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Sent via email: alexandra.king@orc.govt.nz

Tēnā koe Alex

Amendments to Application RM19.151 since lodgement

As requested, this letter provides a summary of how the above application has been amended since it was lodged. Because the application was lodged on 13 May 2019, regardless of any plan changes that have been notified since, this application will be processed as a **restricted discretionary** (s88A of the RMA).

Effects on Ecology

The application has been reviewed by Pete Ravenscroft of ORC's Resource Science Unit (RSU), who concluded:

*The effects of this activity are **no more than minor** providing the following conditions are adhered to.*

- *That all three points of take have to adhere to any future minimum flow on the Arrow River.*
- *Consent No.95696 has to maintain a connected visible flow immediately downstream of the point of take for a distance of no less than 50metres.*
- *Consent No's RM14.364.01 & 96285 has to maintain a connected visible flow immediately downstream of the point of take for a distance of no less than 50metres.*
- *Consent No's 3073B & 97029.V1 has to maintain a connected visible flow immediately downstream of the point of take for a distance of no less than 50metres*

RSU's file note is attached for your reference. The applicants have amended the application to adopt RSU's recommendations.

Since November 2019, we have been in discussions with the Department of Conservation regarding the proposal. This is summarised below:

- ORC (Ross Dungey) had previously visited the site and was satisfied that there were no native fish present, as was Pete Ravenscroft.
- DOC noted that ORC's surveys had been limited and asked that we either undertake a more thorough survey or assume that native fish may be present.

- We engaged Matt Hickey and Dean Olsen to undertake a more thorough survey with guidance from Daniel Jack of DOC to ensure that the survey was to DOC’s satisfaction.
- The survey confirmed that there are no native fish present in either creek. We have also shown that fish could not travel between the two creeks along the irrigation infrastructure and that there is a significant losing reach of RBNB downstream of the lower point of take.
- Downstream of the North and South Branches confluence, the Royal Burn gains flows from groundwater inputs and appears to flow permanently. It was in this section several age classes of small trout were recorded. Given there is no fish passage from the Arrow up the Crown Terrace to the Royal Burn, it indicates fish have been liberated into the Royal Burn. Currently, it is likely the intermittent reach in the North Branch is acting as a barrier to trout moving into the fish-free perennial reaches above the takes. It is highly unlikely that this trout population is contributing to the wider Arrow fishery, nor are they of any size to be a recreational asset.
- DOC are satisfied with the 50m residual flow proposed by ORC and they are also satisfied that there is no need to install fish screens anywhere. DOC have since provided unconditional written approval.

In conclusion, adverse effects of the ecology of the creeks will be no more than minor. This could be translated into more meaningful language by saying that adverse effects on the ecology of the creeks will be low or even negligible, however, the test in Policy 10A.2.3 of PC7 is “no more than minor”.

Effects on Hydrology

The table below shows the current consented rate of abstraction, what was original applied for, and what is now sought.

	Upper RBNB	Lower RBNB	New Chums
Rate currently consented	69.5 L/s	166.7 L/s	83.3 L/s
Rate originally applied for	15 L/s	100 L/s	45 L/s
Rate now sought	15 L/s	50 L/s	24.5

In other words, the total rate of take sought is only 28% of what is currently allowed. There will also be a reduction in annual allocation from 5,266,200 m³/yr to **1,822,608 m³/yr** i.e. the annual volume sought is only 35% of the current consented annual volume.

The reduction in the rate of take sought has been in response to the applicant upgrading the intake infrastructure at the Lower RBNB point of take, and in response to advice from ORC staff about the rates calculated using Method 10A.4.1 of PC7.

Irrigation Area

There is no change to the area under irrigation from what was originally applied for. The images below show that the majority of the irrigated area comprises productive farmland.

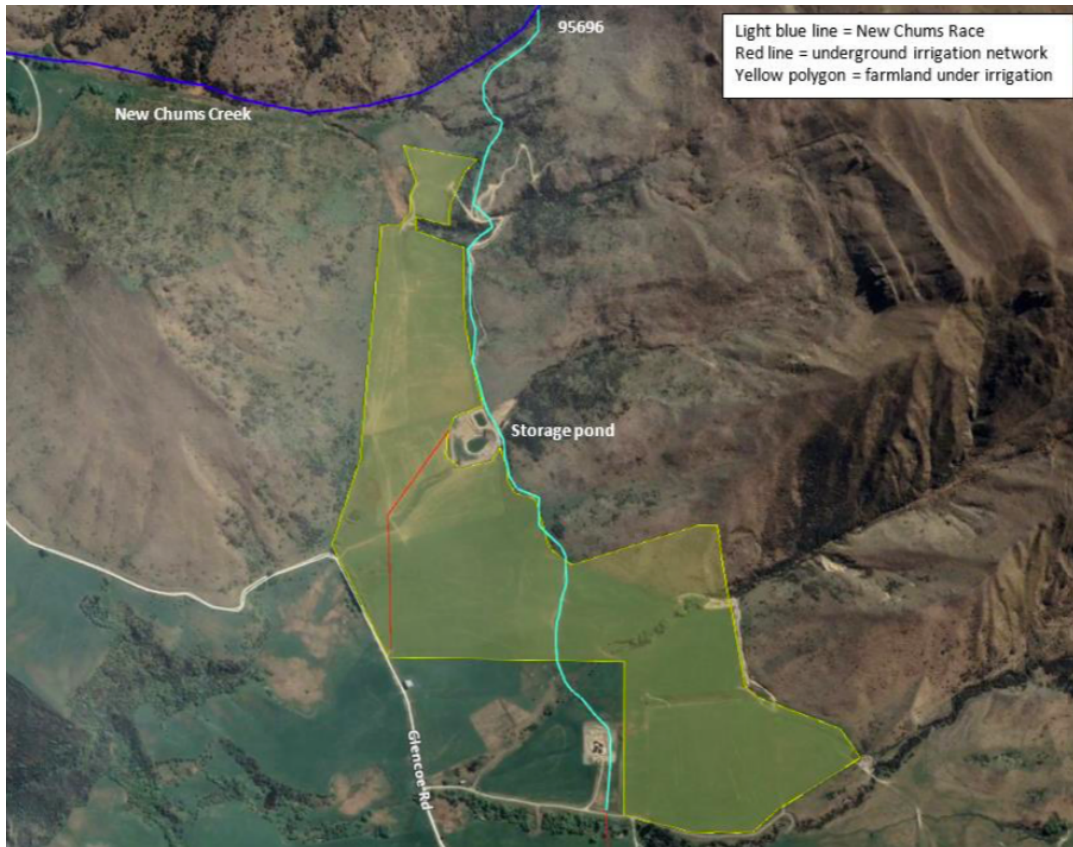


Figure 1: Point of take on New Chums Creek including the race, underground irrigation network, and irrigated areas.

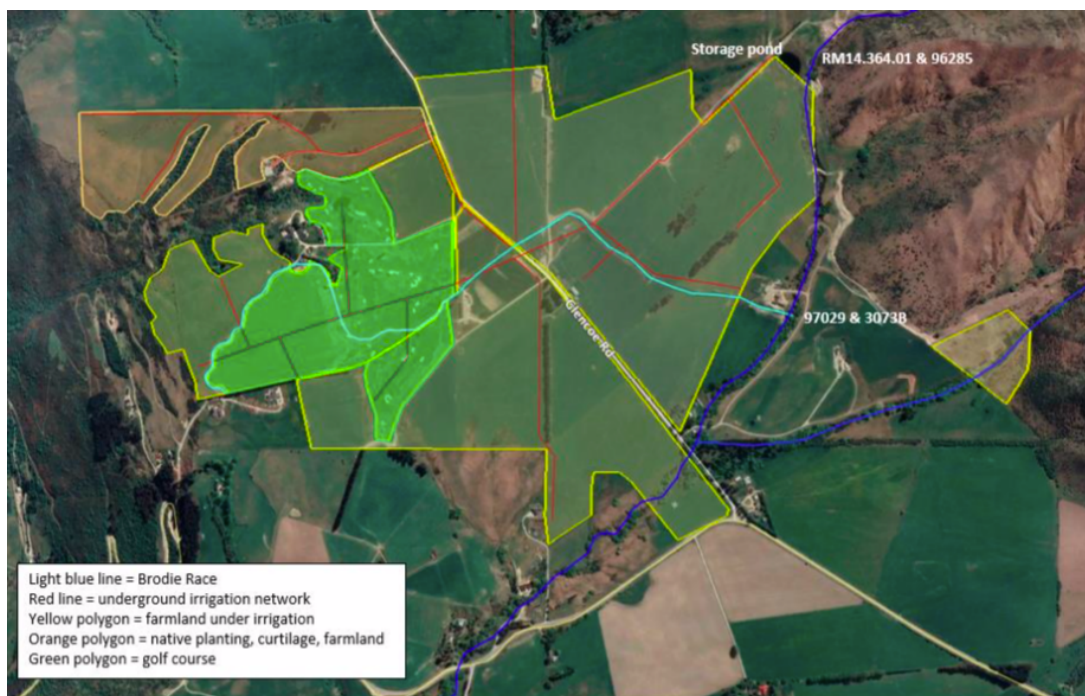


Figure 2: Points of take on the Royal Burn, the Brodie Race, underground irrigation network, and irrigated areas.

Ngā mihi nui

Hilary Lennox
Senior Consultant