

**BEFORE THE ENVIRONMENT COURT
I MUA I TE KOOTI TAIAO O AOTEAROA**

UNDER the Resource Management Act 1991

IN THE MATTER of appeals under Clause 14 of the First Schedule of the Act

BETWEEN **TRANSPOWER NEW ZEALAND LIMITED**
(ENV-2018-CHC-26)

FONTERRA CO-OPERATIVE GROUP
(ENV-2018-CHC-27)

HORTICULTURE NEW ZEALAND
(ENV-2018-CHC-28)

**SUPPLEMENTARY STATEMENT OF EVIDENCE OF MATTHEW
MCCALLUM-CLARK ON BEHALF OF SOUTHLAND REGIONAL COUNCIL**

PLANNING

20 May 2022

Judicial Officer: Judge Borthwick

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ARATIATIA LIVESTOCK LIMITED
(ENV-2018-CHC-29)

WILKINS FARMING CO
(ENV-2018-CHC-30)

**GORE DISTRICT COUNCIL, SOUTHLAND DISTRICT
COUNCIL & INVERCARGILL CITY COUNCIL**
(ENV-2018-CHC-31)

DAIRYNZ LIMITED
(ENV-2018-CHC-32)

H W RICHARDSON GROUP
(ENV-2018-CHC-33)

BEEF + LAMB NEW ZEALAND
(ENV-2018-CHC-34 & 35)

DIRECTOR-GENERAL OF CONSERVATION
(ENV-2018-CHC-36)

SOUTHLAND FISH AND GAME COUNCIL
(ENV-2018-CHC-37)

MERIDIAN ENERGY LIMITED
(ENV-2018-CHC-38)

ALLIANCE GROUP LIMITED
(ENV-2018-CHC-39)

FEDERATED FARMERS OF NEW ZEALAND
(ENV-2018-CHC-40)

HERITAGE NEW ZEALAND POUHERE TAONGA
(ENV-2018-CHC-41)

STONEY CREEK STATION LIMITED
(ENV-2018-CHC-42)

THE TERRACES LIMITED
(ENV-2018-CHC-43)

CAMPBELL'S BLOCK LIMITED
(ENV-2018-CHC-44)

ROBERT GRANT
(ENV-2018-CHC-45)

**SOUTHWOOD EXPORT LIMITED, KODANSHA
TREEFARM NEW ZEALAND LIMITED, SOUTHLAND
PLANTATION FOREST COMPANY OF NEW ZEALAND**
(ENV-2018-CHC-46)

**TE RUNANGA O NGAI TAHU, HOKONUI RUNAKA,
WAIHOPAI RUNAKA, TE RUNANGA O AWARUA & TE
RUNANGA O ORAKA APARIMA**
(ENV-2018-CHC-47)

PETER CHARTRES
(ENV-2018-CHC-48)

RAYONIER NEW ZEALAND LIMITED
(ENV-2018-CHC-49)

**ROYAL FOREST AND BIRD PROTECTION SOCIETY
OF NEW ZEALAND**
(ENV-2018-CHC-50)

Appellants

AND

SOUTHLAND REGIONAL COUNCIL

Respondent

Introduction, qualifications and experience

- 1 My name is Matthew Eaton Arthur McCallum-Clark. My qualifications and experience are set out in full in my statement of evidence dated 22 October 2021.
- 2 This supplementary statement of evidence responds to the Court's directions at paragraphs 5, 6 and 7 of the Minute dated 25 March 2022 in relation to sediment management in Rules 13, 15 and Appendix E.
- 3 In preparing this evidence, I have considered:
 - (a) The Statement of Evidence of Professor Death dated 8 April 2022; and
 - (b) A final draft of the Statement of Evidence in Reply of Mr Hodson dated 20 May 2022.

Code of conduct

- 4 I confirm that I have read the Code of Conduct for expert witnesses as contained in the Environment Court Practice Note 2014. I have complied with the Code of Conduct when preparing my written statement of evidence and will do so when I give oral evidence.
- 5 The data, information, facts, and assumptions I have considered in forming my opinions are set out in my evidence. The reasons for the opinions expressed are also set out in my evidence.
- 6 Other than where I state I am relying on the evidence of another person, my evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Background to the plan provisions and problem identification

- 7 In response to questions from the Court, I explained that Appendix E originated from Appendix G of the operative Regional Water Plan and it was incorporated into the notified version of the pSWLP with only limited amendments. This was due to the intention to fully review water quality standards as a part of the future planning process, now referred to as Plan Change Tuatahi.
- 8 The existing Appendix G of the operative Regional Water Plan does not have a deposited fine sediment bed cover limit, as I understand it relies

on the clarity standards in Appendix G (which are also included in Appendix E).

- 9 During the hearing on the agreed provisions, the Court raised concerns about the cumulative impact of increases in sedimentation from multiple discharges. As I understood it, this was due to the sediment cover standard being based on a percentage change, rather than an absolute standard.
- 10 The issue arises in Rules 13 and 15, and Appendix E. The version of Rules 13 and 15 that was agreed through mediation or negotiation is attached in **Appendix 1**. For Appendix E, the wording agreed through mediation is:

The change in fine sediment (<2mm diameter) bed cover must not exceed 10%.

- 11 This change has not been included for the “Mountain Lakes and Wetlands”, “Hill Lakes and Wetlands” and the “Lowland/Coastal Lakes and Wetlands” waterbody classes, where it continues to read:

The change in sediment cover must not exceed 10%.

- 12 I understand this to be an omission through the mediation and negotiation process. In any event, I recommend that all occurrences be made consistent.

Death and Hodson technical evidence

- 13 I have read and considered the evidence of Professor Death and Mr Hodson.
- 14 As I understand it, Professor Death sets out the ecological implications of excessive sedimentation and proposes a maximum bed cover percentage for most of the waterbody classes in Appendix E in his Table 1.
- 15 Mr Hodson has set out the results of sediment monitoring in Southland, assessed Professor Death’s proposal, and further suggested an absolute limit on clarity as an alternative option.
- 16 From these two briefs of evidence, it appears clear to me that while sedimentation as a result of point-source discharges needs to be managed, the most appropriate way to do that is not yet clear. The

three options of a percentage change (existing Appendix E), a fixed percentage of bed cover for some waterbody classes (Professor Death) and a clarity measure for point source discharges (Mr Hodson) each have different strengths and weaknesses, and the two more recent proposals are relatively untested as to costs and benefits and efficiency and effectiveness in the Southland context.

- 17 I have attempted to draft some preliminary revisions to Rules 13 and 15 and Appendix E to test how these different approaches could be adopted within the pSWLP. I have also reviewed the wording changes put forward by Fish and Game in their 'consolidated changes' dated 22 March 2022, which comprise a relatively simple addition of a maximum bed cover percentage. I note that no analysis pursuant to section 32AA has been provided nor assessment of how these proposed rules would be implemented.
- 18 In considering these preliminary revisions and the Fish and Game proposal, a range of uncertainties and doubts have arisen for me, particularly in relation to:
- (a) The transitory nature of sedimentation in many waterbodies, as identified by Mr Hodson and Professor Death, and the implications that has for the functioning of a rule.¹ As an example, if sediment arrived in a particular part of a river due to a catchment scale process, and this was after a stormwater discharge was established as a permitted activity, would the discharge become non-compliant?
 - (b) The typical sources of sediment, which for many rivers appear to be dominated by catchment-scale systems, rather than point-source discharges.² This has implications for the effectiveness and efficiency assessment.

¹ For example as described at paragraphs 4.5 and 5.1 of Professor Death's Statement of Evidence and paragraph 9 of Mr Hodson's Evidence in Reply.

² Surface erosion was identified as the dominant source of suspended sediment in many catchments in the recent report: Landcare Research, Modelling baseline suspended sediment loads and load reductions required to achieve draft Freshwater Objectives for Southland, May 2021.

- (c) Whether it is effective or efficient to require resource consent for discharges when the fine sediment component of the bed is naturally higher than the Fish and Game thresholds.³
- (d) How any rules will practically apply to subsurface drainage systems and stormwater systems, as there are many tens of thousands of sub-surface drain outlets in Southland and Mr Hodson notes difficulties in implementing either alternative in relation to sub-surface drain outlets.⁴

19 The Court has invited me to return on the last day of the hearing and respond to evidence presented on this issue.⁵ After considering the technical evidence and the issues set out above, I am of the view that it is premature at this point for me to suggest wording for the provisions and a planning opinion on the options ahead of the technical evidence being further tested.



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Matthew McCallum-Clark

20 May 2022

³ As described at paragraph 16 of Mr Hodson's Evidence in Reply.

⁴ At paragraph 20 of Mr Hodson's Evidence in Reply.

⁵ At paragraph 7 of the Minute dated 25 March 2022.

Appendix 1 – Relevant provisions as agreed through mediation or negotiation

Rule 13 - Discharge from subsurface drainage systems

- (a) The discharge of land drainage water to water from an on-farm subsurface drainage system is a permitted activity, provided the following conditions are met:
- (i) the discharge does not cause:
 - (1) a ~~conspicuous~~ change to the colour or clarity of the receiving waters beyond 20 metres from the point of discharge that exceeds the maximum percentage change specified for the relevant water body class in Appendix E;
 - or
 - (2) more than a 10% change in the sediment cover of the receiving waters beyond 20 metres from the point of discharge; or
 - ~~(3)~~(2) conspicuous oil or grease films, scrums or foams, or floatable or suspended materials beyond 20 metres from the point of discharge;
 - (ii) the discharge does not render freshwater unsuitable for consumption by farm animals;
 - (iii) the discharge does not cause the flooding of any other landholding;
 - (iv) the discharge does not cause any scouring or erosion of any land or bed of a water body beyond the point of discharge;
 - (vi) the discharge does not cause any significant adverse effects on aquatic life;
 - (vii) the subsurface drainage system does not drain a natural wetland; and
 - (viii) for any known existing drains and for any new drains, the locations of the drain outlets are mapped and provided to the Southland Regional Council on request.
- (b) The discharge of land drainage water to water from an on-farm subsurface drainage system that does not comply with Rule 13(a) is a discretionary activity.

Rule 15 – Discharge of stormwater

- (a) The discharge of stormwater onto or into land in circumstances where contaminants may enter water, or into a lake, river, artificial watercourse, modified watercourse or wetland, is a permitted activity provided the following conditions are met:
- (i) the discharge is not from a reticulated system; and
 - (ii) the discharge does not originate from industrial or trade premises where hazardous substances are stored or used unless:
 - (1) hazardous substances cannot enter the stormwater system; or
 - (2) there is an interceptor system in place to collect stormwater that may contain hazardous substances and discharge or divert it to a trade waste system; or
 - (3) the stormwater contains no hazardous substances except oil and grease and the stormwater is passed through an oil interceptor system prior to discharge; and
 - (iii) the discharge does not contain any sewage, contaminants from on-site wastewater systems and mobile toilets, or agricultural effluent; and
 - (iv) for discharges to a lake, river, artificial watercourse, modified watercourse or wetland, the discharge does not result in:
 - (1) the production of any conspicuous oil or grease films, scums, foams or floatable or suspended materials; or
 - (2) the rendering of freshwater unsuitable for the consumption by farm animals; or
 - (3) significant adverse effects to aquatic life; or
 - (4) ~~any conspicuous change in the colour or visual clarity of the receiving waters at the downstream edge of the reasonable mixing zone; and more than a 20% change in the colour or visual clarity of the receiving waters at the downstream edge of the reasonable mixing zone; or~~
 - (5) more than a 10% change in sediment cover of the receiving waters at the downstream edge of the reasonable mixing zone;
 - (v) except for the discharge of stormwater from a roof, road or vehicle parking area, the discharge is not into water within natural state waters; and

- (vi) for discharges to land, the discharge does not cause flooding, erosion, or land instability to any other person's property.
- (ab) The discharge of stormwater and any contaminants contained within, from a reticulated system onto or into land where contaminants may enter water, or into a lake, river, artificial watercourse, modified watercourse or wetland, that does not meet Rule 15(a)(i) is a discretionary activity provided the following conditions are met:
 - (i) the reticulated system is owned by a territorial authority and is operated by them or their agent; and
 - (ii) a management plan is provided with the application that sets out, in a manner that reflects the scale and significance of water quality improvements required in the catchment:
 - (1) targets for the reduction in the volume and frequency of wastewater overflows into the stormwater network, and methods to monitor the volume and frequency of those overflow discharges; and
 - (2) a monitoring and investigation programme to identify and remedy wastewater cross-connections on private and public land; and
 - (3) methods to improve the quality of the discharge, which may include capital works, bylaws, investigations, education and preventative activities; and
 - (iii) demonstration of funding for implementing the management plan is provided with the application; and
 - (iv) the discharge does not contain any contaminants from on-site wastewater systems and mobile toilets, or agricultural effluent; and
 - (v) where the water quality upstream of a point source discharge meets the standards set for the relevant waterbody in Appendix E "Water Quality Standards", the discharge does not reduce the water quality below those standards at the downstream edge of the reasonable mixing zone; or
 - (vi) where the water quality upstream of a point source discharge does not meet the standards set for the relevant water body in Appendix E "Water Quality Standards", the discharge must not further reduce the water quality below those standards at the downstream edge of the reasonable mixing zone.

- (b) The discharge of stormwater onto or into land in circumstances where contaminants may enter water, or into a lake, river, artificial watercourse, modified watercourse or wetland, that does not meet one or more of the conditions in Rule 15(a), excluding condition (a)(iii), a(v) or a(vi), and which is not otherwise specified in Rule 15(ab) is a discretionary activity.
- (c) The discharge of stormwater onto or into land in circumstances where contaminants may enter water, or into a lake, river, artificial watercourse, modified watercourse or wetland, that does not meet Rule 15(a)(iii), a(v) or a(vi) and which is not otherwise specified in Rule 15(ab) is a non-complying activity.