



13<sup>th</sup> November 2018

Thames-Coromandel District Council  
515 MacKay Street  
Private Bag  
THAMES

Dear Karen Steffek,

**RE: Hahei Wastewater Treatment Plant  
Annual Report - April 2017 to March 2018  
Resource Consent: AUTH135636.01.01**

This report covers the operation and compliance of the Hahei Wastewater Treatment Plant for the period 1 April 2017 to 31 March 2018.

Please find attached the supporting monitoring data for the daily effluent disposed and the analytical data for the year.

### **Comments on Trends**

The trend graphs relating to the comments below are located within the attached spreadsheet.

### **Effluent**

BOD was overall greater this past summer (2017/2018).

E. coli and Enterococci were also considerably higher this past summer and into autumn.

Ammonia levels this past summer were lower than the previous years. The influent and effluent levels are similar which suggests there is limited ammonia removal in the treatment process.

Phosphorous and soluble reactive phosphorous concentrations increase periodically over the summer peak period.

Please note that bimonthly sampling has changed to monthly under the new consent so this increase in resolution will start to impact the trends.



## Stream

Downstream BOD was elevated over summer, which the effluent increase over this period may have contributed to; however BOD downstream increased further in March when the effluent BOD had returned to low levels.

Ammonia concentrations downstream tend to increase over the summer peak period. This is not believed to be due to the plant as there are some ammonia spikes during other times of the year which do not increase downstream ammonia concentrations. From additional summer sampling there is increased pollution downstream of the plant which is believed to be due to septic tank pollution caused by the New Years' population influx.

When comparing upstream and downstream water quality, it generally appears that the discharge is having minimal effect on the quality of the stream. Bacterial content of the stream is often similar or actually higher in the upstream sample. Many of the chemical parameters have only slightly higher concentrations downstream compared to upstream, and in some cases the upstream concentration is slightly higher. The effluent discharge seems to be having a "dilution effect" on downstream stream quality for some parameters. However, due to the tidal influences downstream, it is not possible in most cases to directly implicate the effluent discharge in changing downstream water quality.

From additional peak period sampling there appears to be some pollution further downstream of the plant believed to be from septic tanks (Fluorescent whitening agent testing was done which suggested pollution) which increases over New Years as the population increases. This also complicates determining WWTP effects on downstream water quality as a drain feeds in around the downstream sampling site and additional sampling shows a high pollution input from this source.

## Comments on Compliance

Effluent quality is summarised in the table below:

	90th Percentile	Running Average
Suspended solids (g/m3)	8.6	3.5
cBOD5 (g/m3)	10.8	3.8
Escherichia coli (cfu/100 mL)	953.0	370.5
Total Ammoniacal nitrogen (g/m3)	51.0	22.4
Total Kjeldahl Nitrogen (g/m3)	33.6	13.9
Total Phosphorus (g/m3)	13.2	7.9

The below comments are in regards to the limits outlined in condition 8 of the consent:

- Suspended Solids: Has **complied** with both the running average and 90th percentile criteria.
- Carbonaceous Biochemical Oxygen Demand: Has **complied** with both the running average and 90th percentile criteria.



- c) Escherichia coli: Has **not complied** with both the running average and 90th percentile criteria.
- d) Total Ammoniacal Nitrogen: Has **not complied** with the 90th percentile criteria or the running average limit.
- e) Total Kjeldahl Nitrogen: Has **not complied** with 90th percentile criteria but has **complied** with the running average.
- f) Total Phosphorus: Has **complied** with both the running average and 90th percentile criteria.

The plant saw an overall decrease in effluent quality in the later 2017/2018 summer. The plant has struggled to comply with nitrogenous limits and E. coli compliance, especially with the new consent limits

Low flow gauging was not undertaken, as while waiting for a lower flow, rainfall occurred and the flow did not decrease again. An attempt will be made in early 2019, with more vigilance to get a flow gauging, even if it requires more than one gauging.

#### **Comments on Works Undertaken/Planned**

- Inlet screen has been installed to address inflow of solids
- New aerators have been installed, but both existing aerators cannot run in addition to these due to power inadequacies that have not been resolved.
- Installation of a baffle curtain in the aeration pond has occurred
- Improvements are yet to be made to the on-site SCADA and monitoring system, in order to better monitor ongoing plant performance.

If you have any enquiries, please do not hesitate to contact me.

Yours Sincerely,

Claire Eyberg  
**Technical Officer**