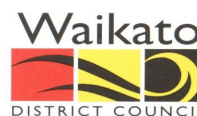


CONSENT MONITORING REPORT



Your Community Partner

Consent Name	Ngaruawahia Wastewater Treatment System
Consent	100972, 100973, 100974
Year	2008-09
File No.	55 06 26M
Date	30 September 2009

District Office
15 Galileo St, Private Bag 544
Ngaruawahia New Zealand
Ph 07 824 8633
Fax 07 824 8091
Call Free 0800 492 452
www.waikatodistrict.govt.nz

Area Offices
Huntly 07 828 7551
Raglan 07 825 8129

COMPLIANCE WITH NGARUAWAHIA RESOURCE CONSENTS 100972, 100973, 100974 – 2008-2009

The Waikato District Council holds the above resource consents associated with the treatment and discharge of wastewater from the Ngaruawahia sewage treatment plant located on the outskirts of the settlement. The resource consents issued by Environment Waikato include the following:

- 100972 To discharge up to 5000 cubic metres per day of treated wastewater from the plant after treatment subject to a number of conditions.
- 100973 To discharge contaminants to air from the wastewater treatment plant.
- 100974 To construct and maintain an outflow diffuser on the bed of the Waikato River for the discharge of treated domestic wastewater.

The Ngaruawahia wastewater treatment system generally showed a continuing difficulty in meeting the treatment discharge consent conditions, especially over the summer period.

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 90th Percentile target was exceeded at 112 g/m³. This was up from 39 g/m³ in 2007-2008. Maximum recorded value was 120 g/m³ in November 2008 and February 2009. Minimum 4.7 g/m³, Mean 49 g/m³, up from 22 g/m³ in 07-08. Median value for the 2008-2009 year was 39 g/m³, up from 22 g/m³ in 2007-2008.

Partially-compliant Dissolved Reactive Phosphorous

Substantial improvement on previous year. The 90th Percentile value was 6.1 g/m³ down from 9.98 g/m³ in 2007-2008. Maximum recorded value did not exceed the maximum limit at 6.5 g/m³ in February, down from 10 g/m³ in 2007-2008. Minimum 3.1 g/m³, Mean 5 g/m³. Median value for the 2008-2009 year was 5.4 g/m³, down from 7.7 g/m³ in 2007-2008. A 30% improvement.

Non-compliant Total Ammoniacal Nitrogen

This substantially improved upon the previous year. The 90th Percentile value was 26.2 g/m³, down from 30 g/m³ in 2007-2008. Maximum recorded value was 33 g/m³, Minimum 5.4 g/m³, Mean 15.9 g/m³. Median value for the 2008-2009 year was 15 g/m³, down from 25 g/m³ in 2007-2008. A 40% improvement.

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/m³ in 2007-2008. Median value for the 2008-2009 year was 9750 MPN/100mL down from 227000 in 2007-2008. The 90th Percentile value was 46000. This is an order of magnitude improvement on the previous year at 227000 MPN/100mL. Minimum 2000 MPN/100mL. Mean 23920 MPN/100mL. Maximum recorded FC value was 1×10^5 MPN/100mL down from 2×10^6 MPN/100mL the previous year.

Non-compliant Biochemical Oxygen Demand

Substantially unchanged on the previous reporting period. The 90th Percentile target was exceeded at 26.0 g/m³. Maximum recorded value was 60 g/m³ in Feb 2009 however this was an anomalous value compared to the total of eight samples taken from January to March. If that value is in 2008. Minimum 12 g/m³, Mean 17.06 g/m³, similar to 16.9 g/m³ in 2007-2008. Median value for the 2008-2009 year was 16 g/m³ down from 17 g/m³ in 2007-2008. A 6% reduction.

Summary of Nutrient load discharged to Waikato River

Total Nitrogen

Median value for the 2008-2009 year was 41.4 kg/day. The 90th Percentile value was 60.2 kg/day. Maximum recorded monthly total was 83.6 kg/day in July 2008. Minimum recorded monthly total was 12.4 kg/day in January 2008. Mean 41.5 kg/day.

Total Phosphorous

Median value for the 2008-2009 year was 9.1 kg/day. The 90th Percentile value was 11 kg/day. Maximum recorded monthly total was 16.2 kg/day in June 2008. Minimum recorded monthly total was 5.7 kg/day in November 2008. Mean 9.2 kg/day

Summary of Progress of Treatment Plant Upgrade

A significant upgrade project for the Ngaruawahia wastewater treatment ponds has been largely completed. The treatment upgrade steps implemented include desludging of the pond, addition of automatic primary screening, additional influent aeration and curtains in the oxidation pond to prevent short circuiting. Septic tank trucks are no longer received at the Ngaruawahia WWTP and are diverted to the Huntly WWTP which reduces influent load.

Ongoing problems with ragging of the new aspirating aerators at the inlet end of the pond have regularly interrupted 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 high Suspended Solids originating in the oxidation pond is due to the disturbance of the pond floor during the upgrade process or the influence of the powerful new aspirating style influent aerators. It is reasonable to link the increased SS levels to this phenomenon.

In retrospect this area of the pond may have benefited from desludging as with the old inlet area, however the depths appeared sufficient that this was deemed unnecessary during the project. It is assumed the problem will diminish in the upcoming reporting period 2009-2010. Much reduced SS results for August and September 2009 seem to confirm this assumption.

The Wetland and Rock filter performance is not good, however they do continue to contribute to the overall improvement of the discharge quality. The attached data tables demonstrate there is a general quality improvement from the pond outlet and the wetland outlet sample values recorded for BOD, SS and to some extent Faecal Coliforms.

The wetland also contributes to significant buffering of the final discharge pH thereby ensuring the toxic NH₃ form of the Total Ammonia in the discharge plume to the river remains lower.

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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H Cameron
PLANTS ENGINEER

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L Larsen
ACTING GENERAL MANAGER
WATER & FACILITIES