

Technical Note

Project Number: J16021 Project Name: CSD Project, Revised Draft EIS

Date: 14/12/2017 Doc Ref: TN-J16021-6 Rev 1

Client: Flanagan Consulting Group

Subject: Dredge Material Placement Assessment – Review of Additional DMPA Capacity to meet WQ Criteria

In DMPA assessments completed by BMT for the Cairns CSD project, it has been identified that water quality exceedances for the tailwater from the DMPA may be exceeded in the final 1-2 weeks of the dredging program as the pond nears capacity with solid material. BMT identified a number of management measures that could be implemented to address these exceedances, including some that involved reduction in the dredge production rates (such as temporary stopping dredging and disposal works or reducing the average daily production rates and hence reducing the DMPA inflow rate to increase tailwater retention times).

We have been requested to provide a high level assessment of the additional capacity that would be required to keep the tailwater within the water quality triggers, without the need for reducing dredge productivity.

The assessment has been completed through a review of the DMCAT modelling outputs from the previous studies completed for the project. BMT reviewed the rate of increase of material at the concentration threshold of 10g/L (ie. hindered settling regime, but less dense than fluid mud). An assessment of what final volume would be required, such that the volume of clear and slightly dirty water at 80 days (when the exceedances start to exceed the 100 mg/L water quality criteria for significant periods of time), is preserved at completion of the dredging.

The review indicates that the additional capacity required to achieve is between 65,000m³ and 130,000m³. Across the ~35Ha MPA site, the additional capacity equates to a required water level increase of between ~180mm and 370mm. This additional assessed capacity (water level) could be provided via a number of methods, including:

- Increased perimeter bund heights, noting this may be constrained by other site factors
- Temporary reduction on the available freeboard during this relatively short period of dredging. This would be a managed process taking into consideration forecast weather and rainfall conditions around the relatively short period when it would be required.