Before the Independent Hearings Panel
at Waimakariri District Council

under: the Resource Management Act 1991

in the matter of: Proposed private plan change RCP31 to the Operative Waimakariri District Plan

and: **Rolleston Industrial Developments Limited**
Applicant

Summary of evidence of Laura Drummond

Dated: 3 August 2023

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SUMMARY OF EVIDENCE OF LAURA DRUMMOND

1 My full name is Laura Rose Drummond.

2 I am a Technical Director – Ecology at the environmental consulting firm Pattle Delamore Partners Ltd (*PDP*). I have a Bachelor's degree in Science (2006) and a Master's degree in Ecology (2012) from the University of Canterbury. I am a member of the New Zealand Freshwater Sciences Society.

3 I have 15 years of experience in freshwater ecology consulting and research. I have been employed by PDP since April 2018, where I specialise in surface water quality and freshwater ecology projects.

4 My evidence is supplementary to the statement of evidence by **Mr Mark Taylor** who prepared the Ecological Assessment that was submitted as part of the Plan Change RCP31 (*PC31*) application.

5 I am familiar with the plan change application by Rolleston Industrial Developments Limited (the *Applicant*) to rezone approximately 156 hectares of land on Whites Road, Ōhoka to enable approximately 850 residential sites and a small commercial zone. I have attended a site visit where I have seen the current condition of the waterways and springs on site.

SUMMARY

6 The plan change has the potential to improve the ecological condition of spring-fed waterways and spring heads within the site. The site is currently a dairy farm, and historical land use has resulted in highly modified waterways for land drainage purposes. With careful landscape design, there is potential for the site to contain highly naturalised and enhanced watercourse corridors and spring heads. In particular, there is an opportunity to link the reach of Ōhoka Stream within the site to the reach within the Ōhoka Bush, downstream of Whites Road, to increase in the length of the naturalised Ōhoka Stream ecological corridor and improve not only instream conditions, but overall biodiversity values in the area.

7 The provided minimum setback distances from waterways on the site (springheads and watercourses) and the requirement for an Ecological Management Plan will provide controls on potential ecological impacts to the site. The removal of dairy farming activities from this site will also result in a reduction in agricultural contaminants in the waterways on site and downgradient (nitrogen, phosphorus, sediment and *Escherichia coli* (*E. coli*), which are elevated in downgradient waterways.

8 Careful design and mitigation strategies will be required to provide ecological betterment to both the onsite waterways and those

downstream. The amended ODP and associated text now incorporates these measures and accordingly I support PC31 insofar as freshwater bodies and ecosystem values are concerned.

RESPONSE TO SUBMITTER EVIDENCE

9 Evidence was submitted on behalf of Canterbury Regional Council by Dr Greg Burrell on freshwater ecology, dated 13 July 2023. This evidence discussed the potential ecological effects of the plan change being limited by impacts to the hydrology of the site and the proposed setback distances.

10 In paragraphs 29 and 30, Dr. Burrell discusses the key adverse ecological effect associated with PC31 being the impact or urbanisation on the hydrology of waterbodies. I agree with Dr Burrell that the potential to improve the ecological value of the waterways on site is reliant on maintaining hydrological connections. Mitigation of groundwater flow paths and minimum buffer distances from springs therefore need to be established at the plan change stage in order to reduce uncertainty in effects.

11 As outlined in the evidence of **Mr Veendrick**, the highest risk of reduced spring flow and spring water levels is from shallow groundwater being intercepted by the construction of service trenches and hardfill areas (such as roads), which could reduce groundwater flow to the springs. I agree that controls should be put in place to avoid short circuiting groundwater and to avoid a reduction in spring ecological value. Methods to achieve this are provided in the evidence of **Mr McLeod** and **Mr Veendrick**. With the construction methods available and the updated monitoring specified in the ODP text for both groundwater and surface water, I consider appropriate controls can be implemented to maintain the hydrology of the springs on site.

12 In paragraph 32 Dr. Burrell discusses the potential for activities within 100 m of wetlands being restricted, with comment on the PC69 (Lincoln) setback of 100 m. I agree that within a 100 m buffer of identified springs mitigation should be put in place, as discussed in the evidence of **Mr Veendrick**. However, I consider a 30 m setback for the northern and southern springs is appropriate for this site. This is a change from my evidence in chief, which proposed a 20 m setback for the northern spring and 30 m setback for the southern spring. The northern spring buffer distance has been increased to provide the same level of protection for both spring heads and to enable a higher level of enhancement. A 20 m setback has been retained for the groundwater seep, which has a much smaller volume of water flowing from it and a lower level of enhancement potential compared to the northern and southern springs. I was involved with the development of the 100 m setback for springs/wetlands at the PC69 site, this distance was determined as a result of the very high ecological value of the

extensive spring fields on site, which were clustered together. A larger setback at that site protected the hydrology of the springs and waterways within the site more effectively. This is not considered required at the PC31 site, where the two spring heads and the groundwater seep spatially isolated.

13 In paragraphs 33 to 35 Dr. Burrell discusses the waterway setback distances. In general (withstanding hydrology effects), it is agreed that the 15 – 20 m buffers proposed will help protect and enhance aquatic health and biodiversity of the perennial streams on site. One site (groundwater seep channel) has a buffer of 10 m, which is less than the 15 m minimum that Dr. Burrell has proposed. The evidence of **Mr Taylor** provides a response to the proposed rationale behind the distances chosen for each waterway. I agree with the reasoning of the 10 m buffer for the groundwater seep channel, noting the seep itself has a 20 m buffer and I consider that ecological improvement in this short channel length can occur with a 10m buffer, which would provide appropriate shading, overhanging vegetation and filtration in overland runoff.

14 In paragraphs 38 to 39 Dr Burrell discusses potential issues with landscape design, mentioning previous experience with Crime Prevention Through Environmental Design (CPTED) and pathway locations. It is my opinion that these details can be worked through at the subdivision design stage, when detailed landscape drawings are prepared. However, the ODP text has been updated to provide further clarity on the setbacks, as detailed in paragraph 15 below.

15 To provide additional assurance that the plan change will result in enhancement of these waterways, the ODP text has been updated to specify the following minimum requirements of the Ecological Management Plan, to provide controls on ecological betterment of the waterways on site. These include:

15.1 Groundwater, spring water level and spring flow monitoring investigation across the site to inform construction methodologies;

15.2 Riparian planting plans with a focus on promotion of naturalised ecological conditions, including species composition, maintenance schedules, and pest and predator controls;

15.3 Landscape design drawings of stream setbacks are to include input and approval from a qualified freshwater ecologist, with a minimum of the first 7 m of the spring and stream setbacks will be reserved for riparian vegetation only, with no impervious structures and pathways as far as practicable away from the waterway; and

15.4 Stream ecology monitoring (i.e., fish, invertebrates, instream plants and deposited sediment surveys).

16 With the measures to maintain hydrological connections outlined above, the updated hydrological monitoring and Ecological Management Plan, it is considered that ecological betterment can occur on site compared to current site conditions. I support PC31 insofar as freshwater bodies and ecosystem values are concerned.

Dated: 3 August 2023

Laura Rose Drummond