

**BOARD OF INQUIRY**  
**HAUĀURU MĀ RAKI WIND FARM PROPOSAL**

In the matter of the Resource Management Act 1991

And

In the matter of resource consent applications by Contact Wind Limited in respect of the Hauāuru mā raki Wind Farm Proposal

And

In the matter of notices of requirement and a resource consent application by Contact Energy Limited for transmission infrastructure related to the Hauāuru mā raki Wind Farm Proposal

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**REBUTTAL EVIDENCE OF PETER WILLIAM MILLAIS**

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## Introduction

1. My name is Peter William Millais. I am a Senior Water Resources Engineer with Beca Carter Hollings & Ferner Limited ("Beca") based in Auckland.
2. I refer the Board of Inquiry to the statement of my qualifications and experience in my evidence in chief. I reaffirm my commitment to comply with the code of conduct for expert witnesses in the Environment Court.
3. The purpose of this brief of evidence is to respond to the evidence of:
  - (a) Dr Keesing relating to the proposed water take from Whitford Quarry spring;
  - (b) Mr Dawson relating to recommended consent conditions for the proposed water takes;
  - (c) Mr Lake relating to mitigation for the proposed water takes;
  - (d) Mr Austin relating to the possible effect of proposed works at the Orton switchyard on water quality in the Punga Punga Drainage Scheme from which he takes water; and
  - (e) Mr Kiernan relating to the possible effect of proposed works at the Orton switchyard on water quality in the Punga Punga Drainage Scheme from which he takes water, and on his access to water.

## Proposed water take from the Whitford Quarry spring

4. Dr Keesing (Paragraph 1.18) and Mr Dawson (Paragraph 34 and Table 2) have proposed a new condition 3 for water take consent WRC 117920 that "*The intake for the Whitford Quarry spring shall be no closer than 20 metres to the spring head and shall be constructed, operated and maintained so that the intake does not affect upstream water levels within 20 metres of the spring head*". This condition is highly undesirable from a water quality perspective, because resulting bacterial contamination will increase the level of treatment required to provide potable water for the construction workforce.
5. The stated rationale is to "*ensure that the proposed take will not directly affect the water levels within the spring head itself.*" I understand the concern that a lowering of the water level at the spring head could reduce the flow at nearby springs. I propose that concern be addressed by an alternative condition that "*The water level at the spring head shall be measured before and after spring cap construction. The spring cap shall be constructed, operated and maintained so that it does not cause the water level at the spring head to vary by more than 100 mm.*"

### **Operational limits on water abstraction**

6. Mr Dawson (Table 2) has proposed two modifications of Condition 7 for water take consents WRC 117913-117616, which relates to the criteria for ceasing water abstraction to control the temperature effects of the abstraction.
7. One modification specifies that the stream temperature is measured at an unshaded position. I accept this.
8. The other modification proposed by Mr Dawson *“to make the condition simpler”* deletes the application of the condition only to times when the flow of the Naike Stream at Kaawa School Road is below the 61 litres per second mean annual low flow (MALF) at that location. In my view, this proposed modification is not acceptable or reasonable. Its effect would be that instead of losing 5/24<sup>ths</sup> of the potential stream takes for a few days when stream flows are below MALF, the permitted abstraction is potentially reduced by 5/24<sup>ths</sup> of the potential stream takes for much of the summer. The MALF limit for this condition was inserted because the proposed takes are only about 2% of the MALF (see Table 1, Paragraph 35 of my evidence in chief), so when stream flows are higher than MALF, the takes will have negligible effect on stream temperature.

### **Mitigation for the proposed water takes**

9. Mr Lake (Paragraph 34) has proposed fencing and planting of 400 metres of stream banks as offset mitigation to compensate for increased stream temperatures.
10. I note that stream temperature effects of the water takes are proposed to be controlled by Condition 7 for water take consents WRC 117913-117616, therefore in my view the suggested requirement for additional mitigation is not warranted.

### **Mr Austin**

11. Mr Austin takes water from the Punga Punga Drainage scheme, where the main drain (Kowhai Stream) crosses Churchill Road adjacent to the access road to 1127 Churchill Road (the Partridge property). This access road is likely to be used for construction of two transmission line towers. The Orton switchyard is located within the Punga Punga Drainage scheme catchment; it will be accessed from Otoiti Road (east of the switchyard).
12. Mr Austin’s concern is that the water quality in the Punga Punga Drainage scheme will be detrimentally affected by runoff from the construction sites (Paragraph 12). He is also concerned about the effectiveness of any water quality testing and the timing of any

remedial work (Paragraph 14). He suggests (Paragraph 15) that a water bore be established on his property to mitigate his concerns.

13. During construction there is the potential for dust or silt-laden stormwater runoff to enter the drainage system. Erosion and sediment will be managed as described by Mr James in Paragraphs 190-197 of his evidence in chief. Construction at the site is proposed to be subject to the conditions of land use consent WRC 117927, which specify the requirements for erosion and sediment control and for water quality monitoring in receiving streams. I concur with Dr Keesing (Paragraph 1.26) that under these conditions the risk of an adverse event is low and that the result of a failure of protection methods would not be significant for the duration of the activity.
14. I note also that Contact Energy (Paragraph 149 of Mr Mills' evidence in chief) would be agreeable to a condition that provides Mr and Mrs Austin (and any other neighbours who draw water on the same scheme) necessary assurance that their potable water supply will be maintained in the event the Punga Punga scheme is adversely affected by the proposed works.
15. After construction there will be no silt generation from the site. Stormwater runoff from the switchyard will be collected and treated in grassed swale drains prior to discharge. The stormwater will be discharged to one or more soak pits, if found practicable following geotechnical investigation, or into the existing surface drainage network. The flow path from the switchyard to the Kowhai Stream is over 300 metres, so I do not believe there is a credible risk to water quality of the stream. There will be a toilet and washroom facilities at the switchyard: on site wastewater treatment and disposal will be provided in accordance with good practice.
16. I consider that Mr Austin's suggestion of a water bore to mitigate his concerns is not warranted.

### **Mr Kiernan**

17. Mr Kiernan also takes water from the Punga Punga Drainage scheme, and has the same concerns over the effects on water quality and the effectiveness of water quality testing that I have addressed above in response to Mr Austin.
18. Mr Kiernan is also concerned (Paragraphs 28 and 30) that the existing access to the Partridge property will be upgraded to become the main access to the Orton switchyard, and that such an upgrade would require an entranceway from Churchill Road at the point where he draws water, blocking his access to the water.

19. As noted above in my response to Mr Austin, the existing access to the Partridge property will not become the main access to the Orton switchyard, but is likely to be used for construction access for two transmission towers. Any temporary road access for the transmission line construction can readily be designed to not obstruct the existing water takes.

**PW Millais**