MARINE POLLUTION RESEARCH PTY LTD

Marine, Estuarine and Freshwater Ecology, Sediment and Water Quality Dynamics

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Mr Ernest Dupere
Director
Benedict Industries
PO Box 431
FRENCHS FOREST NSW 1640 17 April 2015

Dear Ernest,

UPDATE OF AQUATIC ECOLOGY IMPACT REPORT FOR GEORGES COVE MARINA

I am writing in regard to your request for me to reconsider my original aquatic impact assessment for the Georges Cove Marina EIS (dated January 2012) in light of the time since I prepared my original impact assessment in 2010 (MPR 2010 which is an appendix of the above EIS).

I have made a short site visit on 14 April 2015 to inspect the current state of the aquatic ecology habitats that I had described in my original report. I made the visit at low tide so that I could see as much of the river intertidal and shallow sub-tidal habitats as possible. The following summarises my finding in relation to my earlier assessment:

In relation to the quarry site ponds as described in Section 3.3.1 in MPR (2010), there have been major changes since the original survey shown in Figures 1 and 3 in MPR (2010), with the two southern pools either filled or much reduced in size and the northern pool reshaped. There is active dredging and excavations underway and the waters are quite turbid as a result:

- As there is no physical connection to the river there are no implication of this change in water quality for the adjacent river ecology.
- The ponds still support fish life as evidenced by small fry observed in the shallows (including plague minnow which is a listed freshwater pest species).
- Sediment mobilisation by bottom feeding fish was also observed, most probably by carp, which is also a listed freshwater pest species.

- Both plague minnow and carp were reported from the internal ponds for the original assessment. They occur in the Georges River and are likely to have been introduced during pumping from the river to the dredge ponds.

In relation to the stormwater drain/creek that borders the site along the western and southern sides, there has been no change to the relationship of the Benedict site to that creek, in that there are no connections between site drainage or the site internal ponds with the stormwater drain. Drainage works from the housing development to the west of the Benedict site would appear to have been completed since the 2010 survey and there would appear to be overflow drainage from that development sedimentation ponds to the creek. In comparison to the habitat descriptions provided in Section 3.3.2 of MPR (2010), the following observations were made:

- The lower estuarine portion of the creek above and at the confluence with the Georges River still supports mature mangroves (both Grey Mangrove *Avicennia marina*, and the River Mangrove *Aegicerus corniculatum)*.
- In contrast to the 2010 survey, where the creek held more water and supported a relatively complete fringing reed habitat, the creek was generally dry and there was little or no *Phragmites* or *Juncus krausii* along the creek edge.

In relation to the Georges River bank river aquatic habitats at the Benedict site, there would not appear to have been any changes to the river riparian bank in that it remains a mélange of engineered bank works and dumped masonry as previously described in Section 3.3.3 with the following minor changes noted:

- The mangrove stand at the creek confluence immediately south of the site remains the same as previously described.
- The bank slumping just up from the southern boundary has provided intertidal habitat for *Phragmites* reeds that were not reported from this site previously.
- There does not appear to have been any change to the next clump of mangroves to the north (between sites GR2 and GR1 on Figure 3 in MPT 2010).
- There are still isolated mangoves along the northern bank as reported previously with at least one undercut and killed leaving only a patch of air roots.
- Whilst several of the *Zostera* seagrass patches reported in 2010 were not noted for the present survey a single patch of *Zostera* was observed.

It is concluded that there have not been any substantial changes to the aquatic ecology of the river or creek along the eastern, southern and western boundaries of the Benedict Site and that the changes in aquatic ecology and water quality observed in the ponds within the site are as expected

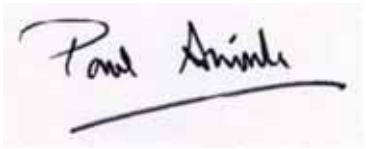
with the site ponds and their banks being actively dredged and shaped, as described in Section 4.1.1 of the MPR (2010) report.

I have also reviewed the discussion of possible listed and threatened species and the original conclusions remain the same in that no species as listed under the NSW *Fisheries Management Act* or under the Commonwealth *EPBC Act* are reported from the locality and none are expected.

On the basis of my April 2015 field inspection and review of the MPR (2010) report, I am satisfied that the descriptions of the aquatic habitats provided in Sections 3 plus the impact assessment and mitigation measures provided in Sections 4 and 5 of the MPR (2010) report remain relevant, and aquatic ecology impact does not require any additional assessment.

I trust that this is sufficient for your needs at this time. Please let me know by return e-mail if you require further clarification.

Yours Sincerely,



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