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**BEFORE THE HEARINGS PANEL**

*In the matter of* hearings on submissions concerning the  
Proposed One Plan notified by the  
Manawatu-Wanganui Regional Council

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**SUPPLEMENTARY STATEMENT OF EVIDENCE OF  
ARTHUR JOHN ROWLAND MALE**

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Dated: 24<sup>th</sup> February 2010

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## Introduction

1. I have prepared this supplementary evidence at the request of Mighty River Power Limited. My qualifications were outlined in my primary statement of evidence.
2. This supplementary evidence addresses:
  - (a) Recommended changes to the Proposed One Plan (POP) in terms of Schedule B and Policy 15–9;
  - (b) Supplementary evidence of Dr Jon Roygard; and
  - (c) Evidence of Mr Watts and Mr Brown on behalf of The Minister of Conservation.

## Proposed Changes to POP & Dr Roygard's Evidence

3. The changes recommended by council officers to Policy 15–9 specifically mention water storage, *including harvesting during periods of high flow in a water body*.
4. Harvesting of runoff even during times of high flow produces a change to the water balance within the catchment as it is a consumptive use. Such harvesting has the potential to significantly alter the flow distribution in the catchment leading to an impact on any hydro generation.
5. Further the flow regime could be potentially altered especially if there were to be a number of harvesting dams in a catchment. The effect of this is to impact such things as catchment flushing and potentially cause negative impacts to water quality and sediment transport within the channel.
6. With the demands that exist on our nation's water resources at times of low flow the temptation is to consider storage as the panacea solution. It should be considered with caution not only because of the impacts on hydrogenation but because it will change the dynamics within a catchment potentially leading to negative impacts.
7. The changes to Schedule B essentially move from a flow to a volume. Dr Roygard addresses this change in his supplementary evidence. The change seems reasonable and in terms of the significance of the change from the use of flows makes no difference to the situation for hydro generation and the statements I made in my primary evidence.
8. The situation has not changed in that flows affecting potential hydro generation locations need to be peer reviewed in terms of both the precision of the flow estimates that are up to 3 decimal points, or in effect to the closest litre, and the

rationality behind the allocations for each of the streams and rivers. Further the allocations for hydro generation need to be considered non consumptive and once granted treated as an essential use especially when minimum flow conditions occur.

### **Position of the Minister of Conservation**

9. Mr Watts and Mr Brown both seek to have the word *maintain* removed from the proposed changes to Policy 6-4. Their rationale for this is that including the word *maintain* could mean there is no improvement in water quality where standards are not currently met.
10. The concerns for hydro generators is that one of the mitigation measures that could be applied in situations where water quality is below standard is the use of changes to residual flow regimes and the requirement of flushing flows.
11. Hydro generators have no issue with managing their discharges for new schemes to maintain and enhance water quality if at all possible.
12. However it is not their responsibility to supplement a flow regime where water quality standards are not being met because of the performance of others within the catchment. Those who create the lowered water quality conditions should be responsible for the clean up.

**Arthur John Rowland Male**