APPENDIX 7

Letter from JBS dated 9 February 2011

Our Ref: JBS41181-16471 Rev 1

09 February 2011

Meaghan Walsh
General Counsel
Barangaroo Delivery Authority
Via email: meghan.walsh@barangaroo.nsw.gov.au

Cc:
Michael Flynn
Barangaroo Delivery Authority
Via email: michael.flynn@barangaroo.nsw.gov.au

Brian Ten Brinke
Barangaroo Delivery Authority
Via email: brian.tenbrinke@barangaroo.nsw.gov.au

Privileged and Confidential

Further Refinement of Extent of Remediation Works on Headland Park, Barangaroo, NSW, Revision 1

Dear Meaghan,

This letter presents the current estimates of the extent of remediation works required on the Barangaroo Headland Park Site, prepared by JBS Environmental Pty Ltd (JBS) at the request of the Barangaroo Delivery Authority (BDA).

Previous Estimate of Extent of Remediation Works on Headland Park

A preliminary estimate of the extent of remediation works was provided in *Remedial Action Plan Barangaroo Delivery Authority' Barangaroo Headland Park and Northern Cove Hickson Road, Sydney, NSW* Revision D', JBS Environmental Pty Ltd, October 2010 (JBS 2010a). Following additional assessment works and Site Auditor advice, and preparation of a Sampling Analysis and Quality Plan (JBS 2010c)[1], the extent and volumes were subsequently refined as documented in a letter to BDA dated 2 December 2010 '*Refinement of Extent of Remediation Works Required on Headland Park, Barangaroo, NSW*', in which it was concluded:

- *No soils on Headland Park Site, from a contamination perspective, are considered to be unsuitable for re-use on the Headland Park site.*
- *An estimated volume of approximately 1700 m^3 of soils, potentially present at near surface depths on the redeveloped Headland Park Site, has been found to be unsuitable for use at a depth within 0.85 m of the surface. A further estimated volume of 10 500 m^3 of soils require relocation to a depth above the depth of groundwater.*
- *The current revised estimate of 12 200 m^3 of soils potentially requiring to be relocated within the Headland Park site is significantly less than then previous estimate of 20 000 m^3 of soils requiring remediation in JBS (2010a).*
- *Current additional investigations being undertaken in accordance with JBS (2010c) will provide additional data to enable further revisions to these estimates. It is considered that the additional data will result in the quantity of soils requiring relocation within the Headland Park Site to be further reduced.*

Revised Estimate of Extent of Remediation Works Required on Headland Park Site

In January 2011 JBS completed Pre Early Works Additional Environmental Assessment, Headland Park, Barangaroo, NSW (JBS, 2011a) in accordance with the abovementioned SAQP (JBS 2010c). Additionally in

[1] JBS Environmental (October 2010) '*Sampling, Analysis and Quality Plan Pre Early Works Additional Environmental Assessment Barangaroo Delivery Authority Barangaroo Headland Park and Northern Cove Hickson Road, Sydney NSW*' (JBS 2010c)

128 O'Riordan St Mascot NSW 2020
Tel +61 2 8338 1011 Fax +61 2 8338 1700 www.jbsgroup.com.au

February 2011, JBS revised the draft human health and environmental risk assessment (HHERA[2]) and the draft remedial action plan (RAP, revision F) for the Headland Park site. The additional assessment (JBS 2011a) included an assessment of all available environmental data against the revised risk-based criteria reported in the revised draft HHERA (JBS 2011b) and RAP (JBS 2011c). The data was summarised and included in JBS 2011a.

The extent of remediation is presented on the attached **Figure 13** taken from the revised RAP for Headland Park prepared in February 2011 (JBS 2011c). The revised draft RAP concluded:

> *The currently anticipated extent of in-situ contamination requiring remediation at the Headland Park Site shown in **Figure 13** by orange shading depicting soils considered inappropriate for use within 0.5 m of the final park surface. This is an approximate quantity of 1000 m^3. The soils as identified on **Figure 13** and shown by blue shading, present over an approximate area of 6 000m^2, are considered inappropriate for use as growing medium.*
>
> *In addition, a minor, isolated and localised area of tar impact was identified during geotechnical investigations at sampling location shown as JBS312A on **Figure 13**. Based on visual observations recorded on the borehole log, it is anticipated that this comprises an approximate quantity of 100 m^3. Groundwater sampling and analysis has not indicated that significant groundwater impact is present underlying the Headland Park.*

As shown in **Table 1**, the estimate of the extent of remediation works required on the Headland Park Site has been revised using additional available site data and revised criteria.

Table 1: Revised Estimate of Extent of Remediation Works Required on Headland Park Site

Original Estimate (JBS 2010a) using limited data	Refined Estimate m^3 (JBS December 2010)	Revised Estimate m^3 (revised draft RAP, January 2011, JBS 2011c)
20 000 m^3	12 200 m^3	1 100 m^3

It is noted the 2011 revision of estimated extent of remediation works is based on data assessment in revised draft documents (as noted herein) that have not been endorsed by the Site Auditor, and which is also subject to the limitations noted in the relevant JBS reports and included in **Attachment 1**.

These estimates can be considered appropriate to estimate an indicative extent of remediation works where previous site data as collected by ERM (2007 and 2008) and DP (2010) is appropriate and representative of soils on the site.

Should you have any queries or require further clarification, please feel free to contact the undersigned on (02) 8338 1011.

Prepared by:

Sumi Dorairaj
Senior Environmental Consultant
JBS Environmental Pty Ltd

Reviewed/Approved by:

Matthew Bennett
Principal, Contaminated Land
JBS Environmental Pty Ltd

Attachments: 1. Limitations
2. Figure 13 from JBS Environmental (February 2011) 'Remedial Action Plan revision F'

[2] Revised HHERA refers collectively to the Human Health Risk Assessment and Ecological Risk Assessment prepared in February 2011 by JBS Environmental for the Headland Park Site.

128 O'Riordan St Mascot NSW 2020
Tel +61 2 8338 1011 Fax +61 2 8338 1700 www.jbsgroup.com.au

Attachment 1 – Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose. The findings presented in this report are based on previous investigations undertaken by others and the limitations which apply to those reports equally apply to this report.

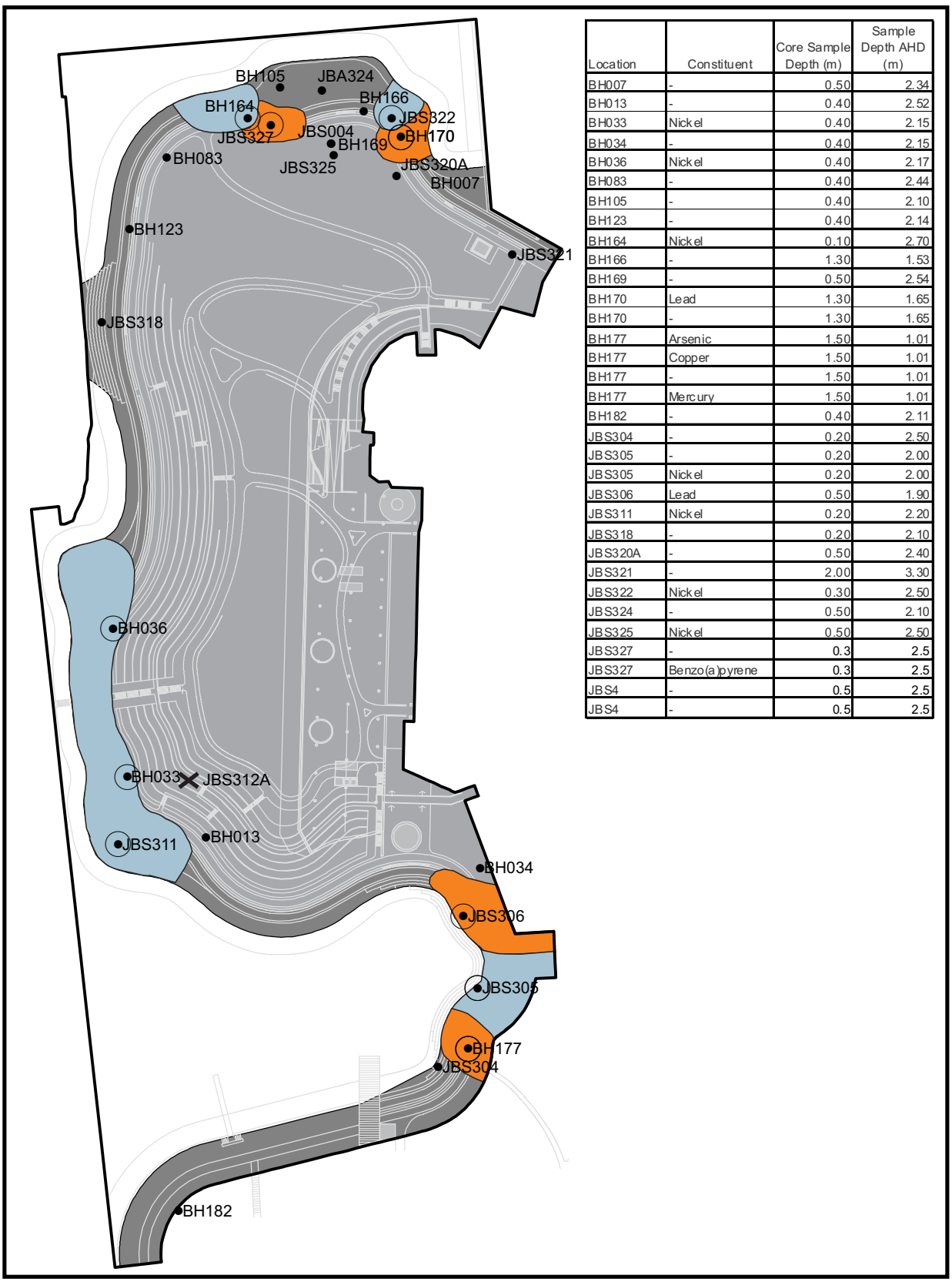
JBS Environmental Pty Ltd accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS Environmental Pty Ltd, and should not be relied upon by other parties, who should make their own enquires.

Limited sampling and laboratory analyses were undertaken as part of the investigations reviewed, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS Environmental Pty Ltd reserves the right to review the report in the context of the additional information.

Attachment 2 – Figure 13 from JBS Environmental (February 2011) 'Remedial Action Plan revision F'



Location	Constituent	Core Sample Depth (m)	Sample Depth AHD (m)
BH007	-	0.50	2.34
BH013	-	0.40	2.52
BH033	Nickel	0.40	2.15
BH034	-	0.40	2.15
BH036	Nickel	0.40	2.17
BH083	-	0.40	2.44
BH105	-	0.40	2.10
BH123	-	0.40	2.14
BH164	Nickel	0.10	2.70
BH166	-	1.30	1.53
BH169	-	0.50	2.54
BH170	Lead	1.30	1.65
BH170	-	1.30	1.65
BH177	Arsenic	1.50	1.01
BH177	Copper	1.50	1.01
BH177	-	1.50	1.01
BH177	Mercury	1.50	1.01
BH182	-	0.40	2.11
JBS304	-	0.20	2.50
JBS305	-	0.20	2.00
JBS305	Nickel	0.20	2.00
JBS306	Lead	0.50	1.90
JBS311	Nickel	0.20	2.20
JBS318	-	0.20	2.10
JBS320A	-	0.50	2.40
JBS321	-	2.00	3.30
JBS322	Nickel	0.30	2.50
JBS324	-	0.50	2.10
JBS325	Nickel	0.50	2.50
JBS327	-	0.3	2.5
JBS327	Benzo(a)pyrene	0.3	2.5
JBS4	-	0.5	2.5
JBS4	-	0.5	2.5

0 25 50 100 m
Scale: 1:2,500 (A4)

Datum: MGA94 Zone 56

A4			
D3	Revision	RF	09-2-2011
D2	Revision	RF	07-2-2011
D1	Original Issue	RF	20-1-2011
Rev	Description	By	Date

Legend:
- Extent of Clay Layer
- Site Boundary
- Material unsuitable to remain in the top 0.5 m of the finished park profile
- Material unsuitable for use as a growing medium
- Tar Impact
- Sample Location
- Exceedance

JBS ENVIRONMENTAL

Figure 13: Areas of Soil Requiring Relocation

Client: Barangaroo Delivery Authority

Project: Barangaroo Headland Park

Job No: 41181

File Name: 41181_13 (D3)