

APPENDIX 12

Letter from WSP re construction issues



Our ref: 2668.02L01

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Barangaroo Delivery Authority (BDA)
Attention: Julian Ardas
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Dear Julian

**Subject: BDA - Headland Park & Northern Cove- Main Works Project
Application: Submissions Report Program**

At the request of the Barangaroo Delivery Authority, WSP Environmental and Energy (WSP) has reviewed submissions for the above project made under the Part 3A Planning Approvals Process and provides the following responses to issues raised in these submissions:

City of Sydney

There do not appear to be any issues raised in relation to soil and water.

Department of Environment, Climate Change and Water (DECCW)

1. Human Health and Ecological Risk Assessment (HHERA). This has not been provided to DECCW as yet and as a consequence they are unable to make any comments in relation to the usage of water on the site. We understand that BDA proposes to submit the draft as part of the response to the Submissions report.
2. Construction Phase Monitoring. We note the comments that have been made. Barangaroo Delivery Authority will need to establish pre construction water quality levels as a matter of priority.
3. We acknowledge DECCW's requirement for a consolidated Soil and Water Management Plan.

The following points are in response to the matters raised by DECCW for the construction phase:

4. Discharge Limits. The 53µS/cm that DECCW has highlighted has been sourced directly from the Worley Parsons report dated June 2010. WSP can only report on the data that is presented in the Worley report.
5. Section 3.11. The reference to the ANZECC recreational water quality guidelines is incorrect. The correct reference should be the ANZECC protection of aquatic ecosystems marine waters guidelines for the protection of 95% of species which is used earlier in the WSP report.
6. Table of Limits Attachment 2. It appears that DECCW have used the ANZECC marine waters guidelines for the protection of 95% of species for the majority of the analytes required to be monitored. However, we have the following comments on the contents of the table:
 - i) The value for Arsenic at 2.3 µg/L appears to be far too low. Whilst there is no marine value for Arsenic, DECCW has selected the low reliability trigger value. The basis for the use of the low reliability values is that

further investigations need to be undertaken to determine the risk. These values should not be selected as absolute values when determining in this instance, discharge limits. In fact ANZECC quite clearly states that low reliability figures should not be used as default guidelines. To demonstrate the point that the level set may be far too low, the drinking water criteria is 7 µg/L. For Arsenic we recommend that perhaps ambient levels be determined first and then the criteria determined from these results. The freshwater criteria of 24 µg/L is possibly a more appropriate level to use as a default value.

- ii) Benzene (B). A value of 500µg/L has been selected, which is the 99% trigger level for marine waters. A 99% trigger level is usually selected for an area with very high ecological value such as a marine park. Given that Sydney Harbour is a slightly to moderately disturbed system and to be consistent with other selected criteria, 700µg/L should be used.
- iii) Ethylbenzene, Toluene, Xylene (TEX). Low reliability trigger values have been selected and which WSP again emphasise need to be used with caution. Also the freshwater trigger value has been selected for ethylbenzene over the marine, with no explanation as to why the freshwater guideline has been chosen.
- iv) Total Petroleum Hydrocarbons (TPH) C₆₋₉. In the absence of any guideline limits, the value has been set at 20µg/L which is the reporting limit for laboratories. However, the lowest value for m Xylene is 75 µg/L, which is a component of the TPH C₆₋₉ fraction. Surely the minimum for TPH C₆₋₉ should be 75 µg/L and realistically should be higher as the BTEX components do not usually occur in isolation.
- v) TPH and Oil and Grease. The allowable value for oil and grease is 10 mg/L which is inconsistent with the very low levels for TPH fractions.
- vi) Napthalene. The same comment applies as with Benzene. The 99% trigger value has been selected instead of 95%.

In addition to the above, we also provide responses to the following public comments in relation to information that is provided in the WSP report:

Jane Irwin

1. Questions the ability of Northern Cove to effectively flush water. The SMEC report dated 18 August which was incorporated into the WSP assessment indicates that flushing will be little changed from present. The following is the extract from the SMEC report 'The overall change in estuary volume as a result of the new shoreline configuration would be negligible when compared with existing conditions.' WSP also understands that this aspect has also been addressed in the Peter Masters report where the flushing time for the Northern Cove is 2.2 days.

Irene Doutney

1. Impact of heat exchange on the marine environment. The Worley Parsons report on Marine Ecology shows the paucity of ecological features on the harbour floor adjacent to the existing wharf. The proposed heat exchange concept (pre-design) extracts and discharges water from the north of the park into the main harbour channel ensuring a hydrographical environment conducive to rapid dispersion. The design parameters noted in the WSP report are based on proven (and authority approved) systems that are already in use in the Sydney Harbour environment (including the biocide specifications). Doutney refers to a published paper which makes comparison with other forms of heat exchange systems. An analysis of the alternative systems can form part of the design process.

We trust the above meets your requirements.

Yours sincerely

A handwritten signature in black ink, appearing to be "Peter Moore", written over a horizontal line.

Peter Moore
Principal Engineer
WSP Environment and Energy