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 Peter Langdon Dymock

26 May 2020

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Introduction

1 My name is Peter Langdon Dymock.

2 I have prepared a statement of evidence dated 13 May 2020. My qualifications and experience are set out in that statement. I confirm that this supplementary evidence is also prepared in accordance with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014.

3 During presentation of my evidence to the Commissioners on 26 May 2020 I was asked to comment on ability to obtain additional water for irrigation on the PC14 site. This evidence summarises my response given.

Water source and availability

4 Additional water for the PC14 site can only be sourced from bores. Bores in this location would draw from the Cromwell Terrace Aquifer. The PC14 site is on the fringe of the aquifer.

5 Policies in the Otago Regional Plan: Water provide that the total annual allocation from all bores located on an aquifer is limited to no more than 50% of assessed annual recharge into the aquifer from all sources . In 2015 Plan Change 4C to the Regional Plan: Water set an allocation for the Cromwell Terrace Aquifer at 4,000,000m^3 per year. This allocation has now been largely taken up, with 611,992m^3 per year remaining available in theory as advised to me by the ORC.

6 If the PC14 site was able to take the whole allocation, this would equate to approximately 19 l/s, which is sufficient to support approximately 25ha of cherries. However, I consider it unlikely that ORC would grant the full remaining allocation to a single user. Consenting is becoming harder and harder. Applicants need to demonstrate that the take is sustainable and that there are no adverse effects on surrounding bores. This requires installation of a full production bore, undertaking a pump step test for 24 hours at the maximum rate of take, monitoring of adjacent bores, and in some cases obtaining a discharge consent for water abstracted. This information is then assessed by a groundwater scientist. In my experience the process will cost in the order of $50,000 - $60,000 with no certainty of outcome. Where drawdown in any surrounding bore is greater than 0.2 metres, an affected party approval is required from the owner of that bore. In my experience this is fatal to any application – I have never known a bore owner to provide this approval.

7 There is also the potential problem that the drawdown from the new well could adversely affect the yield from the existing well on the site which is the principle water source for the planned extension of the cherry orchard. This would be a self-defeating exercise.

8 The second issue is whether there is actually sufficient water at this site. The main sources of recharge of the Cromwell Terrace Aquifer are Lake Dunstan and the Kawarau River, according to a detailed study report on the aquifer carried out by the ORC as a precursor to Plan Change 4C. Recharge and available water is generally much less the closer one gets to the basement rock hills on the western side of the basin, further from Lake Dunstan and the Kawarau River. I understand that the yield from other bores in the vicinity of the site (closer to the hills than the existing NZ Cherry Corp bore) is around 4l/s. This would be sufficient to irrigate only about 3 hectares of cherries. Most of the successful very high yielding wells on the Cromwell Terrace aquifer are located on old fossil channels of the Clutha and Kawarau rivers that traverse the Cromwell Flat much closer to Lake Dunstan than the PC14 site.

9 In addition, a significant portion of the historic recharge in the area of PC14 (ie the former "Leyser" property - Shannon Farm) has come from operation of the Ripponvale Irrigation Company scheme, as a result of both leakage from the races and storage dams and use of water for flood irrigation. This source of recharge will end in future as ORC policy requires these losses be addressed and flood irrigation is being progressively converted to more efficient methods ie. basically sprinkler / spray irrigation which the proposed Cherry Orchard extension will use. Accordingly, the chances of a well with a successful high yield will become lower over time as flood irrigation will cease on the site.

10 Access to surface water is not an option in this area, given the distance to source, easement issues, and Contact Energy requirements in relation to their use of water for hydro-generation.

Dated this 26th day of May 2020

Peter Dymock