

IN THE MATTER Of the Resource Management Act 1991

AND

IN THE MATTER OF A Resource Consent Application to discharge agricultural effluent to land from up to 840 cows, to take 85,800L/day of groundwater and to use land for two winter barns, a new agricultural effluent storage facility, and to establish a new dairy farm at 444 Springhills-Tussock Creek Road

BY Capil Grove Limited

REF APP-20222055

STATEMENT OF EVIDENCE OF BRIAN NEIL ELLWOOD ON BEHALF OF CAPIL GROVE LIMITED

INTRODUCTION

1. My name is Brian Neil Ellwood.
2. I am a Senior Environmental Engineer with Lowe Environmental Impact Limited.
3. My evidence is given in relation to the application for resource consent for the conversion of Capil Grove Limited's Farm 444 from dairy support grazing to dairying.

EXECUTIVE SUMMARY

4. Farm 444 is a farm integrating five separate land parcels into one dairy unit located at Springhill Southland. The property is owned by Capil Grove Limited (CGL).
5. CGL are seeking consents to enable the conversion of land into an efficient and sustainable dairy farm milking up to 640 cows and wintering an additional 200 animals in two wintering barns.
6. Currently there are a number of different land use and farming practices exercised on the different land parcels. These practices include dairy support and intensive winter grazing. These current practices contribute contaminants to the environment and affect water quality in the wider catchment.
7. To create a sustainable farming system and reduce nutrient losses, allowing for a land use change to dairy farming, new wintering barns and effluent management systems are proposed. The cow numbers milked and wintered on the property have been selected to allow the property to match feed production with animal demand. The proposed system will reduce the number of cows wintered outdoors in the catchment.
8. The key element of concern arising from the proposed land use change is the management of the cumulative effects of nitrogen and phosphorus on the receiving environment. The Applicant has modelled the potential cumulative effects of nitrogen using the best available systems and has proposed extensive conditions of consent to monitor and manage the discharge of contaminants.
9. Phosphorus losses are proposed to be reduced by an alteration to the farm laneway layout and specific design of the farm to integrate its properties into one efficient dairy unit.

10. It is my overall conclusion that, based on the technical evidence supporting the application, the effects of the proposal will be positive when compared with the baseline and the application is consistent with the relevant planning documents.

QUALIFICATIONS AND EXPERTISE

11. My full name is Brian Neil Ellwood. I am a Senior Environmental Engineer with 24 years of professional experience in the fields of wastewater treatment, nutrient management and preparation of resource consent applications. I have been a Senior Environmental Engineer with Low Environmental Impact (LEI) for seven years. Within my role, I lead the Christchurch office, managing staff across wastewater land application, irrigation development and consenting projects.

12. I have a BTech(Hons) Massey University 1996, MAppsc-AgEng (Hons), Massey University 1997 and gained Project Management Professional accreditation from the Project Management Institute in 2013. I also have a Graduate Certificate – Irrigation from Charles Sturt University (NSW) 2006 and a Fertiliser and Lime Research Council FLRC Advanced Certificate in Sustainable Nutrient Management in NZ Agriculture from Massey University 2016.

CODE OF CONDUCT

13. I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2014. My evidence has been prepared in compliance with that Code. In particular, unless I state otherwise, this evidence is within my area of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

14. I have reviewed and read the following information;

- a. Application and Assessment of Effects
- b. S42a report prepared by Ms McRae
- c. The evidence of Nelson Lindsay, Carl Lindsay, and Hamish Lowe

SCOPE OF EVIDENCE

15. My evidence will address

- a. A background of the proposed Farm 444;

- b. Amendments to the application lodged;
- c. A discussion on agricultural intensification;
- d. The consenting activity status;
- e. Comments on the s42A officers report; and
- f. A discussion on consent term.

BACKGROUND

16. Details of the proposed Farm 444 ownership, design and operation are provided in the evidence of Carl and Nelson Lindsay, and Hamish Lowe.

17. My summary of the application and proposal is:

17.1 The proposal is the amalgamation of five properties of varying scale and historical pastoral land use to a single dairy operation utilising a deferred grazing system supported by two animal housing barns.

17.2 The essential components of the proposal are:

17.2.1 Two housing barns with capacity for 840 cows;

17.2.2 Seasonal storage for all shed and barn effluent;

17.2.3 Low rate application of the collected animal effluent;

17.2.4 Stocking rates and wintered cow numbers matched to on-farm feed production, including cereals (barley);

17.2.5 Herd numbers and productivity managed using brought-in cull cows, avoiding the need for running replacement stock;

17.2.6 No young stock wintered on the property;

17.2.7 No winter grazing of crops; and

17.2.8 Redevelopment of the property layout to locate laneways away from surface waterways and direct surface runoff to grassed areas and sediment traps.

17.3 Resource consents are required under the National Environmental Standards for Freshwater (NES-F), the Operative Regional Water Plan (RWP) and the proposed Southland Water and Land Plan (pSWLP).

18 A summary of the consents sought is as follows:

18.1 Discharge Consent - AUT2022055-01

18.2 Water Take Consent – AUT2022055-02

- 18.3 Winter Barns Consent - AUT2022055-03
- 18.4 Land Use Consent - AUT2022055-04
- 18.5 Discharge Consent – AUT20222707-06

- 19 As discussed in the evidence of Carl and Nelson Lindsay, the Applicant is using their local farm management expertise alongside the knowledge of industry experts to design this new dairy platform. I have observed a desire to design a system that will improve conditions and environmental outcomes on this property and their neighbouring Capil Grove property. Making changes requires resources, and in this case, the resources needed has to be balanced with ensuring the system remains viable. The direction from Environment Southland and Central Government to improve water quality, as set out in various national and regional planning documents, has been considered as a priority.
- 20 Ultimately, this application concerns a change in land use that may affect nutrient losses and cumulative water quality standards. It does not matter what the land use is that generates the environmental effects, but the scale of the impact and whether effects are predicted to increase or decrease with the proposed development.
- 21 I have not visited the farm, but I am familiar with the current and proposed farm system, the area and dairy farming practices. I have been actively involved in debates about barn operations and their benefits. The staff I employ and the wider Lowe Environmental Impact team have been working on the proposed farming operation, and I have participated in discussions about system optimisation.

PROPOSED AMENDMENTS TO APPLICATION

- 22 There are two amendments to this application since it was lodged, and since the s42A has been prepared. These are addressed in the evidence of Hamish Lowe. I discuss them further below:
- 22.1 Staging – the original staging proposed has been condensed. The current farming system will shift directly into the proposed future system. This is largely due to the time elapsed, in that the intermediate stages are no longer required.
 - 22.2 No slurry tanker on Category C soils - There is a technical debate between ES staff and the Applicant as to whether a slurry tanker is a high or low-rate application system, and whether it conforms with ES guidance to meet

regional rules. To manage the debate, the use of the slurry tanker on Category C soils has been withdrawn from the application. This also aligns with the proposed condition 10¹ of the Effluent discharge consent Auth-20222055-01 excluding effluent application to land with a slope greater than 7°.

- 23 In addition to the amendments, there has been refinement of draft consent conditions provided by ES as discussed in the evidence of Hamish Lowe. These require actions that shape the farming system, refining the details provided in the application, and offering more mitigation than suggested in draft conditions provided by ES staff.

AGRICULTURAL INTENSIFICATION

- 24 The proposal sees a group of small farms brought together into a larger unit. Previous farm use was sheep and beef, beef finishing, sheep milking and dairy support. These systems used a mix of management practices, including cropping and intensive winter grazing.

- 25 It is my opinion that a change of land use to dairy farming on its own does not equal intensification. It is the stocking density and the farming system that has the potential for intensification. Regardless, the debate should not be on the change in land use or intensification, but the effects on the receiving environment.

- 26 Regulatory guidance in New Zealand is absent in terms of defining intensification. By default, the national guidance via the NES -F equates land use change to dairy or dairy support with intensification of pastoral nutrient loss. This means land use change alone triggers a greater look at the effects of the new land use.

- 27 A specific definition of 'agricultural intensification' is not found in Environment Southland's proposed Southland Water and Land Plan, or Environment Canterbury Land and Water Regional Plan. These are two regions where there are questions about the appropriateness of intensification.

- 28 The NES-F also does not define intensification. NES-F regulates both the use of land (or use of water in the case of the irrigation of dairy farmland) and discharge of contaminants,

¹ As detailed in Annex D of Hamish Lowe's evidence.

either by permitting both activities or by requiring resource consent for both activities². However, the NES-F notes that where there is the potential for intensification, a greater level of investigation and justification of that change is required, with a focus on ensuring the effects of the activity are managed³. The NES-F essentially provides a gateway to check in on the land use change and provides an opportunity to consider the appropriateness of the effects of the proposed activity. The NES-F identifies a change to dairy farming as requiring regulation but does not prohibit the land use change. Rather, it seeks certainty in the resulting effects before the land use is allowed to proceed as outlined in Section 24.

- 29 Section 24 of the NES-F defines that consent authorities must be satisfied that resulting effects must not increase contaminant loads and concentrations of contaminants;

24 Discretionary activities: conditions on granting resource consents

(1) A resource consent for an activity that is a discretionary activity under this subpart must not be granted unless the consent authority is satisfied that granting the consent will not result in an increase in either of the following:

(a) contaminant loads in the catchment, compared with the loads as at the close of 2 September 2020:

(b) concentrations of contaminants in freshwater or other receiving environments (including the coastal marine area and geothermal water), compared with the concentrations as at the close of 2 September 2020.

- 30 Environment Southland summarises that, generally, consents will not be granted where contaminant losses will increase as a result of the proposed activity⁴.

- 31 In summary, intensification is not prohibited. Intensification doesn't imply there will be adverse impacts. However, where intensification occurs, there is a need for a greater level of scrutiny to ensure the effects of the land use are not increasing.

²Technical Advice Note – National Environmental Standards for Freshwater 2020: Temporary Intensification Provisions and Environment Canterbury's Regional Plans (2020)

³ NES-F Part 2

⁴ Southland Water and Land Plan – Part A – Decisions Version Operative in Part

ACTIVITY STATUS

- 32 Table 2 of the s42A identifies the consents needed and their activity status. All activities except one have a discretionary status. The exception is the discharge to land of effluent, which as a result of the use of the slurry tanker on Category C soils, means it defaults to a non-complying activity. Consequently, the package of consents is considered to be non-complying.
- 33 Specifically, the s42A report notes at section 2.4(e) *“The discharge has been assessed as a discretionary activity against RWP Rule 50, however high rate discharge on Category C land is a non-complying activity under Rule 50(f). If high rate discharge via slurry tanker on Category C land is proposed then please provide further assessment on potential effects for this proposed activity.”* Further, Issue 3, (paragraph 29) of the pre-hearing minutes notes “ES believe that the planned method of effluent discharge to Category C via high-rate method is a non-complying activity.”
- 34 These statements, and the discussion associated with them, clearly indicate that the activity is non-complying and the application bundle is also non-complying. The discussion also clearly attributes this activity status to the use of the slurry tanker and an effluent application rate of greater than 10 mm/hr on Category C soils.
- 35 The proposed amendment, as discussed in my paragraph 22.2, removes the use of the slurry tanker on Category C soils. In doing so, the activity then complies with the requirements of *RWP Rule 50*, allowing the activity to resort to a discretionary activity status. Further, the removal of the slurry tanker on Category C soils means that the bundle of consents in the application also resorts to a discretionary activity status.

SECTION 42A OFFICER'S REPORT

- 36 In general, I have no issues with the objective, policy and rules analysis applied by the s42A reporting officer. The analysis and application of the individual policies, objectives and rules is appropriate. However, I disagree with the conclusions reached regarding the assumption that there is an increase in nutrient losses and effects being more than minor. From reading the s42A report, the assessment that the application is not consistent with the policy framework is predominately based on the interpretation of the system having an increase in phosphorus loss, being a 26 kg/y, or a 4.1 %, increase; and therefore

causing a potential increase in environmental effects within a catchment that is overloaded.

- 37 The reporting officer discusses the assumptions within Overseer driving the phosphorus loss and acknowledges that these losses are dominated by laneway losses⁵ and can be mitigated. But the reporting officer concludes that as no mitigation measures were detailed in the application, a cautious approach is needed and that the loss reported will occur and should be address at the hearing. Mr Lowe's evidence details the mitigation proposed which include relocating an existing laneway and the location of all new laneways directing water to land and sediment traps.
- 38 In discussion with Te Ao Marama Inc, the applicant has agreed to further mitigation measures, including two sediment detention structures and two wetland and sediment settlement structures. With the inclusion of these mitigation measures, Mr Lowe's opinion is that the release of phosphorus and other surface transported contaminates will be reduced from the current rates of loss as estimated by Overseer. In my experience, and based on the technical evidence in Hamish Lowe's evidence, the extent of reduction would be more than the 26 kg/y, or 4.1 %, increase projected by Overseer.
- 39 These mitigation measures, and the reality of contaminant losses will decrease compared to the current farming system are positive effects and support the overall conclusion in the AEE that consent is able to be granted.
- 40 With regard to specific effects identified in the s42A report, these have been addressed in Mr Lowe's evidence. From Mr Lowe's evidence, it is clear that the reporting officer's view is not supported with technical evidence. The reporting officer's view appears to be a series of assumptions based on an opinion that an increase in nutrient losses will occur as a result of the proposed land use change and will result in adverse effects. As noted in my earlier comments, land use change does not link directly to intensification, which alone does not necessarily link to or result in adverse effects. Specifically in this case, the Applicant has developed a farm design and employed a series of mitigations to ensure the effects of the proposed land use change are mitigated.

⁵ S42A report Pg 15

- 41 The concept of mitigating effects is the key intent of the Farm 444 proposal, with the underlying design principle for the effects of the farm system to be less than the current operation. I note that the proposed mitigation measures are reported in Overseer to reduce nitrogen losses and other research shows that phosphorus can be managed at source by good farm layout and design.
- 42 The planning framework and hierarchy places a requirement on the Applicant as a minimum to maintain water quality. The Application and evidence in my opinion demonstrates that water quality will be improved following the implementation of the proposed land use system. The requirement to improve water quality in a degraded catchment sits, in my opinion, with the community and those who contribute to the degradation of water quality, and a single applicant cannot be required to achieve all of the improvements alone. The Environment Southland FMU limits setting process for the Oreti and Waihopai – New River Estuary will determine the appropriate limits for this catchment. The setting of these limits will likely determine future contribution to water quality improvements land users need to take, including additional reductions for Farm 444.

TERM

- 43 Ms McRae addresses the question of consent duration in section 4.2. I agree that the recommended duration must be compliant with regulation 24(2) of the NES-F, being the application is granted for a term of seven years and that all permits are given the common expiry date of 31 December 2030.

CONCLUSIONS

- 44 In summary, I conclude the following in relation to this application:
- 45 The proposed farming system and land use change has been designed to efficiently match animal numbers with the feed production potential of the combined properties, while being sensitive to concerns regarding the receiving environment from the use of land for dairy farming.

- 46 The proposal has the potential to deliver positive outcomes through the reduction of existing nutrients and contaminate load from the historic practices of dairy support, sheep milking and intensive winter grazing.

- 47 Overall, I consider the Applicant has appropriately modelled the existing and proposed farming systems to reflect the outcomes required by the NES-F and Environment Southland's Plans to ensure the adverse effects of the land use change and discharge of contaminants can be managed commensurate with the sensitivity of the receiving environment.

- 48 To provide certainty regarding the ongoing management of the farming system and associated discharges, the Applicant has volunteered a suite of mitigation measures and conditions to ensure these outcomes continue to be achieved.

Brian Ellwood

23 May 2023