

19 July 2017

Michael Barry  
Senior Principal Engineer  
Market Lead – Water Quality  
Technical Innovation Manager  
BMT WBM  
PO Box 423  
Spring Hill Qld 4004

Dear Michael

#### **Assessment of West Culburra Concept Plan**

Thank you for the opportunity to assess the revised concept plans for West Culburra as forwarded to the NSW Department of Planning and Environment by Martens and Associates on June 8, 2017. I have reviewed their information and have identified some issues as outlined below.

#### **Development Proposal Modifications**

Without seeing a detailed concept plan, it is difficult to reconcile the proposed changes, especially with respect to issues such as roof area per lot size, road imperviousness and the like. While it was expected that some changes to the development layout would have been required, I cannot understand how the proposed changes relate to the final development and therefore have led to significant improvements in water quality performance. I therefore cannot agree that these changes would have led to the scale of improvements needed to achieve a Neutral or Beneficial Effect in the MUSIC model.

#### **Water Quality Model Modifications**

The proposed changes to the model in terms of the assumptions regarding the vegetated zones assimilating some of the pollutant loads are supported.

As noted above, the changes to the road and roof node impervious areas are not validated in any way in respect to the actual development layouts, therefore I cannot evaluate whether this is an improvement in the modelling. I was not able to view the MUSIC model itself, so the changes in the wetland sizing in catchment O6 were not able to be compared to actual configurations proposed in the development layout.

#### **Revised Treatment Train**

The proposed treatment train has little information with which to verify suitability to the subject site. This includes a lack of information around the configuration of the rainwater tanks, stormwater harvesting demand, and the bioswales.

Having bioswales discharging into Enviropods and Stormfilters is not appropriate as the MUSIC nodes provided by Stormwater 360 for their products (Enviropods and Stormfilters), are not set up to function correctly for

treated stormwater inputs. I therefore suspect that the model is "double-counting" treatment performance and this may be why the proponent has been able to demonstrate a NorBE compliance.

The treatment train for Lake Wollumboola catchment is not likely to be appropriate to protect that water body from future changes, as while the loads may be reduced to levels similar to the existing, I would be concerned with the concentrations of pollutants entering the lake during higher flow events not being adequately reduced.

### **Conclusions**

I have reviewed the information supplied by the proponent to address the peer review comments. From this, I do not support their conclusion that the modifications would results in NorBE being achieved as there is insufficient detail and incorrect configurations of the proposed treatments to provide any confidence that they would perform as outlined in the Martens report.

I hope that this is satisfactory and please feel free to contact me if I can be of further assistance.

Yours faithfully



**Tony Weber**

National Lead – Water Modelling

m 0476 829 565

e [tony.weber@alluvium.com.au](mailto:tony.weber@alluvium.com.au)