

# CONSENT MONITORING REPORT



Your Community Partner

Consent Name	Huntly Wastewater Treatment System
Consent No.	951126
Year	2008-09
Date	30 September 2009
File No.	55 06 29M

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## REPORT/COMMENTS

### Huntly Wastewater Sewage Treatment Discharge 2008-2009

Resource consent 951126 authorises the Waikato District Council to discharge up to 6000 cubic metres per day of treated domestic wastewater from the Huntly oxidation pond and wetland system to the Waikato river. The application for the current consent was made in 1995 and expires on 30 September 2009.

The Huntly wastewater treatment system generally showed a continuing difficulty in meeting the discharge consent conditions over the summer period. In addition the results show that maximum daily discharge volumes were exceeded in the winter months due to very heavy local rainfall and infiltration to the wetland from backed up local drainage. During this period the North Island experienced significant and unusually heavy wet weather storm events that contributed to infiltration beyond the normal flow range of the treatment plant and also localised flooding into the WWTP wetlands from the surrounding area.

The maximum daily flow was 7152 cubic metres per day in August 2008. The median maximum was 4145 cubic metres per day over the total reporting period. The monthly outflows for the reporting period are considerably higher than the previous period. This is to be expected as the 2007-2008 period was very dry.

In general the overall performance picture has improved especially for nutrient removal and faecal coliforms.

### Summary of Non-compliance in Treatment Performance

#### *Non-compliant Suspended Solids*

The 90<sup>th</sup> Percentile target was exceeded at 65.3 g/m<sup>3</sup>. However this was down from 86.1 g/m<sup>3</sup> in 2007-2008. The maximum recorded value was 81 g/m<sup>3</sup> in January 2009 when flows were the lowest monthly average for the reporting period. Much the same as the 89 g/m<sup>3</sup> in 2007-2008. Minimum 9.6 g/m<sup>3</sup>, Mean 43.2 g/m<sup>3</sup>, down from 48.3 g/m<sup>3</sup> in 2007-2008. Median value for the 2008-2009 year was 42 g/m<sup>3</sup>, much the same as the 41.5 g/m<sup>3</sup> in 2007-2008.

#### *Non-compliant Dissolved Reactive Phosphorous*

A considerable improvement on previous year. The 90<sup>th</sup> Percentile value was 6.31 g/m<sup>3</sup> down from 10.8 g/m<sup>3</sup> in 2007-2008. Maximum recorded value did not exceed the maximum

limit at 6.4 g/m<sup>3</sup> in February, down from 11 g/m<sup>3</sup> in 2007-2008. Minimum 1.3 g/m<sup>3</sup>, Mean 4.45 g/m<sup>3</sup>, down from 6.9 g/m<sup>3</sup> in 07-08. Median value for the 2008-2009 year was 4.85 g/m<sup>3</sup>

#### *Compliant Total Ammoniacal Nitrogen*

This improved upon the previous year. The 90<sup>th</sup> Percentile value was 8.78 g/m<sup>3</sup>, down from 12.8 g/m<sup>3</sup> in 07-08. Maximum recorded value was 12 g/m<sup>3</sup> in March which was the only sample that exceeded the consented limit. Down from 14 g/m<sup>3</sup> in 07-08 where a value 10 g/m<sup>3</sup> or greater was recorded in four separate months. Minimum 1.5 g/m<sup>3</sup>, Mean 4.49 g/m<sup>3</sup>, down from 6.8 g/m<sup>3</sup> in 07-08. Median value for the 2008-2009 year was 3.8 g/m<sup>3</sup>.

#### *Non-compliant Faecal Coliforms*

Considerable improvement on previous year. Median value for the samples taken as per condition 14 was 3300 MPN per 100mL down from 7300 g/m<sup>3</sup> in 2007-2008. Median value for the 2008-2009 year was 1600 MPN/100mL down from 2550 in 2007-2008. The 90<sup>th</sup> Percentile value was 5120. This is an order of magnitude improvement on the previous year. Minimum 100 MPN/100mL in July, Mean 2376 MPN/100mL, Maximum recorded FC value was 7200 MPN/100mL in February. This is an order of magnitude improvement on the previous year.

#### *Non-compliant Biological Oxygen Demand*

Not greatly improved on the previous reporting period. The 90<sup>th</sup> Percentile target was exceeded at 24.0 g/m<sup>3</sup> up from 21.8 g/m<sup>3</sup> in 2007-2008. Nine from 20 samples taken over the reporting period exceeded the limit of 20 g/m<sup>3</sup>. The maximum limit was not exceeded at 26 g/m<sup>3</sup> in February 2009, down from 47 g/m<sup>3</sup> in 2007-2008. Minimum 7.3 g/m<sup>3</sup>, Mean 16.1 g/m<sup>3</sup>, down from 17.3 g/m<sup>3</sup> in 07-08. Median value for the 2008-2009 year was 14.5 g/m<sup>3</sup> up from 13.5 g/m<sup>3</sup> in 2007-2008.

### **Summary of Nutrient load discharged to Waikato River**

#### *Total Nitrogen*

Median value for the 2008-2009 year was 21.5 kg/day. The 90<sup>th</sup> Percentile value was 27.7 kg/day. Maximum recorded monthly total was 29.6 kg/day in June 2009. Minimum recorded monthly total was 18.5 kg/day in November 2008. Mean 22.8 kg/day.

#### *Total Phosphorous*

Median value for the 2008-2009 year was 11.5 kg/day. The 90<sup>th</sup> Percentile value was 14.1 kg/day. Maximum recorded monthly total was 20.6 kg/day in June 08. Minimum recorded monthly total was 7.0 kg/day in November 2008. Mean 11.3 kg/day

## Summary of Progress of Treatment Plant Upgrade

A significant upgrade project for the Huntly wastewater treatment ponds has been largely completed. The treatment upgrade steps implemented include desludging of pond one, the addition of automatic primary screening, additional influent aeration, curtains in the primary pond to prevent short circuiting and a separate tanker truck septage receiving system to reduce influent load.

Ongoing difficulties with the operation of the septage receiving machinery have been managed by releasing the septage directly into the new sludge pond rather than directly into pond 1. Ongoing problems with ragging of the new aspirating aerators at the inlet end of pond 1 have delayed successful utilisation of this process improvement. It is expected that the turbulence caused by the aspirating action will eventually cease to lift older rags from the pond floor and these aerators will be able to be used appropriately.

The wetland continues to contribute to the overall improvement of the discharge quality. The attached data tables demonstrate there is a general quality improvement from the pond 2 outlet and the wetland outlet sample values recorded. The wetland also contributes to significant buffering of the final discharge pH thereby ensuring the toxic NH<sub>3</sub> form of the ammonia in the discharge plume to the river remains very low.

Ongoing maintenance of the wetland plants and bund plus sludge removal remains problematic due to the physical limitations of the site. Removal and replacement of old biomass and desludging are required if the wetlands are to remain long term.

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