In the matter of	the Resource Management Act 1991
And	
In the matter of	The Rangitata Diversion Race Management Limited Consents

Before the Canterbury Regional Council and the Ashburton District Council

Supplementary Evidence of Douglas Rankin for and on behalf of Whitewater NZ Incorporated, the Whitewater Canoe Club Incorporated, the New Zealand Rivers Association Incorporated, Hidden Valleys (NZ) Ltd, Geraldine High School and the University of Canterbury Canoe Club Incorporated

Dated: 29 April 2018

#### INTRODUCTION

- 1. My name is Douglas Alexander Rankin and I have prepared a statement of evidence<sup>1</sup> on the RDRML proposal for and on behalf of the joint submitters named above. I have also prepared a statement of supplementary evidence on behalf of Whitewater NZ, one of the joint submitters, reflecting the Whitewater NZ position on the RDRML proposal, and in particular on the proposed single wave feature proposed to be built as part of the construction of the Klondyke Storage Pond.
- 2. The purpose of this additional supplementary evidence is to summarise key salient points from my evidence in chief and address a number of points in the applicant's legal submissions, evidence, and supplementary evidence with respect to the impacts of their proposed 10 cumec take from the Rangitata River.

#### SUMMARY OF MY EVIDENCE IN CHIEF

- 3. I briefly touch on the outstanding Class II to III white water rafting and kayaking values and recreation amenity in the Klondyke to Arundel Bridge reach on the Rangitata River recognised by the WCO. The reach is a key nursery river reach for Canterbury paddlers, particularly for the 'big' water experience offered to paddlers in higher flows.
- 4. The right combinations of river flow and bed gradient and bed structure and features are needed to produce white water. Different flow bands or ranges are preferred and required for paddlers of different abilities, and for kayakers and rafters. Variability in flows from day to day, and no holding of flows in small fixed narrow bands which can sometimes occur with substantial river takes, as well as having a full range of flows in the relevant flow bands, are key to having and retaining viable functional white water paddling resources. Flow bands preferred for various levels of kayakers and rafters are summarised in Table 1 of my EIC<sup>2</sup>. Some of these flow bands have changed as a result of progressive geomorphological changes to the river over time.
- 5. As illustrated in Figures 1 and 2 of my EIC<sup>3</sup> flow bands for different users or users with different skills can be quite narrow or relatively wide. A uniform distribution is normally preferred, but this may not exist for any particular user or skill group simply because the natural or modified flow regime of a river or reach may not produce the ideal flow distribution.
- 6. Figure 3 of my EIC<sup>4</sup> shows the average annual natural, existing and modified flow distributions over the 1 November to 30 April paddling season over the whole flow record as a result of the various takes. The past natural flow distribution would have best met the needs of intermediate ability kayakers. However, now with the size of the RDR takes, the river is a shadow of its former self and is more suited to beginner

<sup>&</sup>lt;sup>1</sup> Dr Rankin evidence in chief (EIC).

<sup>&</sup>lt;sup>2</sup> Dr Rankin evidence in chief, Table 1, page 9.

<sup>&</sup>lt;sup>3</sup> Dr Rankin evidence in chief, Figures 1 & 2, pages 10 & 11, respectively.

<sup>&</sup>lt;sup>4</sup> Dr Rankin evidence in chief, Figure 3, page 14.

kayakers and less suited to intermediate and advanced/expert kayakers, and rafters. It is very hard to find days when the river will have high enough flows in it to produce the big water it was once renowned for.

- 7. The proposed 10 cumec take will significantly reduce the number of existing days that higher flows >100 cumecs of interest to intermediate kayakers (flow band 45-170 cumecs), advanced/expert kayakers (flow band 55-250 cumecs), and rafters (flow band 55-250 cumecs), and negatively impact on flow variability by constraining flows in a narrow 98-100 cumec flow band range for a significant number of days. The take will not impact on the existing days available for beginner kayakers.
- 8. The changes in some high flow bands of interest are summarised in Table 2 of my EIC<sup>5</sup>, and changes in various broad flow ranges and overall flow bands are summarised in Table 3 of my EIC<sup>6</sup>. The applicant uses a method to determine impacts whereby they add together the number of days that high flows are reduced and the number of days that flows are constrained in a narrow 95 (or 98) to 100 cumec flow band range, for broad flow band ranges of relevance. The applicant then concludes that overall small positive changes observed in the number of days in key overall flow bands means that the impact of the takes essentially is positive. However, this methodology hides the negative impacts of critical losses of higher flows and holding of flows in narrow flow bands, all as a result of the 10 cumec take, and is, therefore, not a valid methodology.
- 9. I have summarised what a take does by examining changes to flows on an hourly basis using some recent flow data from a fresh event (Figure 4'). This was done using the original take protocol proposed by the applicant, which, in addition to the taking of 10 cumecs from the river, showed a significant reduction of valued kayaking and rafting flows below 100 cumecs, as well as taking 10 cumecs when the natural flow in the river was less than the trigger flow of 132.6 cumecs on some occasions. The applicant has recognised this issue and has now changed the take protocol so that natural flows will be interrogated on at least an hourly basis (does this need to be stipulated in the consent conditions? - I think the word 'hourly' should be added to remove any possible ambiguity), so that no flow will be taken when the natural flow at Klondyke is below 132.6 cumecs. This also has the effect of stopping the take of additional flows below 100 cumecs that would have occurred with the previous protocol, from about 12:00 onwards on 23 February (see Figure 4 for the additional takes that would have otherwise occurred until 12:00 on 24 February 2018; this is also illustrated and discussed a little further below). We support this change in take protocol and consent conditions, as they remove an otherwise unrecognised and unquantified additional significant impact of the take, and ensure the applicant does not take any flows when the river is below 132.6 cumecs and to which they are not entitled.

<sup>&</sup>lt;sup>5</sup> Dr Rankin evidence in chief, Table 2, page 17.

<sup>&</sup>lt;sup>6</sup> Dr Rankin evidence in chief, Table 3, page 19.

<sup>&</sup>lt;sup>7</sup> Dr Rankin evidence in chief, Figure 4, page 21.

- 10. I have then summarised the impacts of the proposed take on kayakers and rafters. The residual effects that will remain now that the take protocol has been modified will be:
  - (a) Loss of a significant number of days in flow bands where flows are greater than about 100 cumecs, and therefore the number of days that such flows can be experienced on the river, as a result of the loss of up to 10 cumecs from all valued flows higher than 100 cumecs, whenever a take occurs
  - (b) A significant constraining or flat-lining of flows (and loss of flow variability) in a narrow flow band at or about 100 cumecs, which constitutes a loss of resource as well, and a significant increase in the number of days when flows occur in that flow band
- 11. The changes in average annual reductions in the amount of time when valued flows greater than 100 cumecs will be found in the river are updated from what was summarised on page 39 of our joint submission<sup>8</sup> (see Table 3 in my EIC<sup>9</sup>) and what Mr Greenaway reports<sup>10</sup>. The shifts and their relevance to paddlers are:
  - (a) 24.1 days per kayaking season existing to 20.1 days under the proposal a loss of 4.0 days or 16.6% for intermediate kayakers, for the 100-170 cumec flow range (with losses in 5-cumec flow bands in this range ranging from an increase of 16.4% in one flow band, to losses in the majority of flow bands ranging from 7.0 to 34.4%)
  - (b) 32.5 days existing to 27.4 days a loss of 5.1 days or 15.7% for advanced/expert kayakers, or for rafters, for the 100-250 cumec flow range
  - (c) 24.1 days existing to 20.1 days a loss of 4.0 days or 16.6% for rafters and intermediate and advanced/expert kayakers seeking the 'big' white water standing wave trains the RDR to Arundel reach is renowned for, for the 100-170 cumec flow range
  - (d) 3.4 days existing to 9.0 days a loss of 5.6 days (165%) in flow variability where flows are constrained in a narrow flow band near 100 cumecs impacting on all user groups in (a) to (c) above.
- 12. These losses in flow availability and variability are all very significant and far more than minor. In particular, as mentioned previously, the losses in high flows are not 'compensated' for by the increased number of days that flows remain constrained in the 95-100 cumec flow band where flow variability is lost.
- 13. It is incorrect for the applicant to offset the reductions in the number of high flow days lost by the increase in the number of days that flows are constrained in the single 95-100 cumec flow band (add the 'losses' to the 'gains'), as a result of the 10-cumec take. It is also incorrect to then conclude on that basis that there are somehow little

<sup>&</sup>lt;sup>8</sup> Page 39, Whitewater NZ *et al.*, Submission on RDRML Klondyke Storage Pond Application, 27 September 2016.

<sup>&</sup>lt;sup>9</sup> Dr Rankin evidence in chief, Table 3, page 19.

<sup>&</sup>lt;sup>10</sup> Mr Greenaway evidence in chief, paragraph 51.

or no impacts or reductions on kayaking and rafting flows of value, and that the 'amenity for rafting and kayaking is [not] lost or modified in a meaningful way'<sup>11</sup>, or that benefits accrue on the basis of this flow band analysis alone, as stated in evidence and the AEEs<sup>12</sup>. Significant reductions in valued higher flows will generally occur, and some flows will be constrained in one narrow flow band (a loss of variability), but will remain hidden by the applicant's method, whenever the proposed take is made in key flow band ranges. Thus loss of valued flows and in the number of days that such flows can be accessed, as well as an increase in the number of days that flows are constrained to one narrow flow band, will automatically follow.

14. I then discuss further the applicant's assessment of impacts on white water rafters and kayakers, and the deficiencies I see in their analysis and concerns I have with it. I then touch on concerns I have over the lack of analysis and consideration of recreation values in the Section 42a Officers Report and then develop my arguments as to why the consent should be declined. I finally conclude in paragraph 145<sup>13</sup>:

'Therefore, the proposed 10 cumec take <u>will</u> reduce many of the valued flows in the river in more than a minor way, and therefore the use of the waters for rafting or canoeing. As this is contrary to the purpose of the WCO to recognise and protect and sustain such outstanding recreation values, the purpose of the RPS to protect outstanding water bodies, and the purpose of the NPSFM to avoid over-allocation, the proposed consent cannot be granted<sup>14</sup>.'

15. I conclude my evidence with some comments requesting the earlier surrender of CRC134808; possible granting of the proposed consent and mitigation, should granting the consent be deemed possible; the results of consultation with RDRML and where we as a group have landed, and changes to the applicant's consent conditions, especially with respect to the building of the white water course, should the Klondyke Storage Pond be constructed.

## SUPPLEMENTARY EVIDENCE

#### GENERAL

16. The evidence presented by the applicant on the impacts of the proposed 10 cumec take on kayaking and rafting white water values in the Klondyke to Arundel Bridge reach, and below the Arundel Bridge, is one of the key elements of their case for granting the consent. The applicant asserts that the flow changes comply with the Water Conservation Order and that even though there are losses in days for valued flows above 100 cumecs, increases in preferred flows for educational purposes

<sup>&</sup>lt;sup>11</sup> Mr Greenaway evidence in chief, paragraph 39.

<sup>&</sup>lt;sup>12</sup> G Kemble *et al.*, Lake Klondyke: A Proposed Water Storage Facility, Prepared for: Rangitata Diversion Race Management Limited, Ryder Consulting, July 2016; D Greaves, Proposed Rangitata Diversion Race fishscreen and supplementary matters resource consent application, Ryder, November 2017.

<sup>&</sup>lt;sup>13</sup> Dr Rankin evidence in chief, paragraph 145.

<sup>&</sup>lt;sup>14</sup> S199 (1)(b) RMA.

provide an acceptable balance<sup>15</sup>. The recreation evidence of Mr Greenaway is relied upon heavily in legal submissions<sup>16</sup>, planning evidence and overall assessment of the impacts of the takes<sup>17</sup>. However, it is my opinion that the analysis of impacts on the white water recreation amenity is not expressed correctly, key elements are omitted, the analysis methodology used is flawed, and so the conclusions reached by the applicant are not correct.

- 17. Rather than refer to each and every situation where such issues arise I will illustrate a few of these matters with examples.
- 18. There is a pervading theme and presumption in the applicant's evidence that the proposed flow changes comply with the Water Conservation (Rangitata River) Order 2006<sup>18</sup> (WCO). This is based on the assessment of the effects being considered as minor. Our evidence shows that the effects are negative and significant, and more than minor. Therefore, in my opinion it is not appropriate to say that the flow changes comply with the WCO. They clearly breach the WCO, as they do not protect and retain key flows of value to kayakers and rafters needed to retain and maintain the recreation amenity. My understanding is that the aim of the WCO is to retain and not reduce the outstanding rafting and kayaking amenity and values.
- 19. Furthermore there is a presumption that the WCO sets minimum flows in order to protect the river's outstanding characteristics, features and values<sup>19</sup>. As discussed in my EIC<sup>20</sup> the WCO allows very low flows to be visited on the river. The minimum flows are so low (15 and 20 cumecs) that they are well below the marginally acceptable flows for beginner, intermediate, and advanced/expert kayakers and/or rafters, of 40, 45 and 55 cumecs, respectively<sup>21</sup>. Clearly the setting of such low flows in the WCO does not protect the white water recreation resource at all; it was done as a compromise to provide water for irrigation and electricity generation in times of low flows, possibly not realising the implications of setting such low flows (as we did not present evidence on flow requirements in the first Hearing into the WCO application).
- 20. There is a major omission in stating the impacts on the take and this relates to the losses of higher flows in the range 100 to 170 cumecs valued by intermediate kayakers, who will in a number of instances fall into the category of paddlers using the river for 'educational' purposes<sup>22</sup>. It is not just advanced/expert kayakers and/or rafters who lose access to days of high flows above 100 cumecs from their preferred flow band range (55-250 cumecs; 5.1 days lost from the existing 32.5 days, a 15.7%

<sup>&</sup>lt;sup>15</sup> Mr Greenaway supplementary evidence, paragraphs 8 & 9.

<sup>&</sup>lt;sup>16</sup> Ms Hamm legal submissions.

<sup>&</sup>lt;sup>17</sup> G Kemble *et al.*, Lake Klondyke: A Proposed Water Storage Facility, Prepared for: Rangitata Diversion Race Management Limited, Ryder Consulting, July 2016; D Greaves, Proposed Rangitata Diversion Race fishscreen and supplementary matters resource consent application, Ryder, November 2017.

<sup>&</sup>lt;sup>18</sup> Ms Hamm legal submissions, paragraph 32; Mr Greenaway supplementary evidence, paragraph 4.

<sup>&</sup>lt;sup>19</sup> Ms Hamm legal submissions, paragraph 13.

<sup>&</sup>lt;sup>20</sup> Dr Rankin evidence in chief, paragraphs 32-36.

<sup>&</sup>lt;sup>21</sup> Dr Rankin evidence in chief, paragraphs 44-52.

<sup>&</sup>lt;sup>22</sup> Ms Hamm legal submissions, paragraph 18.

reduction, rather than the figures quoted by Mr Greenaway and Ms Hamm<sup>23</sup>), but also intermediate kayakers who lose access to days of high flows above 100 cumecs from their preferred flow band range (45-170 cumecs; 4.0 days lost from the existing 24.1 days, an overall 16.6% reduction), or visitors to the river seeking a 'big' water flow experience with flows in the range of 100-170 cumecs.

- 21. Furthermore moderate flows are not enhanced by the take<sup>24</sup>, the number of days that flows are constrained in a narrow flow band, i.e., a loss in flow variability, occurs as a result of the take. This is a negative impact on the value of the white water resource and not a positive impact as implied by the applicant.
- 22. It is my opinion that the granting of this consent would itself represent a 'tipping point'<sup>25</sup> where the amenity for rafting or kayaking would be not be retained as required by the WCO. The loss of valued higher flows and flat-lining or constraining of flows in a narrow flow band all constitute significant reduction in flows of value, and availability of such flows, and significant loss in flow variability, and a loss in the educational opportunities for intermediate kayakers and a chance to experience 'big' water. There is no 'preservation (increase) of flows suited to educational white water activities' claimed by the applicant<sup>26</sup>, only losses.

## **EVIDENCE OF MR ROB GREENAWAY**

- 23. I agree that Mr Greenaway and I differ in our views as to the assessment of the scale of the adverse effect on the kayaking and rafting amenity as a result of the 10 cumec take<sup>27</sup>. I note that Mr Greenaway in general agrees with my hydrological assessment with regards to changes in flow band availability, it largely matches his. Mr Greenaway, however, differs in the interpretation of the changes, his view being that they are subtle whereas he claims in my view they are 'massive', including the river being 'flat-lined' between 98-100 cumecs<sup>28</sup>. Mr Greenaway also remains silent on the losses I have determined in flows above 100 cumecs, the constraining of flows between 98-100 cumecs, which he interprets as gains in flow availability, and the significance of these impacts.
- 24. The 'flat-lining' I have mentioned, which Mr Greenaway refers to and then discusses in paragraphs 23 to 27 of his supplementary evidence<sup>29</sup>, and which he attempted to illustrate by reference to various annual hydrographs to the Hearing, is not visible on the scale of the hydrographs he used. The 'flat-lining' I refer to has been used to describe the 'holding' or constraining of flows in the narrow flow band of 98-100 cumecs or thereabouts. This effect occurs as a result of the 10 cumec take between 132.6 and 142.6 cumecs taking all of the water it

<sup>&</sup>lt;sup>23</sup> Mr Greenaway supplementary evidence, paragraphs 8; Ms Hamm legal submissions, paragraph 18.

<sup>&</sup>lt;sup>24</sup> Ms Hamm legal submissions, paragraph 18.

<sup>&</sup>lt;sup>25</sup> Ms Hamm legal submissions, paragraph 22.

<sup>&</sup>lt;sup>26</sup> Ms Hamm legal submissions, paragraph 22.

<sup>&</sup>lt;sup>27</sup> Mr Greenaway supplementary evidence, paragraph 22.

<sup>&</sup>lt;sup>28</sup> Mr Greenaway supplementary evidence, paragraph 22.

<sup>&</sup>lt;sup>29</sup> Mr Greenaway supplementary evidence, paragraphs 22 to 27.

can above 132.6 cumecs. Above 142.6 cumecs only 10 cumecs is taken and so the residual modified flows in the river again follow the pattern of the existing flows in the river.

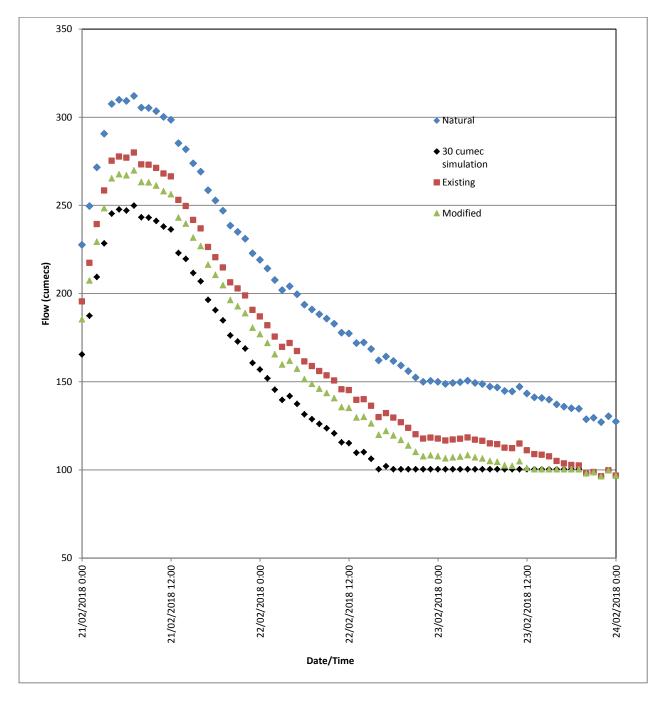


Figure 1. Natural, existing and modified flows determined on an hourly basis under the proposed changed RDRML 10 cumec take regime<sup>30</sup>, and a simulated take of 30

<sup>&</sup>lt;sup>30</sup> The new take regime embodied in the current revised consent conditions interrogates the natural flow at Klondyke on an hourly basis, and the RDRML will take all the flow of up to 10 cumecs at flows above 132.6 cumecs.

## cumecs to further illustrate the 'flat-lining' that can occur (a subset of the data in Figure 4, my EIC<sup>31</sup>)

- 25. This can be seen by examining the plots in Figure 1, where I show the natural, existing and modified flows in the river for a small recent fresh event, and plot the effects of a hypothetical 30 cumec take from the river, which I refer to in paragraphs 175 to 178 in my EIC. This plot is an [expanded] subset of the data I presented in Figure 4 of my EIC<sup>32</sup> (page 21, EIC).
- 26. If one examines the expanded fresh recession curve one can see that at 12:00 on 23 February the modified flow (green triangles) has finally dropped to a flow close to 100 cumecs (101.1 cumecs) and then for the following seven hours from 13:00 to 19:00 is flat-lined at 100.4 cumecs as a result of the take. This is the flat-lining I was referring to in my evidence. You will note that the flows are not flat-lined in the 98-100 cumec range, noted in the EIC of Mr Greenaway (based on data from Mr Veendrick) and myself. Do not be concerned about these differences; they arise because the data used in Mr Veendrick's calculations, and the data used by Mr Greenaway and myself in our EICs, include extra takes (including stock water and 3 cumecs for the fish screen bypass) whereas I have not included these in my current analysis.
- 27. Clearly this flat-lining would be hard to see in the annual hydrographs Mr Greenaway presented. Furthermore it could not be seen because the plots Mr Greenaway was using were based on mean daily flows, not mean hourly flows. These flat-lined flows are not desirable from a paddlers perspective as they reflect a loss in flow variability. The seven hours (0.29 days) these flows are flat lined on this fresh recession would contribute to the average annual loss of 5.6 days over the whole flow record where flows are held, or constrained, or flatlined as a result of the 10 cumec take.
- 28. On the surface of it one might conclude the changes in flow as a result of the take on during this fresh are all small but they illustrate what happens in reality for just one fresh event. There are a number of fresh/flood events each year but they will all have flows taken from them. Thus, as a result of the take during this fresh there would be:
  - (a) an overall loss of 5 hours (0.21 days, a 12.5% loss) out of 40 hours (1.67 days) in the 101-170 cumec valued higher flow range for intermediate kayakers
  - (b) an overall loss of 6 hours (0.25 days, a 11.1% loss) out of 54 hours (2.25 days) in the 101-250 cumec valued higher flow range for advanced/expert kayakers and for rafters
  - (c) a further loss where flows are constrained or flat-lined and flow variability is lost for 7 hours (0.29 days) in the 100-101 cumec flow band (a 233% increase).

<sup>&</sup>lt;sup>31</sup> Dr Rankin evidence in chief, Figure 4, page 21.

<sup>&</sup>lt;sup>32</sup> Dr Rankin evidence in chief, Figure 4, page 21.

- 29. The losses of 0.21 and 0.25 days and increase of 0.29 days would all contribute to the overall average annual losses of 4.0 days and 5.1 days and increase of 5.6 days, respectively, in the higher valued flow bands of 100-170 and 100-250 cumecs, and 98-100 cumecs (or close to 100 cumec flow) where flows are flat-lined, as discussed in my EIC (paragraphs 107 to 109). These percentage changes are all significant as discussed in my EIC, and certainly not minor or less than minor. The changes in flow from this fresh are all on the smaller side of the average changes discussed in my EIC (paragraphs 107 to 109) over the whole flow record. This is because the fresh is only a small one and would likely recede faster than a larger fresh, and so result in a lower level of loss of valued higher flows.
- 30. In contrast, applying Mr Greenaway's method for measuring the impacts he would conclude a gain of 2 hours or 1 hour overall, out of 43 or 57 hours in the 100-170 and 100-250 cumec flow bands, respectively, would correspond to <u>increases</u> in resource availability of 4.7% and 1.75%, respectively. However, as discussed previously these are 'artefactual' increases reflecting an inappropriate methodology.
- 31. With regards to Mr Greenaway's view that I claim changes as a result of the abstraction will be 'massive', Mr Greenaway has misquoted me. I do not make such a claim and to do so would not be correct. What I do say in my paragraph 175<sup>33</sup>, is that for <u>the hypothetical case</u> of an abstraction of 30 cumecs rather than 10 cumecs, the impacts of 'such a large take would be even bigger significant reductions in the availability of flows above 100 cumecs of value to kayakers and rafters, when compared with the 10 cumec take. In addition, the large takes would again massively increase the availability of flows in the 98-100 cumec flow band, but again, on average, by adding the lost and 'gained' days together, small 'increases' in days in key overall flow bands (e.g., 45-170, 80-170, and 55-250) would still occur.'. I clearly was not referring to the impact of the 10 cumec take. I was using a hypothetical 30 cumec take to illustrate the invalid nature of the method that Mr Greenaway uses.
- 32. In paragraphs 176 to 178, I go on to show that [the results of] Mr Greenaway's method never reaches a 'tipping point', as the (average) small increases in key overall flow bands for kayakers and rafters from the 30 cumec take would again allow Mr Greenaway to claim that the recreation amenity had been preserved and retained, 'when that would clearly not be the case with such massive high flow losses and constraining of flows in the 98-100 cumec flow band'<sup>34</sup>.
- 33. I conclude 'Thus 'adding' the decreases and increases in flow availability produces a result that makes the resource appear to be the same<sup>35</sup>, no matter how large the proposed take is, when in fact it would clearly not be the same.'<sup>36</sup>. Thus my use of the word massive was referring to the changes (both flow losses and constrained flows) that would occur with the hypothetical 30 cumec fresh/flood take, which

<sup>&</sup>lt;sup>33</sup> Dr Rankin evidence in chief, paragraph 175.

<sup>&</sup>lt;sup>34</sup> Dr Rankin evidence in chief, paragraph 176.

<sup>&</sup>lt;sup>35</sup> Mr Greenaway evidence in chief, paragraph 40.

<sup>&</sup>lt;sup>36</sup> Dr Rankin evidence in chief, paragraph 178.

was being used to illustrate the point that Mr Greenaway's method never properly represents the impact of such takes.

- 34. I have simulated the impact of a 30 cumec take on the fresh recession discussed in the preceding paragraphs (see Figure 1) to illustrate the impact of such a large fresh take. This shows an overall loss of high flows of 21 hours out of 40 hours (52.5%) and 20 hours out of 54 hours (37%) in the 101-170 and 101-250 cumec flow bands, respectively. Flows are flat-lined or constrained in the 100-101 cumec flow band from 18:00 on 22 February through to 19:00 on 23 February for 24 hours, a 800% increase on the 3 hours in this flow band under the existing flow regime.
- 35. In contrast, applying Mr Greenaway's method for measuring the impacts he would conclude a gain of 3 hours or 7 hours overall, out of 43 or 57 hours in the 100-170 and 100-250 cumec flow bands, respectively, would correspond to <u>increases in resource</u> <u>availability</u> of 7.00% and 7.02%, respectively. However, as discussed previously these are 'artefactual' increases reflecting an inappropriate methodology, showing no 'tipping point' has been reached according to Mr Greenaway, as well as hiding what is actually happening to the resource and the massive changes occurring.

# APPLICATION FOR CONSENT TO BUILD A WHITE WATER COURSE – CONSENT CONDITIONS

- 36. In supplementary evidence on behalf of Whitewater NZ<sup>37</sup> I have touched on building a white water course adjacent to the Klondyke Storage Pond outlet. Whitewater NZ believes a multi-feature course would be of far greater value to the community than what is proposed and also has concerns about the 'functionality' of the proposed standing/breaking wave feature designed by local engineers for the applicant. We believe that such features need to be very carefully designed and built to function effectively and produce an outstanding feature. Therefore we would like the consent to allow for the construction of such a facility and not restrict the applicant to the very limited facility that is described in their application.
- 37. If the consent to take water is granted, either with or without the mitigation described in paragraphs 150 to 156 of Dr Rankin's evidence in chief, we ask that the white water feature/course be an integral part of that consent, including consent conditions that the applicant design, build and operate the white water feature/course in conjunction with experts approved by Whitewater NZ and that the applicant maintain the amenity and provide unfettered use of it, and that the proposed take is contingent upon meeting these conditions for the duration of the consent. We have proposed some conditions to ensure the necessary investigations and design and build are carried out to ensure a successful valued course results and have discussed these briefly with RDRML. RDRML has agreed to talk with us further on the matter and draft a set of conditions for further discussion between us, and deliver these draft conditions to us today. I do not know whether we will be able to

<sup>&</sup>lt;sup>37</sup> Dr Rankin supplementary evidence, 22 April 2018.

land on a set of conditions which suit us both but we will inform you of where we get to before the adjournment of this Hearing at the end of this week.

Doug Rankin

Conservation Officer/Board Member Whitewater NZ