

**PACIFIC ENVIRONMENTAL
SERVICES PTY LTD**

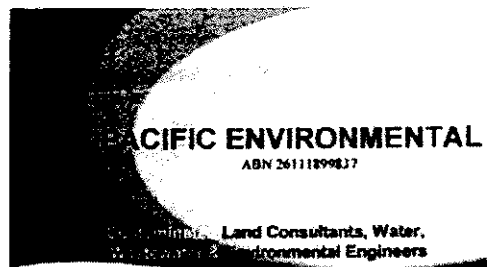
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SYDNEY UNIVERSITY PROJECTS DIVISION

Services Building
22 Codrington Street,
DARLINGTON NSW 2008
ATTENTION: Mr. Gareth Williams

15th October 2012

Dear Sir,

Reference: Camden Campus existing STP Capacity

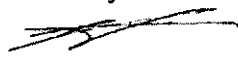
The existing sewage treatment plant (STP) at the Sydney University Camden Campus has been the subject of a capacity review, which we have reported upon previously. The STP has a capacity of nominally 55.7m³/day. At first glance this compares poorly with the estimated hydraulic load of 204.8m³/day. However the existing aerobic BOD conversion capacity is nominally 18.3kg/day as compared to the estimated organic load of 35kg/day.

The existing STP is capable of conversion of nominally 50% of the influent organic load, when measured as BOD₅. This results in a treated effluent organic strength of 85.6mg/L or 17.5Kg/day as BOD₅.

The existing maturation lagoon is oversized, in that even at the 2030 load 3,966 m² of the available 38,400m² is required for disinfection and wet weather storage. This leaves 34,434m² available for aerobic non mechanically aerated treatment. Utilizing a conservative loading rate of 20kg/ha/day of BOD₅ loading means that 0.875ha or 8,750m² is required to reduce the BOD₅ to an acceptable irrigation standard of 20mg/L. The required 8,750m² is well less than the available surface area.

The result of the above calculations means that the existing STP has the capacity (when taking into account the existing maturation lagoon) to continue to treat the existing raw waste load in the short term. An inspection of the lagoon has revealed that the carry-over biomass is accumulating in the inlet area of the lagoon diminishing its capacity in the longer term. The estimated life expectancy of the existing situation, without de-sludging the lagoon or upgrading the STP is 6 -9 months before odours become a problem. In the interim the algal blooms will persist in the summer months causing increased maintenance of the irrigation system.

If you have any questions please do not hesitate to contact Steve Smith on 0416270451,
Yours faithfully



Steve Smith

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Director Pacific Environmental**