

Simon White

91 Drumpeel Rd

RD1

Otane

19<sup>th</sup> November 2021

Dear Simon,

This letter relates to an application underway to gain resource consent from the Hawkes Bay Regional Council to access water for irrigation.

The proposed pivot designs show the irrigation could cover around 63ha depending on the layout chosen. A scenario prepared in Overseer models irrigation of 61.2ha, an indicative area modelled to illustrate the concept with the drains crossing paddocks removed from the total irrigable area using variable rate irrigation targeted to location and crop needs. The exact area to be irrigated would be optimised during the design of the system and may not be 61.2ha. Irrigation scheduling would be based on soil moisture monitors installed to trigger irrigation when a minimum soil moisture level is reached, up to a maximum optimum level.

The stocking policy on the farm would change significantly from that demonstrated in the years 2017-2021 with a reduction in cattle over the year, replaced with cropping, and lamb trading over winter. The ability to use irrigation to get grass started well should allow some "mop up" of the autumn nitrogen flush traditionally seen in dryland areas, and the smaller urine patches of lambs compared to dairy grazers should result in a more even spread and increased plant uptake of urinary nitrogen. Crops and fertiliser would be targeted to ensure soil structure and health are maintained, and the nitrogen leaching limit is continually achieved on the basis of a four-year rolling average.

The scenario with irrigation and an increased cropping and lamb trading policy showed a modelled N loss to water of 22kgN/ha/year, a reduction from the typical modelled leaching under the current dairy grazing programme. Scenarios for the property under irrigation, and with the intention to manage that irrigation according to best practice and within nitrogen limits, demonstrates the property can continue to operate within the Tukituki N Leaching Limits with the addition of irrigation, potentially with an improved environmental performance to the benefit of ground and surface water quality.

Kind regards

A handwritten signature in black ink, consisting of a large, stylized loop followed by a long horizontal stroke.

Emma Buchanan