

# CONSENT MONITORING REPORT

Consent Name	Raglan Wastewater Treatment System
Consent No.	971390
Year	2008-09
Date	1 Oct 2009
File No.	55 06 17M

## REPORT/COMMENTS

### Raglan Wastewater Treatment System

The Waikato District Council holds resource consent to discharge up to 2600 cubic metres of treated wastewater per day into the Raglan Harbour. The consent was issued on 1 Feb 2005 and has an expiry date of 14 February 2020.

The data summarises annual monitoring test results for the parameters monitored at the consented site.

A review of the consent conditions during the 2008-2009 reporting year indicated that the treatment system is closer to meeting the water quality parameters of the resource consent than in the previous period and is likely to be having no more than a minor effect on the receiving environment.

Discharge water quality parameters generally improved on the results of the previous reporting period. The exception to this was suspended solids.

For 17 days in July, August and September 2008 there was pumping outside the consented tidal times due to extreme weather and high inflows into the treatment plant. Pumping was done to avoid overtopping of the treatment ponds and Environment Waikato were notified of these events at the time. The same period saw 15 days where the maximum discharge volume was exceeded.

The median maximum daily flow was estimated 1858 cubic metres per day over the total reporting period. The monthly outflows for the reporting period are considerably higher than the previous period.

### Summary of discharge quality to Raglan harbour

#### *Biochemical Oxygen Demand Non-Compliant*

Similar results to the previous year. The Median value for the 2008-2009 year was 11 g/m<sup>3</sup> down from 13 g/m<sup>3</sup> in the previous period. Maximum recorded value was 29g/m<sup>3</sup> up from 20 g/m<sup>3</sup> for the previous year. The 90<sup>th</sup> Percentile value was 20 g/m<sup>3</sup> largely unchanged from the previous year. The reduction of BOD and nutrient levels expected through the process is not occurring.

### *Non-compliant Suspended Solids*

Performance similar to the previous period. The Median value for the 2008-2009 year was 58.5 g/m<sup>3</sup>, down from 62 g/m<sup>3</sup> in 2007-2008. Maximum recorded value was 160 g/m<sup>3</sup> in March 2009. The 90<sup>th</sup> Percentile target was exceeded at 100 g/m<sup>3</sup>, up from 81 g/m<sup>3</sup> in 2007-2008. Suspended solids levels have continued to exceed the limits.

### *Faecal Coliforms, Partially Compliant*

Significant improvement on previous period due to UV system. The Median value for the 2008-09 year was 2 MPN per 100mL. The Median reported for 2007-08 was 1425 MPN per 100mL. Maximum recorded value was 1100 MPN per 100mL. However there were several suspect high values like this that did not fit the trend of other results in the same months. If these are removed the maximum FC value would be 74 MPN per 100mL. The 90<sup>th</sup> Percentile value was 10 MPN per 100mL

### *Enterococci Compliant*

Significant improvement on the previous year due to UV system. The Median value for the 2008-2009 year was 20 MPN per 100mL, for the period 17 December 2008 to 30 January 2009. The Median value for the 2008-2009 year was 8 MPN per 100mL. The Median value for the 2008-2009 year, less several suspect high values that do not fit the trend of other results from the same month, was 2 MPN per 100mL. The 90<sup>th</sup> Percentile value for the six week summer bathing period was 91 MPN per 100mL. The 90<sup>th</sup> Percentile value for the entire reporting period was 250 MPN per 100mL. Mean 41 MPN per 100mL for the summer bathing period, Mean 556 MPN per 100mL for the entire reporting period, Maximum recorded value was 13000 MPN per 100mL. There were several high results that did not fit the trend. During service of the UV unit bird skeletons, accumulated marine snail shells and small stones have been found. These may be connected with the high results.

### **Summary of Treatment Issues and Improvement Plans**

The results for this year are markedly improved on the previous period in most areas except suspended solids. However the current system is still not operating to its full potential in a number of areas and a number of areas will be addressed in the upcoming period.

- There is a problem with the Aquamats in the primary and secondary ponds. They have not developed a full biological growth and it appears the media has been contaminated with material that inhibits biological growth. WDC sought advice from the supplier meridian Aquatic and they arranged the representative from Aquamats USA to visit the site in July 2008. The report subsequently received has confirmed the presence of heavy metal depositing on the Aquamats. The source of this contamination could be fly dumping of toxic material such as marine paint fouling inhibitors in the sewer system or by septic tanker truck disposal. An enquiry with the local WDC manager seems to discount this theory as unlikely. An alternate possibility is that during the construction of the new sludge storage pond the excess liquids pumped from this storage pond had been contaminated by sludge from the base of the decommissioned old ponds. It is thought that the clay particles and associated heavy metals have created a layer of material that is inhibiting normal

growth on the Aquamats especially in the primary ponds. The problem has not self-corrected through the reporting period so the WDC now intends to create a project plan to renovate the Aquamats.

- The discharge compliance with the Suspended Solids requirement has not been achievable. It has been suspected that the final holding pond is not improving elevated SS levels due to lack of settlement action. It was reported in the last Annual Report to EW that final suspended solids levels had been degraded by difficulties controlling the minimum level of the final roadside holding pond. A plan was implemented to reconfigure the UV shed and final pump station level controls to reduce this effect. However this did not significantly improve the results. During the 2009-2010 period WDC intends to create a project plan to modify the influent pipe manifold to reduce influent turbulence scouring that may be disturbing the holding pond bed.
- The anaerobic ponds have been bypassed due to excess odour production and are now effectively removed from the treatment process. If another solution can be devised to use them without releasing odours they will be recommissioned.
- The discharge flow meter recording of flows and discharge volumes is not providing trustworthy data. In the 2009-2010 period the outfall pipe will be replaced. It is intended that this project will also renew the old pipework between the pump station and the new UV building. This will give an opportunity to replace the flowmeter and make other improvements to the mechanical elements.
- During the reporting period a number of service visits to the UV unit by the manufacturers representative have been required due to damage from detritus pumped into the reactor. Bird skeletons, accumulated marine snail shells and small stones have been found. The damage to the lamp wiper system and lamp sleeves prompted us to do a thorough pipe inspection but no fault was found. Subsequently we have cleaned similar material out again. The pipe work upgrade between pumps and UV building will allow us to make a modification that reduces the potential for this damage.
- In the 2009-2010 period WDC will conduct an investigation of limitations and problems with the entire telemetry system. The following year it is intended that upgrade recommendations for improvement will be put in place.
- WDC sought further advice from the process designer Gilles Altner from G2e and have received a number of suggestions for improvements on 12 August 2009 that will be utilised in the upcoming period.
- At the date of reporting the final operations manual and site as built construction drawings have not been received by WDC and therefore have not been able to satisfy the requirements of condition 3 (part iii) of the consent by providing a written report to Environment Waikato demonstrating “that works have been carried out in accordance with accepted civil engineering practice and are such as to meet the conditions of the consent”. It is expected that this requirement will be completed at

the conclusion of the replacement outfall project, before the end of the 2009-2010 reporting period.

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**PLANTS ENGINEER**

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**ACTING GENERAL MANAGER**  
**WATER & FACILITIES**