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



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Tēnā koe Alex

Amendments to Application RM19.151

Further to our letter dated 27 November 2020, we would like to amend the above application in light of evolving legislation and to address potential adverse effects that were not understood when the application was first lodged.

Annual Volume

The rates of take sought remain unchanged from that detailed in our previous letter. We would, however, propose to reduce the annual volume sought from 1,822,608 m³/yr to **1,214,683 m³/yr**. This amendment is being made for the following reasons:

- The volume of water required for irrigating the golf course is less than previously assessed using Aqualinc values for pasture. We have extracted data from the irrigation system and found that the maximum volume used for irrigating the golf course over the past 6 years was 1,949.43 m³/ha. At the time of writing this letter, 36 ha of paddock is occupied by the golf course, of which 20 ha is irrigated¹. Based on this, the maximum annual irrigation demand for the golf course should be around 38,989 m³/yr. If this land had remained in pasture then the average annual irrigation demand would be 274,960 m³/yr.
- In the original application we allowed for 5 L/s baseflow in each of the races. Upon further consideration, this is not actually required in the Upper RBNB infrastructure. An average of 5 L/s in the New Chums and Brodie races equals 315,360 m³/yr.

¹ Excludes the rough and bunkers, which are not irrigated.



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- The remaining 139.2 ha across the two properties requires an average of 1,074,608 m³/yr according to Aqualinc.

This brings the total annual irrigation demand to approximately 1,428,957 m³/yr, which is higher than the volume sought. However, we are mindful of ORC's policies that require no more water to be granted than was taken previously, and so we are applying for a maximum of 1,214,683 m³/yr. This is the maximum annual volume that has been taken over the past 6 years (2018-19 season).

Low Flow Cut-off Condition

In August 2020 we were made aware of several affected parties downstream that could be adversely affected by the proposed abstraction activities. Due to gaps in our understanding of the hydrological regime of the Royal Burn, we found it difficult to quantify how these parties might be affected and so since late November we have undertaken catchment study work in the form of weekly photographic and video monitoring and confirmed our observations with flow gauging.

Our monitoring work has shown losses to ground between the lower point of take and the swamp in the swamp paddock (see below), but gains of at least 31.9 L/s between the swamp and the Crown Range Road crossing.

From our observations, we are confident that even when the Royal Burn North Branch is dry at Glencoe Road, there will still be water downstream of the applicant's property for permitted users. This is consistent with a comment made in the submission from Jef Desbecker:

In the very dry summer months, when the creek runs low or is dry in the vicinity of Glencoe Rd, the creek is naturally fed by swamps and seeps west of Glencoe Rd which bring the Royalburn back to a modest flow.

However, taking te mana o te wai into account, and to provide certainty that the proposed abstraction activities will not adversely affect downstream users, the following consent condition is proposed:

Water must not be abstracted from the Royal Burn North Branch for irrigation purposes when flows in the Royal Burn drop below 5 L/s at NZTM2000 1274996E 5011547N.

This location has been selected because it is downstream of the observed losing reach and because a notched weir can be more easily placed, monitored and maintained on the fence line.

The LOFTS Certificate of Compliance states that their rate of take is 0.2684 L/s. The proposed low flow condition means that the applicant cannot take water for irrigation purposes when the Royal Burn drops below 5 L/s at the monitoring location. This will ensure that the proposed abstraction activities on the Royal Burn North Branch will not affect the availability of water for the LOFTS or other downstream users, whilst also taking into account to te mana o te wai.

For example, if there was 5 L/s at the LOFTS point of take, this would still leave 4.7 L/s in the creek (although because of the gaining reach we wouldn't expect to see flows this low at the LOFTS point of take very often anyway).

Note that the applicant will still be able to take water for stock drinking water purposes as a permitted activity even if the low flow cut-off has been reached.

Residual Flow for Ecological Purposes

Our letter dated 27 November 2020 discusses potential effects on ecological values. Following advice from ORC's Resource Science Team, we have already amended the application to require a visible residual flow for 50 m past each point of take to ensure that adverse effects on significant instream values are no more than minor. We wish to retain this.

Recent monitoring has shown losses to ground along the Royal Burn North Branch of at least 7.8 L/s (and possibly as great as 13.2 L/s) between lower point of take down and the swamp (see plan attached). Assuming a MALF of 10.7 L/s for the Royal Burn North Branch in the vicinity of the abstraction activities, the section of creek between the lower point of take and the confluence with the south branch is naturally drying, with a MALF that is closer to 0 L/s.

This observation is supported by gauging work that we undertook in 2018 where we observed that the creek had dried up completely along this stretch. Further discussion on the hydrology of the creek and potential effects on ecological values and downstream users will be provided by Matt Hickey in due course.

Because we believe the natural MALF of the creek to be close to 0 L/s along this stretch, we do not believe that anything would be gained from maintaining a residual flow higher than that already proposed.

Consent Conditions

We would like to amend our application to include the attached suite of consent conditions.

I look forward to hearing from you soon regarding a suitable date for the hearing.

Ngā mihi



Hilary Lennox

Ahikā Consulting Limited

Attachments:

- Plan of monitoring locations
- Proposed Consent Conditions

Attachment 1 - Plan of monitoring locations

