

HEARING BEFORE COMMISSIONERS

IN THE MATTER the Resource Management
Act 1991

AND Otago Regional Council

AND Plan Change 5A (Lindis
Integrated Water Management)

EXECUTIVE SUMMARY – EVIDENCE OF JENS HAAYE REKKER.

1. Understanding the flow dynamics in the lower Lindis River is significantly complicated by the flow interactions between river and Lindis Alluvial Ribbon Aquifer.
2. Infiltration and seepage interactions between river and aquifer have a bearing on the setting of management ('minimum') flows for the river, especially over the critical summer to late summer period as water 'left in the river' may indeed be temporarily or indefinitely lost to the river along losing reaches.
3. In addition to hydrogeological factors producing a sequence of identifiable losing and gaining reaches in the lower river, temporal fluctuations in river flow and water table height shift the positions and intensity of flow loss.
4. Water table fluctuation in the Lindis Alluvial Ribbon Aquifer has dependencies on river flow and governs the development of an unsaturated separation between the base of the river and aquifer, sometimes termed 'disconnection'.
5. There remains a degree of confusion among technical submitters to this hearing concerning the magnitude of river flow loss on the basis of multiple-site gauging during low flow periods or observation of river drying in different irrigation seasons or different times of any season.

6. Observed inconsistency in river loss rates as above are likely to have explanations in the highly dynamic interactions of river and aquifer, including periods of predominately saturated or unsaturated connection with the different water transmission rates attached to each mode.
7. The Ardgour Road recorder site is located in a consistently gaining reach of the river, which is not always representative of the flow and habitat conditions through much of the lower river during low flows.
8. A degree of precaution or conservatism is advisable in setting the management flow rate at the Ardgour Road recorder site for the maintenance of values along the lower river. This consideration is a factor in me preferring a management flow of at least 900 L/s over the next lower option of 750 L/s.
9. It is my opinion that the water management of the Lindis River and associated groundwater management zones would be optimally arranged under option 4 of the proposed plan change s32 report, comprising a management flow of at least 900 L/s between October and May in any year and annual surface water allocation limit of 1,000 L/s.
10. It is my opinion that the Lindis Alluvial Ribbon Aquifer within Schedule 2c of the Regional Plan: Water should be extended to include the Lindis Alluvial Fan as set out in option 2 of the catchment boundary and mapping section of the s32 report.
11. It is my opinion that the Ardgour Valley, Lower Tarras and Bendigo groundwater allocation zones should set allocation limits in accordance with option 2 of the s32a report accompanying the proposed plan change.
12. These water management settings comprise a water management approach with the best mix of instruments and limits to achieve flows in the lower Lindis River that recognise the accepted values of fish passage, fishery, recreation, cultural and aquatic ecology.