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16 Howard St
Macandrew Bay
Dunedin, 9014

11 September 2020

Otago Regional Council
70 Stafford Street
Private Bag 1954
Dunedin 9054
Attention: Alexandra King

Dear Alexandra

Pig Burn Water Users - Application No. RM20.039

Formal Amendment to Application

1. The Pigburn water users lodged an application with the Otago Regional Council to replace water permits. This application is titled: *"Pigburn – Collective Replacement of Permits to Take and Use Surface Water, Resource Consent Application and Supporting Information"* (McKeague Consultancy, February 2020). The ORC number for this application is RM20.039. This application is referred to hereafter as the 'original application'.
2. This letter formally amends the original application as set out below.
3. This amendment only concerns two of the applicants:
 - a. Concept Farms Ltd
 - b. Christopher Patrick Mulholland and Dale Evenlyn Mulholland (referred to as the 'Mulhollands')
4. Concept Farms Ltd applied to replace two permits in the original application:
 - a. RM97128 (referred to in the original application and here as the South Take)
 - b. RM96254 (referred to in the original application as the North Take)
5. The Mulhollands applied to replace one permit in the original application:
 - a. RM2000.498

Transfer of Interest - South Take to be transferred from Concept Farms Ltd to Sophic Trust

6. Due to a change in company structure and ownership, the land associated with the taking and use of water from the South Take will be held equally and jointly by Concept Farms Ltd and the Sophic Trust, which has the following postal address: PO Box 5241, Dunedin, 9054; and physical address: 949 Highcliff Rd, Dunedin.
7. This amendment includes an application to transfer an interest in this permit so that it is held jointly by these 2 parties. The applicant for the South Take permit is referred to hereafter as Concept/Sophic. This transfer of interest is assessed later in this document.

Proposal in Original Application for Combined Take Point

8. The original application proposed the combining of the Concept/Sophic South Take and Mulhollands' Take at the proposed combined take point, to be located at the existing location of the Concept/Sophic South Take.
9. At lower flows in the Pigburn Creek (<70l/s), a 3rd applicant (Hamiltons Dairy Ltd) would also take water from the proposed combined take point (refer to p39 of the original application for a full description of that proposal) instead of from its 'Herlihy Ford Take'. This amendment only concerns the abstraction of water from the proposed combined take point by Concept/Sophic and the Mulhollands.
10. This amendment changes the original application as follows, with the text below replacing Point 6. on p39 of the application (the text at 6. would be deleted and replaced with the following:

"6. The Mulhollands and Concept/Sophic would take (in equal shares) a total maximum rate of abstraction from the proposed combined take of

- a. 60l/s when they are able to maintain a residual flow of 10l/s immediately below the take from 1 October to 30 April in the following year; except*
- b. 110l/s when they are able to maintain a residual flow of 200l/s below the point of take at any time during the year.*

7. When Hamilton Dairy Ltd (the Herlihy's) shift their abstraction to the proposed combined take (when flows in the Pigburn Creek immediately below the Herlihy Ford take are less than 70l/s), the total maximum rate of abstraction from the proposed combined take will still be limited to 60l/s with a residual flow of 10l/s between 1 October to 30 April in the following year."

11. All references in the original application to the proposed combined take point being “capped at 60l/s at all times’ (see for example bottom of p74 and Point 2 on p86) should instead be read as “*capped at 60 l/s unless a residual flow of 200l/s can be maintained, at which time the maximum rate of abstraction is 110l/s*”
12. The annual volumes proposed in the original application for these 2 takes remain the same as in the original application. There are no changes to the volume requested.
13. Since the application was lodged, the Mulholland’s have obtained a consent to construct a dam, and construction is underway. The Mulholland’s have advised that their take from the Pigburn proposed combined take point can only convey water to their dam when the Maniototo East Side Irrigation Scheme (MESIS) is operating, as their Pigburn water is dropped into the East Side race and then taken from there into their dam. The MESIS only begins delivering water in mid-September and cannot deliver water earlier as prior to this water used for power generation. If MESIS water is not in the East Side race, the Pigburn water will not be sufficient to reach the Mulholland’s dam. This means that the Mulholland’s cannot abstract water during winter to fill their dam, so a supplementary allocation permit will not enable them to fill their dam.
14. This amendment will result in the following:
 - a. it will enable these applicants to take a greater proportion of their allocation at higher flows and in turn may constrain the abstraction at lower flows if this higher flow option has been exercised. This is because the annual volume is not proposed to be increased.
 - b. It will enable them to utilise higher flows to fill dams.
 - c. Dams enable the use of spray irrigation, which is a more efficient use of water and will reduce the potential for run-off which may adversely affect water quality.
 - d. The ability to fill dams can assist with a reduction in reliance on abstraction during lower flow periods.
15. The amendment is not being made to allow for expansion of irrigated area – the applicants anticipate a condition limiting the area of irrigation to the size specified in the application. This will ensure expansion does not occur. An updated proposed consent for the proposed combined take is enclosed with this letter (Enclosure 1).

Assessment of Environmental Effects

16. Mr Hickey, of Water Resource Management Ltd has carried out an additional hydrological and ecological assessment of this amendment and this is enclosed with this letter (Enclosure 2).
17. Overall, the amendment does not result in a material change to the assessment of environmental effects in the original application but will enable the filling of dams and increase in efficiency methods of irrigation.
18. As can be seen from the attached memorandum from Mr Hickey, the proposed residual flow of 200l/s for the higher rate of abstraction will provide optimum habitat for trout spawning, food producing (macroinvertebrates) and large longfin eels (>300mm). Flow variability will also be maintained.
19. Therefore, the amendment will not result in an increase or worsening in the scale or nature of potential adverse effects when compared to the original application.

Legislative and Policy Assessment

20. The proposed amendment does not affect the activity status of activities applied for in the original application.
21. The proposed amendment does not materially alter the assessment of the application against relevant legislation and policy. With regard to the Otago Regional Council Regional Plan Water for Otago (RPW), the amendment (and the related residual flow of 200l/s) will protect and enhance cultural values, amenity values, natural character (Objective 5.3.2, Objective 5.3.3, Policy 5.4.8, Objective 5.3.4, Policy 5.4.9 of the Regional Plan Water) and is anticipated to better support life-supporting capacity as a result of the residual flow of 200l/s (Objective 6.3.1).
22. The additional rate of abstraction applied for in this amendment is within the history of use as established by metering data shown in the original application and will support efficient use of water (Policy 6.4.2A and Policy 6.4.0A). This amendment is also supported by Policy 6.6.2 of the RPW, which promotes the storage of water.
23. This amendment is also considered to be consistent with the National Policy Statement for Freshwater Management (both the 2017 amended version which was relevant at the time the original application was lodged, and also the 2020 version). The residual flow associated with this amendment avoids or mitigates potential adverse effects on instream ecology and thus gives effect to Te Mana o te Wai and

protects habitats of freshwater species. It also supports efficiency of use by enabling the filling of dams which support efficient irrigation infrastructure.

Transfer of Interest - South Take

24. Due to a change in company structure and ownership, the land associated with the taking and use of water from the South Take will be owned and/or occupied by Concept Farms Ltd and Sophic Trust. This amendment seeks the addition of Sophic Trust as the joint permit holder for the Concept Farms Ltd portion of the proposed combined take.
25. As these permits relate to an activity for which consent is required under Part 3 of the RMA, section 87B(1)(a) is considered to apply to the transfer of an interest in the relevant permits, and these activities are considered as a discretionary activity. Regard must be had to certain effects under s136(4), as well as the matters in Policy 6.4.17.
26. The transfer is administrative only (i.e. in name only) and is consistent with all aspects of Policy 6.4.17. The effects of the transfer remain the same as the effects of operating the permit as if it were still held under the existing permit holders name (s136(4)). Ceasing the permit would result in significant adverse effects on the farm that relies on this water to operate, as the farm would no longer be able to function.

Summary

27. The amendment does not materially change the original application or the nature, scale or type of effects that will result or potentially result from the application.

Yours sincerely



Sally Dicey
McKeague Consultancy
On behalf of Pig Burn Water Users

Enclosures:

Enclosure 1: Updated Draft Permit for Proposed Combined Take

Enclosure 2: Memorandum from Matt Hickey, Water Resource Management Ltd

Our Reference:

Consent No. RM

WATER PERMIT

Pursuant to Section 104C of the Resource Management Act 1991, the Otago Regional Council grants consent to:

Name: Concept Farms Ltd and Sophic Trust (referred to hereafter as Concept/Sophic)

Address: CEG Limited, 110 Vogel Street, Dunedin and 949 Highcliff Rd, Dunedin

Name: Christopher Patrick Mulholland and Dale Evelyn Mulholland (referred to hereafter as "Mulholland")

Address: Ranfurly-Patearoa Road, RD 4, Ranfurly

Name: Hamiltons Dairy Limited

Address: C/o Ibbotson Cooney Limited, Level 1, 69 Tarbert Street, Alexandra

Purpose: To take and use surface water as primary allocation from the Pig Burn for the purpose of irrigation, storage, stock drinking water and dairy shed use.

For a term expiring: *[35 years from date of issue]*

Location of point of abstraction:

Pig Burn, approximately 930 metres north northwest of the intersection of Roberts Road and Hamilton Road, Waipiata, Maniototo

Legal description of land at point of abstraction:

Marginal Strip (Crown land Blk IV Upper Taieri Survey District, SO12392) adjacent to Sec 25, Blk IV Upper Taieri Survey District.

Legal description of land where water is to be used:

Concept Farms Ltd: Sec 19, 31 and Pt Sec 32 Blk XIV Maniototo SD and Sec 2 SO 24830, Sec 11 and Sec 12 Blk XIV Maniototo SD, Secs 33 – 35 Blk XIV Maniototo SD, Sec 23 Blk XIV Maniototo SD, Pt Lot 3 DP 340765

Mulholland: Sec 1 SO Plan 23520, Section 1 SO Plan 23521, Lot 1 DP 427338

Hamiltons Dairy Limited: Lot 1 DP 397751, Lot 1 DP 431784, Lot 1 DP 500044 Sec 48 Blk 1 Sec 12, Blk II Upper Taieri SD, Sec 18 Blk XIII Maniototo SD, Lots 2-5,7-9 84DP 4317,

Sec 4 SD 24830, Sec 7 Blk I Upper Taieri SD, Sec 14 Blk XIII Maniototo SD, Lot 2 DP 427338, Lot 1 DP 441480 Upper Taieri SD

Map reference at point of abstraction:

NZTM2000 E1372833 N4986146

Conditions

Specific

1. This consent must not commence until Consents 96230.V1, 97128 and 2000.498 have been surrendered or expired.
2. The rate of abstraction must not exceed:
 - a. 60 litres per second as a combined total between the consent holders taking water pursuant to this consent when flow immediately below the point of take is less than 200 litres per second
 - a-b. 100 litres per second as a combined total between the Mulhollands and Concept/Sophic when flow immediately below the point of take is equal to or greater than 200 litres per second
 - b-c. 920,655m³ during the period from 1 July to 30 June in the following year by Concept /Sophic
 - e-d. 768,615m³ during the period from 1 July to 30 June in the following year by Mulholland
 - d-e. 459,875m³ during the period from 1 July to 30 June in the following year by Hamiltons Dairy Limited as a combined total with the annual volume authorised to be taken by Consent XXX [insert consent number for Hamiltons Dairy Limited consent i.e. Herlihy Ford Take]
3. Hamiltons Dairy Limited must only take water under this consent when flows immediately below the point of take authorised by Consent XXX [*insert consent number for Hamiltons Dairy Limited consent i.e Herlihy Ford Take*] located at NZTM2000 E1373417 N4985319 are less than 70 litres per second.
4. Hamiltons Dairy Limited must not take water under this consent at the same time as taking water under Consent XXX [*insert Consent number for Proposed Combined Take*]. This condition only applies to abstraction undertaken by Hamiltons Dairy Limited, and does not affect the ability of Concept/~~Sophic -Ltd~~ or Mulholland to take water under this consent.
5. Other than for exercising this consent for reasonable domestic and stock drinking water purposes, the consent holders must not take water under Condition 2(a) of this consent unless there is a residual flow of 10 litres per second immediately below the point of take authorised by this consent.

6. Abstraction authorised by this consent must not occur from this point of take when flows in the Taieri River are equal to or less than 1,000l/s at the Otago Regional Council's Waipiata flow site (insert map reference). This condition will only be implemented upon collective review of consent conditions within the Taieri catchment under Sections 128 to 132 of the Resource Management Act.

7. Within 5 years of this consent being exercised, at least 100 hectares of area on the Mulholland property (Sec 1 SO Plan 23520, Section 1 SO Plan 23521, Lot 1 DP 427338) must be spray irrigated.

memo

To: Sally Dicey (McKeague Consultancy)

From: Matt Hickey (WRM Ltd)

Date: 01/09/2020

Re: Higher Primary Take Rate at Times of High Flow

Water Use Data

Both the Kirkwood South and the Mulholland takes have consented maximum rates of 56 l/s. Both have historically accessed their maximum consented rate of take both individually and simultaneously (Figure 1). Altering the applications combined rate of take from 60 l/s to 110 l/s is not outside these applicants' history of use.

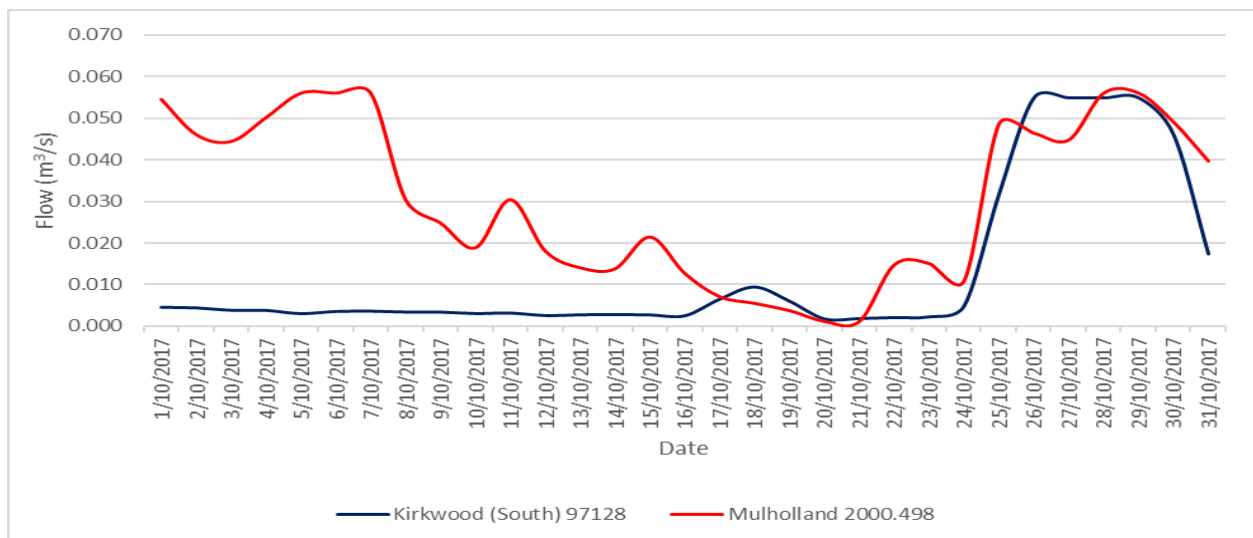


Figure 1. Observed take rates for the Kirkwood South and Mulholland takes in October 2017.

Historically these takes have operated taking a combined rate of take of 111 l/s and they have done so with no residual flow to maintain. The amendment to the application seeks a combined maximum instantaneous rate of take of 110 l/s at the proposed combined take by Mulholland and Concept/Sophic with a residual flow of 200 l/s below the point of take.

When the residual flow of 200 l/s cannot be maintained below the point of take, the combined maximum rate of take is still proposed to be 60 l/s with a residual flow of 10 l/s.

This amendment would replace and supersede only the specific part of the original application (dated February 2020), which sought a combined maximum rate of take of 60 l/s (at all times) with a residual flow of 10 l/s at the proposed combined take by the Mulholland's and Concept/Sophic. Annual volumes are not proposed to be amended.

Comparison of Flow Regimes

Figure 2 below provides an example of the flow regime expected below the combined take under the controls in the original application (60 l/s max take with 10 l/s residual flow) compared to the flow regime with the proposed amendment (110 l/s maximum take with a 200 l/s residual flow and 60 l/s max take with 10 l/s residual flow).

When interpreting Figure 2 it should be considered conservative as it assumes if the water is there and the residual flow can be met that water is taken. However, in reality the volume constraints on the take would prevent this, meaning that the red and green lines would more closely reflect the blue line, particularly later in the season.

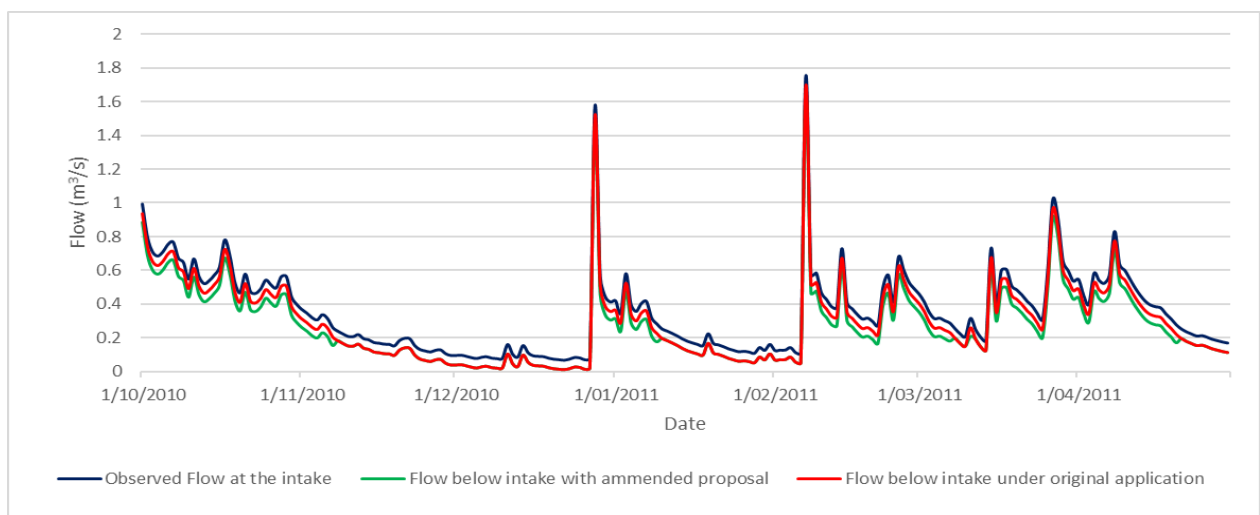


Figure 2. Observed flow at the intake (before taking), the flow regime that would occur under the initial application below the intake and the flow regime that would occur with the proposed amendment (110 l/s take with 200 l/s residual flow).

Figure 2 demonstrates that the amendment has minimal effect on flows in the Pig Burn compared to what was originally applied for. Clearly the amendment ensures flow variability would not be affected by the amendment and that when the take is operating more than 60% of the flow at the take will be left instream.

200 l/s Residual Flow for Ecological Values

Based on the habitat modeling by Golders Associates for the Pig Burn a 200 l/s flow provides optimum habitat for trout spawning, food producing (macroinvertebrates) and large longfin eels (>300mm). 200 l/s is also more than twice the natural 7-day MALF. The natural 7-day MALF is often considered the bottle neck for trout habitat. As 200 l/s provides more habitat

than the natural 7-day MALF this should mean that the effect on trout habitat is less than minor.

200 l/s Residual Flow – Fish Passage

The applicant proposes that the 200 l/s residual would be passing the Combined Take before the additional 50 l/s could be taken¹. It is expected that in winter or following rain events there will be much more than 200 l/s passing the Combined Take (refer to Figure 2 above). My expectation is that the residual flow, in concert with the natural flow variability of the Pig Burn will provide for trout passage in the reach below the intake unless flows are naturally too low to do so.

Fish Screen

A fish screen is proposed for the Combined Take to prevent entrainment of trout and eels.

Conclusion

- The take data supports that a combined rate of take of 110 l/s has occurred historically.
- The proposal would ensure flow variability is maintained and that the majority of flow would pass the intake at all times.
- The habitat modelling suggests that ecological effects of taking at higher flows will be less than minor.
- Spray based irrigation systems with storage are more reliant on volume than rate of take. Ecologically it would make more sense to access as much volume of take as possible when the Pig Burn is above 200 l/s thus reducing the volume taken when flows at the intake are between 200 l/s and 10 l/s.
- Fish passage is expected to be maintained below the combined take and screens are proposed to prevent entrainment of fish.

¹ The original application was for a max rate of 60 l/s and a residual of 10 l/s with no provision for an increased residual in winter.