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## Minute 2 response

**To:** Independent Hearing Commissioner Rob van Voorthuysen for RM19.345  
**From:** Alexandra King, Team Leader Consents – Coastal Otago  
**Date:** 10 May 2021  
**Re:** Minute 2 response from Bryony Miller, Hilary Lough, Michelle Mehlhopt and Alexandra King

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### ***Question for Bryony Miller***

Para 18: Are there any records of periphyton proliferation in either New Chums Creek or the Royal Burn North Branch?

### ***Response from Bryony Miller***

There are no records of periphyton proliferation in either New Chums Creek or the Royal Burn North Branch that I am aware of. Mr Hickey did not include any comments on aquatic plant/periphyton in his ecological memo, so I have no background information on this.

### ***Question for Bryony Miller***

Para 19: Are you suggesting that the BSTGT abstractions materially reduce trout habitat in the Arrow River?

### ***Response from Bryony Miller***

No, I am not suggesting that the BSTGT abstractions directly reduce trout habitat in the Arrow River. I am saying that both New Chums Creek and Royal Burn are tributaries of the Arrow River and their flows directly contribute to the Arrow River flow and by association trout habitat. Therefore, it is important to ensure appropriate allocation catchment-wide to allow for the maintenance of trout habitat.

### ***Question for Bryony Miller***

Paras 29 & 32: When you refer to “the ecology of a waterbody” what specifically are you referring to for New Chums Creek or the Royal Burn North Branch?

### ***Response from Bryony Miller***

The ‘ecology of a waterbody’ specifically for New Chums Creek and Royal Burn North Branch refers to the aquatic species present; specifically, EPT macroinvertebrates, trout, potentially koura (and aquatic plants if present), and the way they interrelate and interact with aspects of the water way in each creek such as dissolved oxygen, pH, water temperature, flow rates, and benthic substrate to support their lifecycles.

### ***Question for Bryony Miller***

Paras 38 & 51: What is the technical basis for your recommended 10 L/s minimum flow at NZTM2000 1274996E 5011547N. Namely why did you choose 10 L/s and not some other figure?

**Response from Bryony Miller**

The technical basis for the recommended 10 L/s minimum flow at NZTM2000 1274996E 5011547N was based on discussions with Hilary Lough and Bas Veendrick regarding the hydrology of the Royal Burn and the alignment of this minimum flow with the mean annual low flow (MALF) of the creek. Ecologically speaking a 10 L/s minimum flow helps to ensure aquatic life-supporting water parameters such as dissolved oxygen, water temperature and nutrient levels remain consistent to support EPT macroinvertebrate taxa and trout. Bull rush (*Typha orientalis*) was also identified by Mr Hickey as being present in the “groundwater upwelling area” (email dated 21/05/2021) directly upstream from the proposed minimum flow location which further indicates values associated with a sustained wetted area as this species is classified as a Hydrophyte Obligate (OBL), meaning it occurs almost always in wetlands (estimated probability <99%)<sup>1</sup>. The 5 L/s proposed by the applicant was proposed to mitigate potential effects on the downstream ‘LOFTS’ intake but is considered insufficient to protect flows/values in the stream and the “groundwater upwelling area”. Further to this, the applicant has applied for 12 m<sup>3</sup>/day for stock drinking purposes which is a permitted activity as it is under 1 L/s, and the 10 L/s minimum flow provides a greater buffer for the maintenance of appropriate water quality for ecological sustainability.

**Question for Bryony Miller**

Para 54: Can you please explain what you mean by “the 13,000 m<sup>3</sup> of water from the storage pond is primarily utilised for stock drinking purposes, PRIOR to any further water abstraction” and how that would relate to a minimum flow abstraction cessation condition?

**Response from Bryony Miller**

This statement is with regard to ecological concerns that the minimum flow could further be reduced by the applicant via abstraction for stock drinking water purposes. This is not included as a condition of consent as this abstraction type is a permitted activity. It is recommended here solely as good practice to utilise water already abstracted during months with high flows and stored in the 13,000 m<sup>2</sup> storage pond prior to further extracting during low flow and exceeding minimum flow conditions. I do not believe this could be included as a minimum flow abstraction cessation condition. If the recommendation of a 10 L/s minimum flow is accepted this would allay concerns regarding additional permitted water abstraction for stock drinking purposes by the applicant.

**Question for Hilary Lough**

Para 35: You recommend that ORC consider appropriate consent conditions to control potential water quality effects arising from the use of water for irrigation. Is that something that would more normally be addressed by regional land use rules such as is the case in Southland, Canterbury, Manawatu-Whanganui, Hawke’s Bay, Bay of Plenty, Waikato, etc ?

**Response from Hilary Lough**

Where regional councils do have land use rules relating to water quality (for example use of land for a farming activity), the effects of using water for irrigation may be addressed in consent conditions issued under those rules. Conditions may also be placed on consents for the take and use of water for irrigation. An example of this has come up in recent work when reviewing

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<sup>1</sup> Clarkson, B.R.; Champion, P.D.; Rance, B.D; Johnson, P.N; Bodmin, K.A; Forester, L.; Gerbeaux, P.; & Reeves, P.N. **2013**. *Landcare Research*, Hamilton, December 2013.

local consents for another project, which is consent CRC022037.<sup>12</sup> This was an older consent granted by Environment Canterbury for the use of water for irrigation in Canterbury and contains conditions related to water quality (Condition 9 for example). From my experience, while in the past the effects on groundwater quality were often covered under the take and use of water consents, it is becoming more common that nutrient effects on groundwater are addressed by land use consents (or discharge consents), in regions where there are now applicable rules. The applicable take and use rule 12.1.4.5 identified in the Section 42A report for this current consent application (RM19.151) requires a consideration of “*Any actual or potential effects on any groundwater body*” under Rule 12.1.4.8 (which is not restricted to water quantity effects). This is discussed on page 35 of the Section 42A report.

### ***Question for Hilary Lough***

Para 38: You state “This could involve the applicant monitoring groundwater levels in their 29.3 m deep bore F41/0176 and supplying these to ORC annually.” Is that what you recommend and if so what frequency of groundwater level monitoring is appropriate to determine long term trends?

### ***Response from Hilary Lough***

I recommend that monitoring should occur in bore F41/0176, if it is appropriate to use for monitoring. The applicant will need to confirm that it can be monitored (for example the headworks on the bore may mean it is not practical to do so). If it is not appropriate to use, I recommend that an alternate existing or new bore in a similar location is monitored. In line with paragraph 38 of my evidence, I recommend that water levels should be recorded electronically with a pressure transducer at least daily, with manual measurements made at least quarterly, to determine long term trends. The daily measurements will be helpful to isolate long term trends from short term fluctuations.

### ***Question for Michelle Mehlhopt***

Para 12 You observe the High Court noted that the separate control of the effects of an activity under the RMA may indicate that those effects are too remote to be considered. RMA section 30(1)(f) explicitly refers to the control of discharges of contaminants into or onto land, air, or water and discharges of water into water. That is implemented by section 15(1)(b) of the Act. RMA section 30(1)(c)(ii) explicitly refers to the control of the use of land for the purpose of the maintenance and enhancement of the quality of water in water bodies and coastal water. That is implemented by section 9(2) of the Act. Given those explicit ORC functions, does this mean that in this case the effect of irrigation on groundwater quality is “too remote to be considered” under an RMA section 14(2) water take consent?

### ***Response from Michelle Mehlhopt***

The application is for the take and use of water under section 14(2) of the RMA. While there are separate provisions of the RMA that regulate discharges, use of land and take and use of water, the way these provisions translate into regional planning provisions does not always strictly mirror the separation provided in the RMA. In this case, the Otago regional planning documents do not contain provisions that regulate discharges from the use of land for irrigation.

In this instance, the application is seeking resource consent for the take and use of water. It is the use of the water for irrigation that can have a direct effect on water quality. Therefore, the fact that discharges are separately regulated under the RMA is irrelevant in this case, as it is the use of the water that may cause this effect.

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<sup>2</sup> <https://www.ecan.govt.nz/data/consent-search/consentdetails/CRC022037.1>

When assessing whether an effect is “too remote to be considered”, the test is one of nexus and remoteness. Whether the activity could be regulated under other sections of the RMA or the provisions of the regional plan is not the test itself; it is one factor that contributes to the overall assessment.

The effect of the use of water for irrigation on groundwater quality is not “too remote to be considered” on this resource consent application, as the application is both for the take and use of water and the effects on groundwater quality are a direct consequence of the irrigation.

**Question for Michelle Mehlhopt**

Para 22 Does ORC routinely and consistently consider the effects of applications to take water for irrigation on groundwater quality and impose conditions of consent accordingly?

**Response from Michelle Mehlhopt**

The recently released decision of the Environment Court in *Clutha District Council v Otago Regional Council* [2020] NZEnvC 194 has highlighted to the Council the importance of being able to consider the end use effects when determining an application to take and use water (particularly in respect of the effects on water quality). Since the release of this decision, ORC has started to consider the effects of applications to take water for irrigation on groundwater quality and impose conditions of consent accordingly. It is important to note this case has been appealed to the High Court.

**Question for Alexandra King**

Some submitters raised concerns relating to:

- the effect of the BSTGT races on overland flows, and
- Glencoe Station’s 20% share in Deemed Permits 96285 and 95696

Do you have any comments on those matters?

**Response from Alexandra King**

Overland flows: Consent condition 18 has been recommended which looks to ensure the races do not cause overland flow. To make it clear there must be no leakage from any of the races I have specifically added this to the recommended consent condition (underlined). Condition 18 also stipulates water must not be applied inefficiently which will reduce the likelihood of causing overland flows. See condition 18 below:

18. The Consent Holder must take all practicable steps to ensure that at all times:
  - a) There is no leakage from pipes, races and structures;
  - b) The use of water is confined to targeted areas, as illustrated on the attached plan as Appendix 1 to this consent;
  - c) That the volume of water used for irrigation does not exceed that required for the soil to reach field capacity and avoids the use of water onto non-productive land such as impermeable surfaces; and
  - d) That irrigation to land must not occur when the moisture content of the soils is at or above field capacity.

Glencoe Station shares: Glencoe currently hold shares but have provided nil returns for seasons 2016/2017, 2017/2018, 2018/2019 and no response received yet to overdue returns letters for 2019/2020 season. Further to this no meters have been installed. I am uncertain where the intake would be located on the watercourse, specifically the Royal Burn as Glencoe own no property near the watercourse, I am therefore unable to provide any meaningful mitigation conditions to protect the potential takes.

**Question for Alexandra King**

Have you been able to determine the monthly and annual volumes required solely for domestic use?

***Response from Alexandra King***

There is no domestic use of water, this was stated by Miss Lennox in the email 8 May 2019 (attached for reference).

***Question for Alexandra King***

Does the irrigation requirement for the golf course (now said by the applicant to be 38,989 m<sup>3</sup>/year) include the turf growing business (Queenstown Turf Limited) that was of concern to some submitters?

***Response from Alexandra King***

The golf course allowance does not include the turf business. The turf business is included in the 139.2 hectares of 'pasture'.

***Question for Alexandra King***

Are you able to confirm that no additional (as yet undeveloped) irrigable area is sought?

***Response from Alexandra King***

There is no proposal to irrigate land that has not been irrigated in the past.



Alexandra King

**Team Leader Consents – Coastal Otago**