samples analysed	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect
Perfluorobutane sulfonic acid	46	3	<0.0002	0.0003	<0.005	0.0005
Perfluorohexane sulfonic acid (PFHxS)	46	32	<0.0002	0.0002	0.0195	0.0195
Perfluoropentanoic acid	46	1	<0.0002	0.0005	<0.005	0.0005
8:2 Fluorotelomer sulfonic acid	46	2	<0.0005	0.0007	<0.005	0.0037
N-Ethyl perfluorooctane sulfonamide	46	0	<0.0005	ND	<0.005	ND
N-Ethyl perfluorooctane sulfonamidoethanol	46	0	<0.0005	ND	<0.005	ND
N-Methyl perfluorooctane sulfonamide	46	1	<0.0005	0.0008	<0.005	0.0008
N-Methyl perfluorooctane sulfonamidoethanol	46	1	<0.0005	0.0009	<0.005	0.0009
6:2 Fluorotelomer Sulfonate (6:2 FTS)	46	1	<0.0005	0.0071	<0.01	0.0071
Perfluorooctanoic acid (PFOA)	46	14	<0.0002	0.0002	<0.005	0.0028
Perfluoropentane sulfonic acid	46	5	<0.0002	0.0002	<0.005	0.0005
Perfluorobutanoic acid	46	2	<0.001	0.001	<0.005	0.001
Perfluorodecanoic acid	46	3	<0.0002	0.0002	<0.005	0.0009
Perfluorododecanoic acid	46	2	<0.0002	0.0004	<0.005	0.0009
Perfluoroheptanoic acid	46	4	<0.0002	0.0002	<0.005	0.0008
Perfluorohexanoic acid (PFHxA)	46	12	<0.0002	0.0002	<0.005	0.0031
Perfluorononanoic acid	46	0	<0.0002	ND	<0.005	ND
Perfluorooctane sulfonic acid (PFOS)	46	44	<0.0002	0.0002	0.224	0.224
Perfluorooctane sulfonamide (FOSA)	46	6	<0.0002	0.0004	<0.005	0.0012
Perfluorotetradecanoic acid	46	0	<0.0005	ND	<0.005	ND
Perfluorotridecanoic acid	46	0	<0.0002	ND	<0.005	ND
Perfluoroundecanoic acid	46	4	<0.0002	0.0002	<0.005	0.0012
PFAS (Sum of Total)	45	43	<0.0002	0.0002	0.239	0.239
PFAS (Sum of Total)(WA DER List)	45	43	<0.0002	0.0002	0.233	0.233



Memorandum

Table 4 Summary of the PFAS in surface water results

Analyte (µg/L)	Number of Samples analysed	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect
Perfluorodecanesulfonic acid (PFDS)	54	10	<0.0005	0.0005	<0.2	0.0116
PFHxS and PFOS (Sum of Total) - Lab Calc	52	52	0.0119	0.0119	12	12
4:2 Fluorotelomer sulfonic acid	54	0	<0.001	ND	<0.5	ND
10:2 Fluorotelomer sulfonic acid	53	1	<0.001	0.002	<0.5	0.002
N-Ethyl perfluorooctane sulfonamidoacetic acid	54	1	<0.0005	0.001	<0.2	0.001
Perfluoroheptane sulfonic acid	53	49	<0.0005	0.0005	0.328	0.328
N-Methyl perfluorooctane sulfonamidoacetic acid	54	0	<0.0005	ND	<0.2	ND
Perfluorobutane sulfonic acid	54	53	0.0007	0.0007	0.514	0.514
Perfluorohexane sulfonic acid (PFHxS)	54	53	0.0057	0.0057	6.4	6.4
Perfluoropentanoic acid	54	26	<0.0005	0.0011	<0.2	0.134
8:2 Fluorotelomer sulfonic acid	54	2	<0.001	0.001	<0.5	0.019
N-Ethyl perfluorooctane sulfonamide	53	0	<0.001	ND	<0.5	ND
N-Ethyl perfluorooctane sulfonamidoethanol	53	0	<0.001	ND	<0.5	ND
N-Methyl perfluorooctane sulfonamide	53	0	<0.001	ND	<0.5	ND
N-Methyl perfluorooctane sulfonamidoethanol	53	1	<0.001	0.6	0.6	0.6
6:2 Fluorotelomer Sulfonate (6:2 FTS)	54	11	<0.001	0.002	<0.5	0.048
Perfluorooctanoic acid (PFOA)	54	46	<0.0005	0.0006	0.236	0.236
Perfluoropentane sulfonic acid	53	52	0.0006	0.0006	0.334	0.334
Perfluorobutanoic acid	54	0	<0.002	ND	<1	ND
Perfluorodecanoic acid	54	15	<0.0005	0.0006	<0.2	0.0081
Perfluorododecanoic acid	54	1	<0.0005	0.0015	<0.2	0.0015
Perfluoroheptanoic acid	54	38	<0.0005	0.0006	<0.2	0.0562
Perfluorohexanoic acid (PFHxA)	54	50	<0.0005	0.0009	0.986	0.986



Memorandum

Analyte (µg/L)	Number of Samples analysed	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect
Perfluorononanoic acid	54	14	<0.0005	0.0005	<0.2	0.0079
Perfluorooctane sulfonic acid (PFOS)	54	54	0.0055	0.0055	7.07	7.07
Perfluorooctane sulfonamide (FOSA)	54	18	<0.0005	0.0006	0.2	0.2
Perfluorotetradecanoic acid	54	0	<0.0005	ND	<0.5	ND
Perfluorotridecanoic acid	54	0	<0.0005	ND	<0.2	ND
Perfluoroundecanoic acid	54	3	<0.0005	0.0007	<0.2	0.0027
PFAS (Sum of Total)	52	52	0.0133	0.0133	14	14
PFAS (Sum of Total)(WA DER List)	52	52	0.0127	0.0127	13.6	13.6

Tables 5 to 7 below provides a summary of the non-PFAS results received to 05 May 2017. We note that other analytes such as VOC, SVOC, phenol, OC pesticides, OP Pesticides have been analysed on selected samples and with the exception of those reported in the summary tables below all other analytes within these suites were at concentrations less than the relevant laboratory limit of detection.

Table 5 Summary of Non-PFAS results - Soils

Analyte (mg/kg)	Number of Samples analysed	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect
Total Organic Carbon	166	162	<0.02	0.03	6.6	6.6
Asbestos	11	1	Absent	Absent	Present	Present
Arsenic	88	11	<2	2	7	7
Cadmium	88	0	<0.4	ND	<1	ND
Chromium (III+VI)	88	59	<2	2	24	24
Copper	88	28	<5	5	104	104
Lead	88	44	<5	5	75	75
Mercury	88	3	<0.1	0.1	0.5	0.5
Nickel	88	24	<2	2	23	23
Zinc	88	45	<5	5	409	409
C6-C10 minus BTEX (F1)	88	0	<10	ND	<20	ND
C6 - C10 Fraction	88	0	<10	ND	<20	ND
>C10-C16 minus Naphthalene (F2)	88	8	<50	80	1180	1180
>C10 - C16 Fraction	88	8	<50	80	1180	1180
>C16 - C34 Fraction (F3)	88	33	<100	100	4850	4850