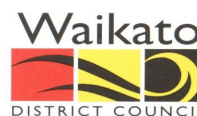


CONSENT MONITORING REPORT



Your Community Partner

Consent Name	Meremere Wastewater Treatment System
Consent No.	107031 – 107032 - 107033
Year	2009-10
Date	28 September 2010
File No.	55 06 14M / USV03

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REPORT/COMMENTS

Meremere Wastewater Sewage Treatment Discharge 2009-2010

Resource consent 107031 authorises the Waikato District Council to discharge up to 480 cubic metres per day of treated domestic wastewater from the Meremere oxidation pond and wetland system to the Waikato River. The current consent came into effect August 2003.

The Meremere wastewater treatment system generally showed a continuing difficulty in meeting the daily discharge maximum volume consent conditions. In addition the results show that maximum daily discharge volumes were exceeded regularly due to very heavy local rainfall and infiltration.

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 wetland and the area surrounding the UV building. The maximum recorded daily total flow was 3643 m³/day in June 2010.

The maximum average monthly flow was 712 cubic metres per day over the total reporting period. The 90th percentile maximum flow was 834 m³/day. The 90th percentile average daily flow was 485 m³/day. The median maximum daily flow was 475 m³/day. The median average daily flow was 275 cubic metres per day over the reporting period.

Summary of discharge quality to Waikato River

The Meremere sewage wastewater treatment system generally showed a slight improvement in environmental performance during the 2009-2010 year when compared to that of 2008-2009. An ongoing sampling programme has indicated that environmental compliance with the water quality parameters in the discharge was not achieved. The non-compliances associated with the consent included:

Partially-Compliant TKN

The Target Median was 12 g/m³. The 90th Percentile target was 15 g/m³.

- Median value was compliant at ~~12~~ 11.5 g/m³, up from 9 g/m³ in the previous period.
- The 90th Percentile value was not compliant at ~~15.8~~ 15.8 g/m³, down from 12.8 g/m³ in the previous period.
- Maximum recorded value was ~~20~~ 16 g/m³ in ~~Mar 08~~ November and December 2009.

Partially-Compliant Total Ammonia

The Target Median was 8 g/m³. The 90th Percentile target was 10 g/m³.

- The Median value was ~~0.365~~ 7.95 g/m³, up from 2.45 g/m³ in 2008-2009.
- The 90th Percentile value was ~~13.6~~ 14.8 g/m³, up from 11.32 g/m³ in 2008-2009.
- Maximum recorded value was ~~14~~ 16 g/m³ in ~~Jul-07~~ December 2009.

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Compliant TP

The Target Median was 5 g/m³. The 90th Percentile target was 7 g/m³.

- The Median value was ~~12~~ 3.6 g/m³, up from 3.5 g/m³ in 2008-2009.
- The 90th Percentile value was ~~7.3~~ 6.44 g/m³, up from 5.59 g/m³ in 2008-2009.
- Maximum recorded value was ~~7.9~~ 7.1 g/m³ in ~~Feb-08~~ March 2010.

Partially-compliant BOD

The Target Median was 15 g/m³. The 90th Percentile target was 20 g/m³.

- The Median value was 8.25 g/m³, down from 16 m/m³ the previous period.
- The 90th Percentile value was ~~26~~ 21.75 g/m³, down from 29.7 g/m³ for 2008-2009.
- Maximum recorded value was 27 g/m³ in ~~Oct-07~~ January 2010.

Non-compliant SS

The Target Median was 20 g/m³. The 90th Percentile target was 30 g/m³.

- The Median value was ~~93~~ 37 g/m³, down from 61 g/m³ in 2008-2009.
- The 90th Percentile value was ~~248~~ 106 g/m³, down from 129 g/m³ in 2008-2009.
- Maximum recorded value was ~~280~~ 320 g/m³ ~~Mar-08~~ January 2010.

~~High suspended solids were associated with extensive cover of the WWTP ponds by algal bloom.~~

Partially-compliant E Coli

The Target Median was 630 MPN/100mL. The 90th Percentile target was 3500 MPN/100mL.

- The Median value was ~~405~~ 570 MPN/100mL, down from 1800 in 2008-2009.
- The 90th Percentile value was ~~12000~~ 20280 MPN/100mL, up from 16000 MPN/100mL in 2008-2009.
- Maximum recorded value was ~~360000~~ 38000 MPN/100mL ~~Mar-08~~ in April 2010.

~~High E Coli were associated with extensive cover of the WWTP ponds by algal bloom reducing UV effectiveness~~

Partially-compliant Faecal Coliforms

The Target Median was 900 MPN/100mL. The 90th Percentile target was 5000 MPN/100mL.

- The median value was ~~405~~ 570 MPN/100mL, down from 6500 in 2008-2009.
- The 90th Percentile value was ~~73500~~ 21400 MPN/100mL, similar 2008-2009.
- ~~Maximum Mean 50000 MPN/100mL~~
- ~~Maximum recorded value was 420000~~ 38000 MPN/100mL in ~~Mar-08~~ April 2010.

Summary of Nutrient load discharged to Waikato River

Total Nitrogen

- Median value for the 2009/2010 year was 13.38 g/m³.
- Median value for the 2009/2010 year was 3.27 kg/day.
- The 90th Percentile value was 6.18 kg/day
- Maximum recorded monthly total was 8.42 kg/day in June 2010.

Total Phosphorous

- Median value for the 2009/2010 year was 3.6 g/m³
- Median value for the 2009/2010 year was 1.02 kg/day.
- The 90th Percentile value was 1.82 kg/day.
- Maximum recorded monthly total 2.24 kg/day in June 2009.

Summary of Treatment Issues and Improvement Plans

The results for this year are slightly better than the previous period in some nutrient areas. However the current system is still not meeting the consented standard.

- The system struggles to accept the influent flows and sometimes floods the rockfilter wetland and immediate surroundings during wet weather. The upgrade plan for 2010-2011 has a control valve system to retain volume in the main treatment pond. Ongoing efforts to find and eliminate sites of infiltration are continuing.
- The normal flows regularly exceed the discharge limits so it is not possible to meet this consent condition. An inflow magnetic flowmeter has been installed and in the upgrade plan this will be linked to the Datran system. In the meantime we manually read the totaliser records during normal operation site visits. The Waikato District Council will apply for changes to the discharge consent conditions as part of the upgrade project.
- The records show the UV system having some improvement in the final bacteriological results. The project upgrade will reduce the suspended solids loading to the UV reactor to increase the performance to meet discharge conditions.
- The wetland rockfilter presently provides limited treatment due to the small size and flow inefficiencies. The small holding pond on the end of the rockfilter has tended to have a very high algal loading and records indicate it is subject to lower temperatures than observed elsewhere, possibly as it is shallow and smaller in volume than other wetlands managed by the Waikato District Council. The design improvements of the wetland and final holding pond are not fully complete at this stage of the upgrade project plan.
- The telemetry recording from this site has not been reliable. During 2009-2010 period WDC conducted an investigation into the limitations and problems with the entire telemetry system. In the 2010-2011 year it is intended to upgrade the system so that the recommendations for improvement can be actioned.
- WDC sought further advice from the process designer Gilles Altner from G2e and AWT and there has been substantial communication with stakeholders. The project to implement upgrade plans is now scheduled for stage one to be completed in the 2010-2011 period.

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PLANTS ENGINEER

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GENERAL MANAGER
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