Before the Independent Hearing Panel
Appointed by the Central Otago District Council

Under	the Resource Management Act 1991
In the matter of	Private Plan Change 14 to the Central Otago District Plan

Supplementary evidence of Ricky Paul Larsen

25 May 2020

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Introduction

1 My name is Ricky Paul Larsen.

2 I have prepared a statement of evidence dated 13 May 2020. My qualifications and experience are set out in that statement.

3 I have read the evidence of Roger Gibson on behalf of Horticulture New Zealand. Mr Gibson identifies an area of Waenga 5 (**W5**) soils across the PC14 site and comments on the suitability of these *soils* for cherry orchards and vineyards.

4 This statement considers the suitability of that *area* of the PC14 site identified as containing W5 soils for a commercial cherry orchard.

5 Cherries require very specific growing conditions to ensure good fruit size, tree yield and high sugar content. This relies on a number of factors, and includes both physical environment and prevailing climatic conditions. Cherries can be grown in 'fringe areas' but the fruit will be small (24mm fruit will sell for under half 30+mm fruit), tree yields will be lower (8,000 kg per hectare compared to 12,500 kg + per hectare), and will not be sweet, firm, flavoured and crunchy which drives price premium

6 Successful growing conditions are detail in my evidence in chief at paragraphs 16 – 18. In relation to the area identified as W5 soils within the PC14 area, I comment on the following features:

Soils

7 Within the PC14 site, an overland flow path has been identified extending from the west gully and through the site, carrying surface water including flood flows from the Pisa Range (see Appendix H of the PC14 Request – Flood Hazard Assessment). I understand that that Open Space and Stormwater Corridor shown on the Structure Plan is intended to manage the overland flows that occur in this location. This particular area is unsuitable for cherry orchards because of the potential for flooding and because the cherries will otherwise be at risk of getting wet feet for prolonged periods of time. To avoid this flow entering the existing orchard, a channel has been constructed to divert water towards the road. I understand that similar protections will be in place for the cherry orchard extension.

Topography

8 As the W5 soil zone approaches the foothills of the Pisa Mountain range the slope increases in gradient beyond the 12 to 15 degree level deemed safe to operate machinery on and for pickers to safely use while harvesting fruit.

Frosts

9 Land within the W5 zone to the west of the proposed orchard area present risk of severe Katabatic frost streams rolling down of the Pisa Mountain range potentially causing catastrophic blossom or bud development damage and significantly reducing crop yield and fruit size / quality. A single event (<-5degree frost event) in early spring in 2018 caused a number of the orchards similarly positioned at the base of the mountain range to totally lose their entire crop.

Wind

10 The area to the west beyond the proposed cherry orchard extension sits in an exposed open valley susceptible to predominant north / east wind events. The proposed orchard area is nestled in behind a small hill range on the neighbouring Sanders' property and is protected from this prevailing wind stream. Positioning trees within this open valley area will risk significant tree and fruit damage in these regular events. A significant event in 2019 not only lifted rooves off buildings in Cromwell but resulted in significant fruit loss in a since decommissioned Leyser Apricot Orchard.

Block shape and row length

11 Cherry tree rows are planted in a north / south direction to optimise their exposure and use of sunlight. As the W5 zone moves west the width of this productive area narrows to a point that the length of a north / south row in this area is becomes unviable for normal orchard operations (spraying, mowing, mulching, picking, etc).

12 Regular shaped blocks are also preferred from a management perspective, particularly where the orchard is to be netted. Locating the 29 hectare orchard over the W5 soils would be a less efficient option in this regard.

13 Finally, location of the orchard extension adjacent to the existing orchard enables NZ Cherry Corp to take the most advantage of efficiencies arising from co-location of the orchards.

Water

14 Access to water is critical for commercial orchard operations. Water irrigation is required for frost fighting in September and October and tree irrigation from November through to March. The Cherry Orchard extension utilises the available water on this site. The productive potential of the remainder of the site is therefore limited. If water was used to enable production over the W5 soils, this would be at the expense of orchard development over other areas within the Horticulture area identified in the Structure Plan.

Conclusion

15 Notwithstanding the location of the generally preferable W5 soils, I remain of the opinion that, taking all relevant productive factors into account, the area identified for the cherry orchard extension is the best location, and that the productive potential of the PC14 site is constrained by availability of water.

Ricky Paul Larsen
25 May 2020