

**IN THE ENVIRONMENT COURT  
WELLINGTON REGISTRY**

**I TE KŌTI TAIAO O AOTEAROA  
TE WHANGANUI-A-TARA ROHE**

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**ENV-2023-WLG-000005**

**UNDER** the Resource Management Act 1991

**IN THE MATTER** the direct referral of applications for resource consents and notices of requirement under sections 87G and 198E of the Act for the Ōtaki to North of Levin Project

**BY** **WAKA KOTAHI NEW ZEALAND TRANSPORT AGENCY**  
Applicant


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**STATEMENT OF EVIDENCE OF MICHAELA JAYNE STOUT ON BEHALF OF THE  
MANAWATŪ-WHANGANUI REGIONAL COUNCIL**

**SURFACE WATER TAKE AND ALLOCATION**

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Dated: 26 September 2023

  
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**STATEMENT OF EVIDENCE OF MICHAELA JAYNE STOUT****A. INTRODUCTION**

- [1] My name is Michaela Jayne Stout. I hold the position of Scientist – Water Allocation at Horizons. I have been in this position since September 2021.
- [2] I prepared a report on the application required by section 87F of the Resource Management Act 1991 on behalf of Manawatū-Whanganui Regional Council (**Horizons**) and Greater Wellington Regional Council (**GWRC**), dated 28 April 2023 (**s87F Report**).
- [3] In my s87F Report, I reviewed the application from Waka Kotahi for resource consent applications lodged with Horizons and the GWRC relating to the Ōtaki to North of Levin Highway Project (the **Ō2NL Project** or **Project**). My s87F Report provided recommendations to improve or further clarify aspects of the resource consent application addressing surface water take and allocation within the Horizons region.
- [4] I confirm I have the qualifications and experience set out at paragraphs 7-11 of my s87F Report.
- [5] I participated in the following expert conferencing on water takes and abstraction:
- (a) Water abstraction on 26 July 2023, resulting in a joint witness statement dated 26 July 2023 (**July Water Abstraction JWS**);
  - (b) Water Abstraction and Planning on 16 August 2023, resulting in a joint witness statement dated 16 August 2023 (**Water Abstraction and Planning JWS**); and
  - (c) Water abstraction on 24 August 2023, resulting in a joint witness statement dated 24 August 2023 (**August Water Abstraction JWS**).
- [6] I confirm the contents of the July Water Abstraction JWS, Water Abstraction and Planning JWS, and August Water Abstraction JWS.

[7] I discuss any remaining issues and/or related conditions below.

**B. CODE OF CONDUCT**

[8] I repeat the confirmation provided in my s87F Report that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. This evidence has been prepared in accordance with that Code. Statements expressed in this evidence are within my area of expertise, except where I state I am relying on the opinion or evidence of other witnesses.

**C. SCOPE OF EVIDENCE**

[9] My report will cover the following:

- (a) The extent to which issues identified in my s87F Report have been resolved through Waka Kotahi evidence, expert conferencing and mediation;
- (b) Section 274 party evidence; and
- (c) Conditions.

[10] In addition to the material I reviewed for my s87F report, in preparing this evidence I have reviewed the following:

- (a) The joint witness statement of freshwater ecology experts dated 7 August 2023 (**Freshwater Ecology JWS**);
- (b) The joint witness statement of planning experts dated 10, 11, and 14 August 2023 (**Planning JWS**);
- (c) The statement of evidence of Mr Mike Thompson and Mr Logan Brown on behalf of the Regional Councils, dated 26 September 2023;
- (d) Ms Ainsley McLeod's statement of evidence on behalf of Waka Kotahi dated 4 July 2023;
- (e) Dr John (Jack) McConchie's statement of evidence on behalf of Waka Kotahi dated 4 July 2023; and

- (f) The conditions filed by Waka Kotahi on 4 September 2023 (**Waka Kotahi conditions**).

**D. OUTSTANDING ISSUES**

[11] On review of the issues in dispute arising from my s87F Report, the July Water Abstraction JWS, the Water Abstraction and Planning JWS, the August Water Abstraction JWS and the Waka Kotahi conditions, I am of the view that the following issues remain outstanding for surface water take and allocation:

- (a) Standard water measurement and reporting conditions for compliance monitoring;
- (b) Expiry of consents on completion of construction (if earlier than 10 years);
- (c) Koputaroa at Tavistock Road hydrometric site maintenance and data provision; and
- (d) Waikawa Stream cease-take flow (core allocation).

[12] I address these issues in turn below.

**Standard water measurement and reporting conditions for compliance monitoring**

[13] In my s87F Report, I recommended the inclusion of standard water metering and telemetry conditions.<sup>1</sup> I made this recommendation because, in my view, the condition set included with the initial application did not reflect the minimum requirements of Horizons' standard conditions/approach.

[14] The proposed conditions recommended in Ms McLeod's statement of evidence filed on 4 July 2023 did not reflect this recommendation.

[15] Subsequently, the following was agreed in the July Water Abstraction JWS:

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<sup>1</sup> Section 87F Report, at paragraph [150].

All agree to amend RWT1(f) to say “for each water take a flow meter must be installed and maintained, and the provision for the transfer of data by telemetry, provided in accordance with standard conditions of the consenting authorities”.

[16] To reflect this outcome, Mr Thompson and I merged the standard GWRC and Horizons condition sets into a single suite of conditions. Our aim was to minimise repetition within the conditions and maintain the minimum requirements of both Councils’ standard condition sets.

[17] This ‘merged’ standard condition set was made available for the planning expert witness conference on 10 August 2023. Following on from this, a further expert conference between the water abstraction and planning experts took place, however, agreement could not be reached on the inclusion of standard conditions for water measuring devices/systems.<sup>2</sup>

[18] The metering and monitoring conditions have been limited to the following in the Waka Kotahi conditions:

g) Prior to the taking of water authorised by these resource consents, for each water take:

- i. a flow meter must be installed to measure and report water takes in real time;
- ii. an automatic backflow prevention device must be installed within the pump outlet plumbing or within the mainline;
- iii. an intake screen must be installed with a mesh size not exceeding three (3) millimetres in diameter.

h) For each water take, the intake velocity through the intake screen required by clause (g)(iii) must not exceed 0.3m/s.

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<sup>2</sup> Joint Witness Statement – Water Abstraction and Planning, 16 August 2023, at page 8.

- [19] In my view, these conditions are too narrow, and do not meet Horizons' minimum requirements for the measuring and reporting of water takes.
- [20] Notably, the proposed conditions do not include installation and maintenance standards for water meters, data loggers, and telemetry units that Horizons environmental data staff have deemed necessary to support robust compliance monitoring. Therefore, in my view, the proposed conditions do not support robust compliance monitoring processes.
- [21] I understand that Horizons' standard conditions also reflect the requirements of the Resource Management (Measurement and Reporting of Water Takes) Regulations 2010 (2020 Amendment) (the **Regulations**).
- [22] I have reviewed the evidence of Mr Thompson and Mr St Clair and agree with their recommendations regarding the conditions reflecting the Regulations.
- [23] I recommend that proposed conditions (g) and (h) (as above) are deleted from the Waka Kotahi conditions and replaced with the suite of conditions agreed with Mr Thompson. I have provided these conditions to Mr St Clair, and these have been reflected in the conditions attached to his evidence (with some minor drafting changes which I support). The recommended conditions will ensure that water use data is collected and shared in accordance with each Council's standard procedures and the Regulations. Mr St Clair addresses these conditions further in his evidence.

**Expiry date (allocation efficiency)**

- [24] Waka Kotahi have sought a 10-year consent duration for the construction phase consents.
- [25] In my s87F report, in response to Wellington Fish and Game Council's submission, I recommended that the consents to take water expire at the earlier of (a) the 10-year consent term sought or (b) the actual active construction period, which is expected to be 4-5 years.<sup>3</sup>

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<sup>3</sup> Section 87F Report, at paragraph [154].

- [26] Dr McConchie's statement of evidence recommended that the consents be surrendered following completion of construction or after 10 years, whichever comes first.<sup>4</sup>
- [27] Despite the recommendations made in both my s87F Report and in Dr McConchie's statement of evidence, this change has not been reflected in the Waka Kotahi conditions. In my view, the term should be limited to the construction period, as described in the consent application.
- [28] This approach would improve the efficiency of the allocation of water to Waka Kotahi. If the consents are not limited to the active construction period, which is anticipated in the consent application to be less than the 10 years, then all the allocated water will be unavailable to other users from the time construction ends until the consents expire.
- [29] In my view, the term of the consent should be limited to the construction period, in order to ensure the efficiency of the allocation. Mr St Clair addresses the planning implications of this recommendation in his evidence.

**Koputaroa at Tavistock Road hydrometric site maintenance and data provision**

- [30] Waka Kotahi is proposing to limit the rate of water abstraction under both the core and supplementary allocation regimes based on actual stream/river flow. Therefore, reliable river flow data is required to support robust compliance monitoring.
- [31] At the time Waka Kotahi was preparing its application, Horizons did not have a hydrometric site measuring flow across the full flow range on the Koputaroa Stream. To address this, Waka Kotahi proposed to measure stream flow and to monitor compliance of its take based on their own hydrometric site at Tavistock Road.
- [32] Horizons' Environmental Data team have recently installed a hydrometric site at Tavistock Road. I understand that the site will provide a reliable

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<sup>4</sup> Statement of Evidence of Jack McConchie, 4 July 2023, at paragraphs [273] – [277].



prediction of flow across the full flow range by the end of 2023.<sup>5</sup> This means that the Horizons hydrometric site will be suitable for monitoring compliance of the proposed abstraction from the Koputaroa Stream from early 2024.

[33] Therefore, I recommend that all references to the Koputaroa at Tavistock hydrometric site be amended to refer to 'Horizons' hydrometric site at Koputaroa at Tavistock Road'. This results in the abstraction being monitored based on Horizons' site, rather than Waka Kotahi's site. This is consistent with the approach proposed for all other abstractions in the Horizons region.

[34] This change will remove the need for the condition requiring Waka Kotahi to telemeter stream flow data from their hydrometric site at Tavistock Road. It will also resolve the outstanding matter regarding maintenance of Waka Kotahi's site, as it will not be necessary to use the site for compliance.

[35] As the Horizons hydrometric site is not expected to provide a reliable prediction of flow across the full flow range until the end of 2023, the hydrometric site will not be available for compliance purposes until the beginning of 2024. According to the indicative construction programme outlined in the application,<sup>6</sup> I understand that early construction activities are not expected to commence until mid-2024. While the application does not suggest that abstraction will commence prior to the hydrometric site being available for monitoring, in my view, it is still prudent to include a condition stating that the abstraction must not be utilised until 2024.

[36] If use of the Horizons hydrometric site is not accepted by Waka Kotahi or the Court, the condition requiring Waka Kotahi to telemeter data from their hydrometric site at Tavistock Road will need to remain. In that case, it is my opinion that it should be amended to reflect Horizons' requirements. Further, the maintenance/management of Waka Kotahi's site at Tavistock Road remains an outstanding issue. In this regard, I note:

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<sup>5</sup> B. Watson, personal communication, 13 September 2023.

<sup>6</sup> Volume II – Notices of Requirement for a Designation and Application for Resource Consents: Supporting Information and Assessment of Effects on the Environment Section 14.2 Indicative Construction Programme.

- (a) The condition requiring telemetry of flow data from the Waka Kotahi site needs to reflect Horizons' requirements and standards for data transfer. This will ensure that data is telemetered to (received by) Horizons in a way that is compatible with Horizons' systems. Otherwise, it will be difficult to monitor compliance.
- (b) If Waka Kotahi wishes to use its own site for compliance monitoring purposes, in my view there should be a condition requiring the site to be managed in accordance with the National Environmental Monitoring Standards<sup>7</sup> as far as reasonably practicable. The condition will ensure that maintenance of the monitoring site is in line with industry best practice. As a result, this will support robust compliance monitoring processes, as flow measurements from properly maintained sites are more reliable than flow measurements from poorly maintained sites.

#### **Waikawa Stream cease-take flow (core allocation)**

[37] The cease-take flow from the Waikawa Stream is an outstanding matter. The effects being managed through the proposed cease take flow are explained in Mr Brown's statement of evidence.<sup>8</sup>

[38] The Freshwater Ecology JWS states that:

All agree that takes from the Waikawa Stream should cease when the flow at the abstraction site is at the minimum flow set in the One Plan for the protection of instream values below the abstraction site.

[39] For context, it is helpful to briefly summarise the derivation of the flow relationship between the Waikawa at North Manakau Road hydrometric site and the abstraction sites, and the derivation of a cease take flow that reflects this relationship and gives effect to the Freshwater Ecology JWS.

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<sup>7</sup> National Environmental Monitoring Standard – Open Channel Flow Measurement. <https://www.nems.org.nz/documents/open-channel-flow-measurement/>

<sup>8</sup> Statement of Evidence, Mr Logan Brown, 26 September 2023, paragraphs [15]-[18].

[40] The flow relationship between the Waikawa at North Manakau Road hydrometric site and the proposed abstraction sites was examined in my s87F Report.<sup>9</sup>

[41] In summary, I located five paired gaugings taken at the North Manakau Road hydrometric site (upstream of the proposed abstraction sites) and the SH1 gauging site (downstream of the proposed abstraction site) that had been taken when flow at the North Manakau Road hydrometric site was below the median flow. Plotting these five gaugings yielded the following relationship:

$$\text{Flow at SH1 gauging site (m}^3\text{/s)} = (0.8857 \times \text{flow at North Manakau Road hydrometric site (m}^3\text{/s)}) - 0.0042$$

[42] Because the proposed abstraction sites are located between the North Manakau Road hydrometric site and the SH1 gauging site, the plotted relationship likely over-estimates the streamflow losses that occur between the North Manakau Road hydrometric site and the abstraction sites. An over-estimation of streamflow losses in this case will result in a more conservative approach to managing the water takes. Given this, and the level of uncertainty at play, I am comfortable for flow at the proposed abstraction sites to be estimated using the following simplified relationship:

$$\text{Flow at proposed abstraction site} = 0.9 \times \text{flow at North Manakau Road hydrometric site}$$

[43] In practical terms, this means that flow at the proposed abstraction sites will be assumed to be 90% of the flow measured at the North Manakau hydrometric site.

[44] No alternative flow relationship has been put forward by Waka Kotahi since my s87F Report, and this simplified relationship is reflected in the amended rate of take conditions set out and agreed to in the Water Allocation and Planning JWS, and in the Waka Kotahi conditions.

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<sup>9</sup> Section 87F Report, at paragraphs [85] – [89].

- [45] I have therefore used this relationship to recommend an alternative cease take flow that gives effect to the position recorded in the Freshwater Ecology JWS.
- [46] As there are losses of streamflow between the Waikawa at North Manakau Road hydrometric site and the proposed abstraction sites, the cease take flow at the Waikawa at North Manakau Road needs to be set higher than the One Plan minimum flow to achieve the outcome sought by the ecologists (i.e. to maintain the One Plan minimum flow at the proposed abstraction site).
- [47] The One Plan minimum flow for the Waikawa Stream and subzone is 0.220 m<sup>3</sup>/s. Based on the relationship outlined above, a cease take flow of 0.244 m<sup>3</sup>/s at the Waikawa at North Manakau Road hydrometric site will be required to maintain the One Plan minimum flow at the proposed abstraction sites. See working below:

Flow at proposed abstraction site = 0.9 x flow at North Manakau Road hydrometric site

∴ Flow at proposed abstraction site (0.220 m<sup>3</sup>/s) / 0.9 = flow at Waikawa at North Manakau Road hydrometric site (0.244 m<sup>3</sup>/s)

- [48] Having regard to the Freshwater Ecology JWS, and the evidence of Mr Brown, I recommend that (adopting the methodology set out above) the cease-take flow on the Waikawa Stream be set at 0.244 m<sup>3</sup>/s.

## **E. RESOLVED MATTERS**

- [49] Other than the issues outlined above, there are no outstanding issues arising from my s87F Report. These issues have been resolved through the July Water Abstraction JWS, the Water Abstraction and Planning JWS, the August Water Abstraction JWS, further discussions with technical experts, or the Waka Kotahi conditions.
- [50] In particular, I note the following amendments to conditions:<sup>10</sup>

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<sup>10</sup> Pages 64-67 of Waka Kotahi Conditions (Tracked Changes Version).

- (a) RWT1(b), Table RWT1.1 – The maximum daily rate of take from the Waikawa Stream has been corrected to reflect the maximum daily volume sought;
- (b) RWT1(b), Table RWT1.2 – The conditions have been amended to reflect the flow relationships between the hydrometric sites and proposed abstraction sites, and concerns about how the rate of take would be managed;
- (c) RWT1(c), Table RWT1.4 – This has been amended to reflect flow relationships between the hydrometric sites and proposed abstraction sites, agreed median (i.e. turn on/off) flows, and concerns about how the rate of take would be managed; and
- (d) RWT1(f), Table RWT1.5 – This has been amended to address the potential effects of the rate of take during low flows due to uncertainty around the flow relationship between the hydrometric site and proposed abstraction on the Koputaroa Stream.

## **F. CONDITIONS**

[51] I have reviewed the Waka Kotahi conditions. I am satisfied with the conditions, except with regard to the issues I have set out above. In order to address the issues I have identified, I recommend the following:

- (a) Deletion of proposed conditions RWT1(g) and (h) and the addition of the conditions in Mr St. Clair's evidence. This recommendation is reflected in Mr St. Clair's statement of evidence.
- (b) The term of the water abstraction consents is limited to the conclusion of the actual active construction period.
- (c) All references to the Koputaroa at Tavistock Road hydrometric site (worded differently throughout conditions) be replaced with 'Horizons' hydrometric site at Koputaroa at Tavistock Road' (with the deletion of RWT1(i)). Otherwise (as an alternative, but not preferred approach), there will need to be changes to the conditions

(including RWT1(i)) relating to the telemetry of data from the Waka Kotahi site and maintenance of the Waka Kotahi flow recorder.

- (d) Inclusion of a condition stating that the abstraction from the Koputaroa Stream must not be utilised until 2024.
- (e) A cease take flow of 0.244 m<sup>3</sup>/s for the Waikawa Stream (measured at Waikawa at North Manakau Road).

[52] I have also recommended a number of other minor changes for clarity, and consistency. I understand that Mr St Clair has reflected these matters (which do not change the substantive effect of the condition) in his evidence.

**26 September 2023**

**Michaela Jayne Stout**