

5 September 2018

Fisheries Manager
Fish & Game New Zealand
Auckland/Waikato Region
156 Brymer Rd, RD 9
HAMILTON 3289

Attention: Adam Daniels, PhD (by email)

Dear Adam

RE: QUESTION REGARDING RIVER FLOW MODIFICATION

We've set out below your question via email on 31st August and our response.

"We would like to know how often the take will occur (how many days a year) based on flow data for the last 5 years. It is very difficult to evaluate the potential impact downstream with the information provided."

Based on the past five years of river flow data, the 2xMALF flow of 845L/s at the proposed abstraction location is exceeded for 61% of the time. Under the existing and proposed conditions of consent, this means that the abstraction could operate on 223 days per year (on average).

In isolation, the "days per year" statistic has little meaning. It is the effect of the abstraction on the overall hydrologic characteristics of the river that is important. The existing, and proposed conditions prevent any abstraction during the low summer flow periods when water demand from other users is typically at its peak and when aquatic fauna is typically under increased stress from low flows and warmer temperatures.

At the higher end of the flow regime, the abstraction is proposed to be limited to 20% of the flow, so is taking only a portion of that flow. Additionally, the FRE3 metric is an important indicator of the events that cause ecological disturbance (Boffa 2018). This metric, which is the average number of times per year that the flow exceeds three times the median flow, is estimated to decrease from 14.16 to 13.59 if the consent as applied for is granted. In practice, this decrease is the equivalent of one less elevated-flow (>3 x median) event in the Ohinemuri River immediately downstream of the abstraction every 1.5-2 years on average, that effect decreasing with increasing distance downstream. The ecological report (Appendix J to the AEE, Boffa 2018) concludes that under these conditions "the life-supporting capacity of the river will be safeguarded and there will be no adverse effects resulting from the proposed modification to the abstraction".

Yours sincerely

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Daniel Calderwood
HSE Manager - Waihi Operations