

WASTEWATER MANAGEMENT – FACT SHEET

Puni School – Pukekohe

Puni School is a rural school south of Auckland. The existing wastewater system had begun to present a health hazard to the children so the Ministry of Education called for a new collection, treatment and disposal system. The engineer to the project decided that the packed bed technology was most suited to this situation.



Figure 1. Puni School – Treatment plant and irrigation area.

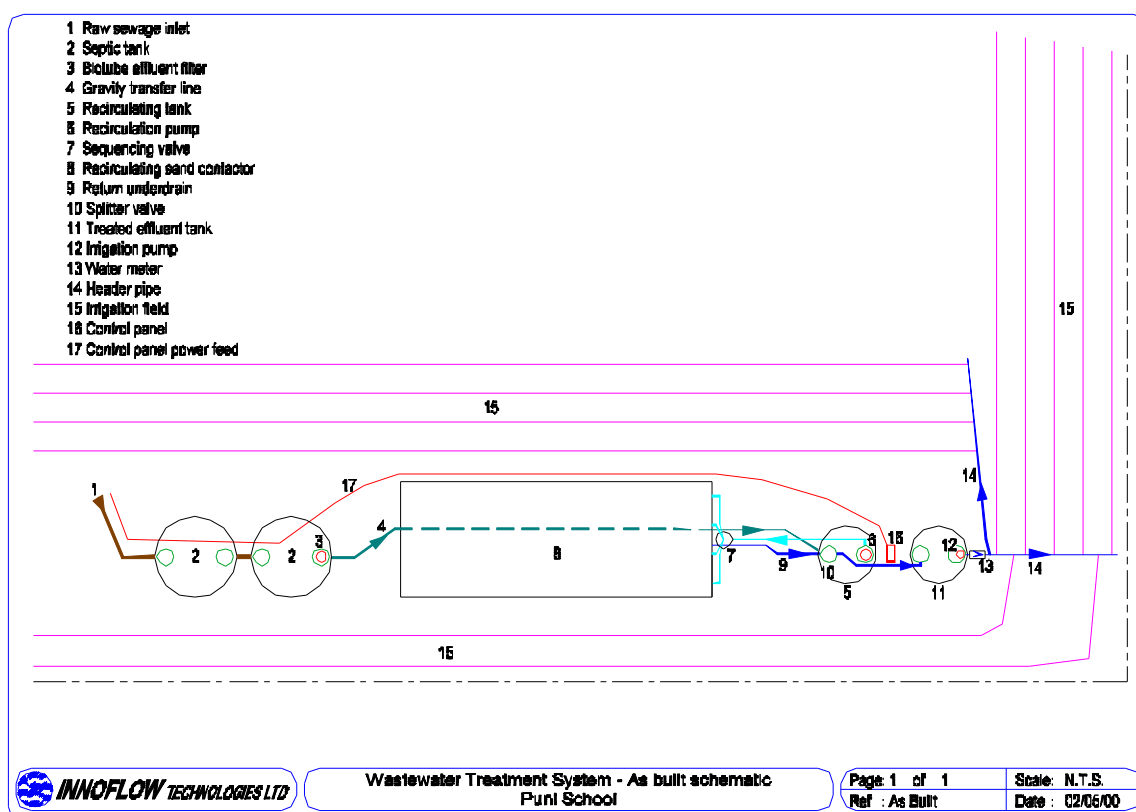
The recreational areas available to this school were small in comparison to the school's roll. Therefore it was important that the wastewater system did not reduce the recreation areas too much. The Pro-Tech rPBR was sized to fit in the most suitable site and a previously unused bushy area was cleared to be replaced by a planted irrigation area that would provide a noise buffer from the road.

The position of the treatment plant was a considerable distance from the wastewater producing areas of the school. So it was decided to use a primary interceptor tank near the point of production fitted with a Biotube™ effluent filter to provide primary treatment and screening of solids. This allowed the use of small bore polyethylene (63 mm) to deliver the screened effluent over the low grade distance to the treatment plant.

**Table 1. System Summary**

System Component	Specification	Comment
Design Flow	8.5 m ³ /day	Designed for future expansion – currently operating at ~50% capacity
Interceptor Tanks	13 m ³	Biotube™ model FT1254
Main Line Size	63 mm OD (MDPE)	This larger size was used to ensure adequate flow rate over the very low grade to the plant
Recirculation Tank Size	9 m ³	Single chamber
Recirculation Pump	1 x Orenco turbine submersible	Full 5 year unconditional warranty
Packed Bed Reactor Area	47 m ²	Shaped to fit site
Treated Effluent Tank Size	9 m ³	Single chamber
Discharge Pump	1 x Orenco turbine submersible	Full 5 year unconditional warranty
Disposal Field	900 m ²	Only installed for curent capacity. This field will be expanded as the school grows

A planted area, using New Zealand natives, was created along the front boundary of the school. Previously this had been a row of unsightly trees. The school was able to have these trees removed and chipped and use the resource created from the old trees to provide a bark cover for the planted area.

**Figure 2. Schematic as built of the wastewater treatment system.**