

From: [Brian Ellwood](#)
To: [Sarah Davidson](#)
Cc: [Tim Court-Patience](#)
Subject: FW: Kingston
Date: Wednesday, 23 June 2021 8:15:16 a.m.
Attachments: [image003.jpg](#)

Dear Sarah,

Following our meeting yesterday, you have requested that QLDC propose a nitrogen concentration in the treated wastewater before application to land in addition to the Total Nitrogen loading rate of 450 kg /ha/yr.

Condition 18 sets the quality standards for the WWTP discharge. QLDC proposes a nitrogen concentration of 50 mg/L for stage 1 and 30 mg/L for stage 2. These concentrations will provide certainty to ORC of the wastewater quality before discharge to land whilst allowing flexibility to QLDC to manage the whole treatment system by varying the effluent quality and land treatment application area. The detail of the scenarios is provided in the AEE in Section 3 and specifically Tables' 3.2 and 3.3.

The assessment of effects is based on the full loading of 450 kg N/ha/yr and a hydraulic loading of 6 mm per day every day. Having a higher nitrogen concentration and a lower hydraulic loading rate will amount to the same areal nitrogen loading and similar or lower nitrogen leaching rate due to reduced drainage.

Condition 18. (changes in red)

a) If the number of connections to the WWTP is less than 450, the results collected under Condition 17 of this consent shall not exceed the following 12 month rolling mean limits:

- i. 50 milligrams per litre of biochemical oxygen demand (5 day);
- ii. 30 milligrams per litre of total suspended solids;
- iii. 50 milligrams per litre of total nitrogen;
- iv. 10 milligrams per litre of total phosphorus;
- v. 10,000 colony forming units per 100 millilitres of Escherichia coli (rolling 12-month geometric mean).

b) If the number of property connections to the WWTP is greater than 450 the results collected under Condition 19 of this consent shall not exceed the following 12 month rolling mean limits::

- i. 20 milligrams per litre of biochemical oxygen demand (5 day);
- ii. 30 milligrams per litre of total suspended solids;
- iii. 30 milligrams per litre of total nitrogen;
- iv. 10 milligrams per litre of total phosphorus;
- v. 10,000 colony forming units per 100 millilitres of Escherichia coli (rolling 12-month geometric mean).

These proposed limits are consistent with other QLDC consent conditions for Hawea WWTP, a pond discharging to land, and Mt Cardrona Valley with an activated sludge SBR discharging to land. When you mentioned Project Pure, this has a higher quality effluent at the treatment plant. It is discharged to high rate trenches with no plant uptake. Project Shotover is discharging to ground immediately adjacent to the Shotover River again with no further nutrient removal post-discharge. At Kingston, we expect additional nutrient removal of around 70% of the applied nutrients.

Many thanks

Brian

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