Before the Independent Hearings Panel

under: The Resource Management Act 1991

in the matter of: Submissions and further submissions in relation to the proposed Otago Regional Policy Statement (Freshwater parts)

submitter: **Fonterra Limited**
Submitter ID FPI019

Summary of evidence of Katherine McCusker

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Reference: B G Williams (ben.williams@chapmantripp.com)
K I G Jacomb (kirsty.jacomb@chapmantripp.com)

chapmantripp.com
T +64 3 353 4130
F +64 4 472 7111

PO Box 2510
Christchurch 8140
New Zealand

Auckland
Wellington
Christchurch

chapman tripp

SUMMARY OF EVIDENCE OF KATHERINE MCCUSKER

1 My evidence addresses the proposed restrictions on discharging wastewater directly to freshwater, taking into account the limitations that Fonterra has for land-based treatment at the Stirling site.

2 By way of a brief summary, my evidence concludes that in some scenarios, discharging highly treated wastewater to water is the only practicable option and/or provides the best outcome for the environment overall.

3 As a matter of good practice, stormwater and industrial and trade waste should be discharged into a reticulated system or to land, where and when it is available, unless alternative treatment and disposal methods to surface water will result in improved environmental outcomes.

4 The key considerations for when a discharge to water may be appropriate are:

4.1 When the level of treatment and the resulting contaminant load results in better environmental outcomes for the catchment and rohe.

4.2 If stormwater and wastewater discharges can meet any applicable water quality standards set beyond a reasonable mixing zone.

4.3 The lack of feasible alternatives due to a shortage of land when large volumes of wastewater are involved and the suitability of the land to for land discharges. The lack of suitable land maybe due to soil characteristics, being flood prone, the slope increasing the risk of erosion, not being suitable for cut and carry operations.

5 The Stirling site discharges treated wastewater to the Clutha River/Mata-Au under consent number 2007.636.V1. The biological treatment plant provides a high level of nitrogen and phosphorus removal from the wastewater. This means that the resulting potential for the growth of periphyton in the river is small. The consent requires an on-going monitoring programme to ensure water quality standards are met.

6 Before applying for their discharge to water consent Fonterra evaluated a range of options for the discharge.[1] A key consideration was that Fonterra has limited space available in the vicinity of the plant for the construction and ongoing operation of a wastewater treatment facility to land. The Fonterra Stirling site operates approximately 10.5 months per year but the surrounding area as a

[1] Evidence of Morgan Watt dated 28 June 2023.

long-term average only has soil moisture deficits in summer. This means that a land discharge system must either operate as a non-deficit system with saturated soils or have sufficient storage for a deficit discharge to land system with a very large storage pond. In my view, that would not be feasible.

7 I recognise the impact of discharges of stormwater and wastewater on freshwater bodies is a significant issue for mana whenua and has contributed to water quality issues in some Otago water bodies. However, wastewater discharges to water, when treated, can result in better environmental outcomes in terms of concentrations of contaminants compared to a discharge to land. Wastewater discharges that involve high volumes of water to saturated soils can result in high nitrate leaching or loss of other containments to water by overland flow or soil erosion if suitable land is not available.

8 If the Stirling plant discharged all their wastewater to land, they would be applying large volumes of wastewater to land that does not have a soil moisture deficit for most of the year.

9 A discharge that occurs solely to land will typically increase the time soils are saturated. This increases the risks to soil structure and of leaching and run off, which in turn increases the contaminant load to groundwater and other watercourses (such as streams and drains).

10 It is important to enable ongoing treated storm and wastewater discharges. I consider environmental outcomes can be met by reducing or otherwise managing the adverse effects of direct and indirect discharges of contaminants to water.