Otago Regional Council

File: RM25.206

19 June 2025

Via email to: simon.mason@qldc.govt.nz

Dear Sir

Request for further information under section 92(1) of the Resource Management Act 1991 (the Act) – Consent Application Number RM25.206.01, RM25.206.02 and CRC25.206.03

Thank you for your application to discharge treated wastewater to the Shotover River/Kimiākau, to discharge contaminants into air and to construct an outfall structure in the Shotover River/Kimiākau.

An initial assessment of your application has been made by myself and the following experts who are providing a technical audit of the application:

- Dr Michael Greer, Surface water quality and aquatic ecology;
- Mr John Iseli, Air quality;
- Mr Tim Baker, Groundwater and hydrology;
- Mr Philip Shoebridge, Engineering; and
- Mr Philip Shaw, Avifauna.

To be able to make a full assessment of the application, I request the following information under section 92(1) of the Resource Management Act (the Act).

Discharge of treated wastewater to the Shotover River/Kimiākau

The following information is requested to validate the technical information provided to support conclusions made in the application to discharge treated wastewater to surface water.

Future effects of the discharge on the Shotover River/Kimiākau and Kawarau Rivers

(1) It is acknowledged that, due to the requirements of Section 330A of the RMA, the application required lodgement within 20 working days of notifying the Council the discharge had commenced under Section 330. The application relies on a small amount of monitoring data to support the conclusions reached in terms of the scale and significance of effects. It is understood that monitoring is ongoing, and further data will be provided as it becomes available. Observations from current monitoring indicates that ammonia concentrations at RS06, RS06B, RS09, RS11 and RS13 suggests there is potential for the discharge to cause

exceedances of the national bottom line for ammonia. Specifically, each of these sites have at least one exceedance of the 95%ile statistic in the limited available monitoring record. Please provide modelling or mass-balance assessments to support the conclusion in the application that the effects will be less than minor. In particular this assessment should:

a. Quantify expected key contaminant concentrations (including but not limited to ammonia, phosphorus, *E.coli*, filtered carbonaceous BOD and TSS) at the downstream extent of the reasonable mixing zone;
b. Compare expected contaminant concentrations at the downstream extent of the reasonable mixing zone with water quality thresholds set out in the National Policy Statement for Freshwater Management 2020, the water quality standards in Schedule 15 of the RPW and any other relevant thresholds commonly used to indicate the onset of adverse effects;
c. Consider background water quality conditions and low flow scenarios;
d. Include assumptions for dilution rates, river flow and discharge volumes;
e. Identify to what extent the diversion sought under RM25.177 is taken into account when considering undertaking modelling or mass-balance assessments;
f. Assess the consistency between the predicted (modelled or estimated) effects of the discharge on water quality and the monitoring date or observed water quality since the discharge commenced; and
g. Consider effects at the end of the zone of reasonable mixing (based on the response to Question 2 below), after full mixing in the Shotover River/Kimiākau and after full mixing in the Kawarau River.

(2) If modelling or mass-balance assessments are considered to be unnecessary, please provide an explanation for why.

(3) Please provide an updated assessment of effects of the discharge based on the results obtained from modelling or mass-balance calculations.

Determining the zone of reasonable mixing

(4) Section 5.3 of the resource consent application document notes that the historic downstream monitoring site "is within the mixing zone i.e: not fully mixed". There are various references throughout the application document to the mixing zone, the initial mixing zone and the discharge being fully mixed.

a. Please describe and justify what is considered to be the zone of reasonable mixing and provide an updated assessment of effects, if necessary, based on the zone of reasonable mixing.

Proposed limits in Table 5 of the resource consent application

(5) The application document titled 'Shotover WWPT Surface Water and Groundwater Assessment' dated 30 April 2025, prepared by GHD (Surface Water and Groundwater

Assessment) suggests ongoing legacy effects on phosphorus from the previous discharge. Results of water quality monitoring undertaken between 7 April 2025 and 6 May 2025 also show the discharge is contributing to concentrations of total phosphorus. Table 5 of the application for resource consent does not include a discharge quality limit for Total Phosphorus.

a. Please provide an explanation as to why a limit has not been identified, or alternatively update Table 5 to include a limit for Total Phosphorus.

(6) If it is considered that ongoing legacy effects on phosphorus from the previous discharge is still being released from bed sediments, please provide an explanation for how this is intended to be managed in future and how any ongoing effects can be separated from the discharge sought to be authorised in this process.

(7) Table 5 of the application for resource consent proposes a Total Ammoniacal Nitrogen (TAN) limit that would apply from the 1st January 2026. With respect to TAN limits, please provide:

a. an explanation for how these TAN limits have been determined as appropriate.
b. an explanation for why TAN limits have not been proposed for the discharge up to 31st December 2025.

Additional information requested to support and clarify conclusions made based on monitoring results

(8) Please confirm that Figure 5 in the application and the similar figures in the application document titled 'Resource Consent Application to Otago Regional Council for Discharge of Treated Effluent to Kimi-ākau/Shotover River' dated 1 May 2025 prepared by Landpro Limited (application for resource consent), represent combined pond and clarifier waste streams post UV.

(9) Section 3.8.2.3 states that a single round of sampling from the Shotover River was undertaken in August 2024 and is considered "representative of Shotover River winter conditions". Similarly, a number of statements in Section 3.8.2.5 state that monitoring is considered "to represent background Shotover River water quality".

a. Please provide an explanation for how a single round or a small number of samples can be considered representative and why further replication was not considered as this would be standard practice.

(10) In relation to Section 3.8.2.2 of the Surface Water and Groundwater Assessment, please:

a. explain why only a sub-set of water quality parameters are presented and why ammonia and BOD in particular have not been assessed.
b. summarise all available water quality data from historic compliance monitoring in terms of percentile, means and maximums; and
c. explain why the standard statistical comparisons of the historic upstream and downstream water quality (i.e: Wilcoxon signed rank tests) have not been conducted to support the conclusions made.

(11) In relation to Sections 3.8.2.4, 3.8.2.5 and 4.7 of the Surface Water and Groundwater Assessment, please:

a. provide an explanation for how the approximate 15-to-25-fold dilution of treated wastewater in the Shotover River/Kimiākau was verified without hydraulic calculations, dye tests or flow modelling to substantiate the dilution assumption and mixing zone extent.
b. provide a map showing the monitoring sites listed in Table 3.8.
c. confirm how far downstream of the discharge RS16 is located, and if it is at the point of the discharge, why the next closest site was chosen 150 metres downstream.
d. it appears that the water quality monitoring results obtained from RS06, RS06B, RS09, RS11 and RS13 shows significantly high ammonia concentrations (especially RS06). Please provide an explanation on whether water quality monitoring results obtained from these sites are due to the wastewater treatment plant discharge.
    i. If the cause of the significantly high ammonia concentrations are due to the wastewater treatment plant, please provide an explanation of the next steps that have been undertaken to investigate and remediate the cause of the elevated results.

(12) In relation to Sections 3.9 and 4.8 of the Surface Water and Groundwater Assessment, please:

a. confirm whether macroinvertebrate monitoring data are available for the period considered representative of the future discharge (2017-2019).
b. provide a spreadsheet with all of the ecological data referenced in Section 3.9.
c. confirm whether standard equivalence testing can be conducted on the QMCI data to statistically test the potential effects of the discharge.
d. provide all available periphyton data and an explanation on whether heterotrophic growths have been monitored and if they have, whether they have been detected. I note that this is specifically mentioned in the Kawarau River Water Conservation Order (WCO).

(13) In relation to Section 4.9 of the Surface Water and Groundwater Assessment:

a. given that *E. coli* is a poor indicator of health risk from wastewater, please explain why a Quantitative Microbial Risk Assessment (QMRA) has not been conducted particularly given the references to suitability for bathing in the WCO.
b. Either undertake a QMRA or undertake a similar assessment using an alternative method .
c. it is described that there was an initial flush of microbial contaminants from the engineered channel on commencement of the discharge. Please provide water quality monitoring results for *E.coli* from the UV channel discharge to validate this observation.

(14) Please provide proposed conditions of resource consent for the discharge permit to discharge treated wastewater to the Shotover River.

Works in the bed of the Shotover River/Kimiākau to construct an outfall structure

(15) The following information is requested to validate the technical information provided to support the application for works in the bed of the Shotover River/Kimiākau to construct an outfall structure. Please provide:

a. plans or schematics of the discharge outlet structure.
b. a description of how construction will be undertaken (i.e: will it require dewatering of the area and will fish salvage be required).
c. an assessment undertaken by a freshwater ecologist of effects on aquatic ecosystems as a result of the construction and design of the discharge outlet structure.

Your application will be placed on hold under section 88C of the Act until the requested information has been received. Unless I hear otherwise from you I will continue to do some minor work on your application so that we can progress it once the application comes 'off hold'.

In accordance with section 92A of the Act, please respond within 15 working days from the date of this letter (**11 July 2025**) with one of the following:

1. The information requested above; or
2. Written advice that you agree to provide the information, and the date by which you intend to provide it; or
3. Written advice that you refuse to provide the requested information.

The Act requires Council to publicly notify your application if you do not provide the requested information before the due date (or an agreed alternative date), or if you refuse to provide the information. It is, therefore, important that you contact us promptly to discuss an alternative timeframe if you are unable to provide the information by the due date.

If the information you provide raises more questions, your application will remain on hold until sufficient information has been provided to enable processing to continue.

If you have any further queries, please contact me on 027 3352300.

Information on the current processing costs for your application is included in the email relating to this letter.

Yours sincerely

Hannah Goslin
Consents Processing Planner

cc: Claire Perkins via email at claire@landpro.co.nz