

BEFORE THE SOUTHLAND REGIONAL COUNCIL

In the matter of sections 88 to 115 of the Resource Management Act
1991

And

In the matter Applications for resource consents by:

CASHMERE BAY DAIRY LIMITED

Applicant

EVIDENCE OF MATILDA JANE BALLINGER

6 May 2022

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QUALIFICATIONS AND EXPERTISE

1. My full name is Matilda Jane Ballinger and I am a Planner at Landpro Limited, a firm of consulting planners, scientists, surveyors and engineers. I hold the qualifications of BSc (Earth Science and Marine Science, University of Auckland) and MSc (Antarctic and Marine Science, University of Tasmania).
2. I have been employed by Landpro since May 2019 and have undertaken a wide variety of resource management related work for various clients, including preparing resource consent applications, providing regulatory advice, and consent management services. A significant proportion of my work relates to resource consents for dairy farms in Southland. I am currently in the process of applying to be an associate member of the New Zealand Planning Institute.
3. I acknowledge that I have been assisted by my colleague Dr Mike Freeman, Senior Scientist/Planner, to review parts of this evidence. This is my evidence and I take full responsibility for all the content of this document.
4. This evidence has been prepared in relation to the resource consent applications by Cashmere Bay Dairy Limited to use land for dairy farming that was not occurring as of June 2016, to discharge farm dairy effluent to land, to take and use groundwater and to use land for a feed pad/lot.

Other sources of information

5. I have considered the following information:
 - (a) The application and associated assessment of environmental effects (AEE) prepared by me. As well as the Resource Management Act (RMA) S92 response, prepared by me.
 - (b) The S42A report by Ms Jade McRae.
 - (c) The Overseer modelling reports by Ms Hunter, her evidence and the audit undertaken by Irricon.
 - (d) Brief of evidence from George and Sarah Raymond on behalf of Cashmere Bay Dairy Limited.
 - (e) Submissions from: Hokonui Rūnanga, Jenny Campbell on behalf of Coal Action Murihiku, Clare Ryan, and the Ministry of Education.

CODE OF CONDUCT FOR EXPERT WITNESSES

6. I have read the Code of Conduct for Expert Witnesses within the Environment Court Consolidated Practice Note 2014 and I agree to comply with that Code. This evidence is within my area of expertise, except where I state I am relying on what I have been told by another person. To the best of my knowledge, I have not omitted to consider any material facts known to me that might alter or detract from the opinions I express.

SCOPE OF EVIDENCE

7. I provide summary information on the following matters:
 - Background and proposal
 - Application summary
 - Comment on the S42A Report and Recommendations
 - Policy and Statutory Planning Analysis
 - Matters raised by submitters
 - Conditions
 - Conclusions

BACKGROUND

8. The following is a brief overview of the proposal as submitted on 6thth October 2021, noting that the full description of the proposal is detailed in the AEE. The key components of the proposal as originally lodged are as follows:
9. The application site is located at 145 Jaffray Road, Otama. The site comprises a 353 hectare dairy platform owned by the Applicant (the existing dairy platform), a 89.6 ha support block (Support Block 1), and a 80.3 ha block predominantly used for winter grazing (Support Block 2), also owned by the applicant. The property is located within the Matura Surface Catchment. The applicant purchased Support Block 2 in mid-2018 and wishes to incorporate this 80.3 ha block into the dairy platform.
10. The property is generally flat to undulating in slope and is underlain by artificial drainage through much of the property. The existing dairy platform has been run as a dairy farm (including winter

grazing) by the applicant since before 2018. Support Block 2 has been used by the applicant as a winter grazing block.

11. Soils on the property are comprised of a number of different types of soils, including Mataura, Oreti, Fleming, Jacobstown, Gore, Pyramid, Glenure and Dipton. These soils are known to have various vulnerabilities as indicated in the AEE submitted in support of the application, including a severe vulnerability to structural compaction and severe vulnerability to nitrogen leaching.
12. Physiographic zones on the property are comprised of Oxidising and Gleyed with a small component of Old Mataura. Contaminant loss to surface water and via deep drainage is the main water quality risk associated with these zones, via both artificial drainage in flatter areas and overland flow in sloping areas.
13. The Environment Southland GIS system and topographical maps show that the dairy platform is located within the Okapua Stream and Mataura River catchments. There are a number of tributaries of the Mataura River on the property.

SUMMARY OF APPLICATIONS

14. Applications have been prepared seeking resource consents to use land for a farming activity, discharge effluent to land, to abstract and use groundwater for dairy purposes and to use land for a feed pad/lot. In summary, the applications sought:
 - Land Use Consent – To use land for a farming activity. The proposal seeks to increase the land area of the dairy platform above what existed at 3 June 2016 to include a 80.3 ha block.
 - Discharge Permit –To discharge dairy shed effluent from 1140 cows onto 264 ha of land via centre pivot, low-rate cobra gun, k-line and slurry tanker and umbilical system both as a contingency.
 - Water Permit - To abstract 136.800 L/day of groundwater. This abstraction of groundwater is for dairy shed washdown and stock drinking water for 1140 cows.
 - Land use Consent – To use land for a feed pad to hold 150 cows during spring and adverse weather.
15. A Farm Environmental Management Plan (FEMP) was lodged with the application which contains details of Good Management Practices (GMPs) proposed by the applicant to ensure that the farm is operated in accordance with industry-accepted good management practice.

Overseer Modelling

16. Overseer (OverseerFM) modelling has been used to model long-term annual average N and P losses to water from the dairy platform and the support blocks during 19-20 season, and a proposed dairy platform that will operate if consent is granted. Overseer FM version 6.4.3 has since been released (7th April 2022) and nutrient budgets have been re-run in this version. A summary of Overseer outputs for the property is detailed in Ms Hunter's evidence.
17. The overall results are summarised in the following table:

Table 1 Summary of predicted nitrogen and phosphorus losses in the current and proposed systems under Overseer version 6.4.3

	Milking Platform 19/20	Support 1 19/20	Support 2 19/20	19/20 Total
N loss to water(kg/yr)	18,537	2,282	4,151	24,970
N Loss/ha (kg/ha/yr)	53	25	52	
P loss to water (kg/yr)	333	32	40	405
P loss/ha (kg/ha/yr)	0.9	0.3	0.5	

	Proposed Milking Platform	Proposed Support 1	Proposed Total	Difference between 19/20 and proposed
N loss to water(kg/yr)	20,059	2,453	22,512	9.8% decrease
N Loss/ha (kg/ha/yr)	46	27		
P loss to water (kg/yr)	357	27	384	5.2% decrease
P loss/ha (kg/ha/yr)	0.8	0.3		

18. The overall modelling of the proposed farming system at the dairy platform indicates that nitrogen losses to water are predicted to reduce by approximately 9.8 % compared to the baseline combined model. Phosphorus losses to water are estimated to reduce by approximately 5.2 % compared to the baseline combined model.

Discharge Permit

19. A new discharge permit is sought to replace the existing discharge permit to allow for the discharge of farm dairy effluent from 1140 cows. This effluent will be discharged across a total area of 264 ha.

20. Effluent storage infrastructure at the property consists of stone trap, concrete sump and a lined effluent pond.
21. The volume of deferred storage provided on farm meets the accepted 90%ile volume estimate of the Massey University Dairy Effluent Storage Calculator (DESC), as outlined in the application for resource consent.
22. Effluent will be discharged to land via centre pivot, low-rate cobra gun, k-line, and as a contingency, a slurry tanker or umbilical system. The effluent application methods will apply effluent at a maximum rate of 10mm/hr with a 10mm depth and can be used all year round provided soil moisture deficit is adequate. The soils within the FDE disposal area appear to be classified by Map 1 of Appendix N of the Regional Water Plan as being Category A soils (artificial drainage or coarse soil structure) and Category E soils (other well-draining soils).

Water Permit

23. A new water permit is sought to replace the existing water permit to allow the abstraction of 136,800 L/day. The abstraction rate will be less than 2 L/sec. The water will be used for stock drinking water and shed wash down water from 1140 cows. This will be abstracted from bore F45/1073.

Land Use Consent for Farming

24. A land use consent is sought for the proposed farming activity which includes all farming activities located on the land.
25. The proposal is to increase the dairy platform area by 80.3 ha. It is proposed to increase the cow numbers by 140.

Land Use Consent for Feed pad

26. A land use consent is sought for the use of a 1500 m² feed pad that will be used by 150 cows in early spring and during adverse weather conditions. The feed pad has a wood chip base and effluent is captured in the effluent storage pond.

COMMENTS ON SECTION 42A REPORT

27. I have read the Section 42A Report prepared by Ms Jade McRae. The reporting officer ultimately recommends that consent should be granted, subject to a number of conditions. Ms Jade McRae identified a number of specific issues to be considered:

- (a) The adverse effects from the proposed activities on water quality;
- (b) The effects on water quantity
- (c) The effects on soil health
- (d) The effects on odour
- (e) The effects on the Mataura River

I have endeavoured to clarify and/or address the specific concerns raised as well as other relevant matters.

28. *Effects from the proposed activities on water quality*

29. I agree with Ms McRae's comments on discharge.

30. Ms Hunter addresses the comments by Ms McRae regarding the Overseer modelling to estimate the current and proposed nutrient losses to water taking account of the mitigations and good management practices that Overseer models. I note that I disagree with Ms McRae's opinion that Reducing Olsen P levels to 30 is a good management practice (GMP). It is my opinion that this is a mitigation measure, as it is not considered a good management practice in Overseer. Ms Hunter has further explained this in her evidence.

31. Ms McRae makes a distinction between GMPs and mitigations. My understanding is that Ms McRae endeavours to make this distinction because she considers that GMPs should already be implemented to comply with for example the permitted activity requirements of Rule 20. Therefore, a mitigation would be something above and beyond this. There are numerous references to GMPs in the pSWLP, including the permitted activity requirements of Rule 20. However, the pSWLP defines GMP to: "*Include, but are not limited to, the practices set out in the various Good Management Practices factsheets available on the Southland Regional Council's webpage*". This is a very broad definition that is likely subject to change overtime. However, because there is general agreement that a significant number of "mitigations" are proposed it is not critical to make a distinction between GMPs and mitigations.

32. I agree with Ms McRae's comments on nitrogen. I do note that she has not placed considerable weight on the use of a catch crop as a mitigation. Mr Raymond describes in his evidence on when he considers it appropriate for a catch crop to be used. In my view it is a mitigation method that will be utilised and should be given weight in the assessment process. This is supported by the evidence of Ms Hunter that discuss this nutrient loss reductions that can be achieved when this method it used.
33. I agree with Ms McRae's comments on phosphorus. I note that when discussing future riparian planting Ms McRae has commented '*benefits to water quality that will arise from enhancing the planting around the wetland/pond area adjacent to the main dairy lane will be delayed while the land use activity will have commenced.*' There is a considerable buffer that is at minimum, 10m and up to 20m in places between this area and the main dairy lane. The applicant has decided to focus on other areas of the farm as a priority, which have no planting or buffer. No calculations or quantification has been undertaken to determine if planting the area adjacent to the main lane way, or in areas which have not yet been planted, will have a greater mitigation effect, but it can only be assumed that the existing grass within the 20m buffer is already acting as a significant filter of contaminants.
34. I also note that in consultation with Hokonui Rūnanga, the applicant has agreed to develop a riparian planting plan and implement this plan over the lifetime of the consent. This riparian planting, although not fully developed yet is likely to improve the attenuation of phosphorus in the riparian margins resulting in an additional reduction in phosphorus and a subsequent improvement in water quality.
35. I agree with Ms McRae's comments on microbes and sediment loss.
36. I agree with Ms McRae's comments on water quantity. The abstraction is less than 2L/s, therefore no significant hydraulic connection is expected. Over-allocation from the Croydon and Knapdale groundwater management zone is not expected.
37. I agree with Ms McRae's comments on soil health. I note that the minimum requirements for the size of the effluent disposal area are 4 hectares per 100 cows, and the recommended is at least 8 ha per 100 cows. The 264ha discharge area equates to 23 ha per 100 cows, significantly above the recommended guidelines.

38. I agree with Ms McRae's comments on odour. The agreed upon draft consent conditions will ensure that the risk of adverse effects from odour and spray drift on surrounding landowners and occupiers will be minimal.
39. I agree with Ms McRae's comments on the Maitara River. I appreciate that Ms McRae is not a suitably qualified person to make conclusions on the scale of potential effects on the Maori of waterbodies and her note that Hokonui Rūnanga, has concerns on the hauora of the Maitara River. I also note that I am not suitably qualified to make conclusions on these matters. However, the applicant has been working with Hokonui Rūnanga as to how best address and alleviate the concerns raised in their submission, as well as any additional concerns they may have had in regard to the proposal.
40. I agree with Ms McRae's conclusion that the proposal and mitigations proposed will not result in significantly adverse environmental effects. I note, as above, that the applicant and Hokonui Rūnanga have been in discussion about how to best alleviate the concerns of Hokonui Rūnanga and discussions are ongoing. I agree with Ms McRae's comments on the submitter's concerns about elevated groundwater nitrates in the area. I note that the conclusions in Dr Freeman's report are similar and that the elevated groundwater nitrates are due to a number of contributing factors. The mitigations and farm system changes in this proposal are likely to result in an improvement in groundwater nitrate levels.
41. I agree that three compliance inspections carried out on the property per year would be appropriate.

Statutory Considerations

42. Section 3.4 of Ms McRae's S42A report details a comprehensive planning assessment. I consider that that assessment has been very thorough, and I agree with its conclusions. As such I do not repeat the analysis in this report.

Part 2 of the RMA

43. I agree with the reporting officer that it is appropriate to refer to Part 2 of the RMA when considering this proposal.
44. I consider the proposal is consistent with Part 2 of the RMA. It seeks to enable the applicants to utilise their land for farming in a way that provides for their social and economic well-being, that their staff, families and whanau and the rural economy, while also enabling them to reduce their

'environmental footprint' in a manner that will achieve sustainable management as defined in Section 5(2).

45. The applicant acknowledges and respects the long history and relationship Tangata Whenua have with the area. I note that the applicant has been working with Hokonui Rūnanga to ensure that the proposal will not adversely affect Tangata Whenua values, traditions or taonga.

National Policy Statement on Freshwater Management (2020)

46. I agree with Ms McRae's conclusions and consider the proposal is consistent with the NPSFM, including Policies 1, 3, 7, 9 and 10. I highlight Policy 5 as being particularly relevant because it directs that water quality must be maintained or improved. I rely on the expert nutrient budget evidence to conclude that implementation of the proposal will see a small reduction in contaminant loss to water and that this will make a contribution to improving water quality in the wider catchment. I consider that implementation of the proposal will contribute to achieving an improvement in groundwater and surface water quality, which would benefit ecosystem health and human health (the Mataura River is a source of drinking water) noting that these are two obligations identified in the NPSFM. The proposal inherently recognises the values and connections of Te Mana o te Wai as set out in the NPS. I note that Ms McRae notes the concerns of Hokonui Rūnanga and its desire to be heard. The applicant has been working with Hokonui Rūnanga to address their concerns.

47. *Southland Regional Policy Statement (2017)*

48. I agree with Ms McRae's conclusions.

Regional Water Plan

49. I agree with Ms McRae's conclusions.

Proposed Southland Water and Land Plan

50. I agree with Ms McRae's conclusions.

Rule Framework

51. I agree that the overall activity status when bundled is non-complying, therefore, consent must pass through one of the section 104D gateways before granting consent can be considered pursuant to section 104 and section 104B.

52. I note that the application included an assessment against 104D. I am confident that the application passes through both 104D gateway tests. The adverse effects of the activity on the environment will be minor and the application is for an activity that will not be contrary to the objectives and policies of both the relevant plan and relevant proposed plan.

Draft consent conditions

53. I acknowledge and thank Ms McRae for providing a copy of her proposed conditions along with the main S42A report. I have reviewed those conditions and I am in general agreement with them. I have made a number of relatively minor suggested changes that I consider would make some of the conditions more robust and/or practicable. Those specific changes are detailed together with applicable comments in the attached Appendix B.

Consent Duration

54. A duration of 10 years has been sought for all applications. I agree with Ms McRae's conclusions.

MATTERS RAISED BY SUBMITTERS

55. The application for resource consent was publicly notified. Submissions were received from four parties. Further comment has been provided on submissions below.

Party	Position
Hokonui Rūnanga	Oppose
Coal Action Murihiku	Oppose
Clare Ryan	Oppose
Ministry of Education	Neutral

56. A submission in opposition was made by Hokonui Rūnanga.

57. The applicant has worked with Hokonui Rūnanga to address the concerns of Hokonui Rūnanga and to provide certainty to that the proposal will result in positive benefits to water quality and that the hauora of the Mataura River will be improved. The applicant will continue to work with Hokonui Rūnanga to develop a riparian planting plan.

58. A submission in opposition was made by Coal Action Murihiku.
59. The main concerns raised in the submission, include degraded waterways in Murihiku, mitigations, climate change, groundwater quality and consultation with Tangata Whenua. Numerous attempts to engage in discussions with the submitter to address these concerns have been made but the submitter has not replied to any correspondence.
60. I acknowledge the concerns of the submitter in regard to the current state of degraded waterbodies in Southland, including the Mataura River. As shown through nutrient modelling and mitigations, the proposal is likely to result in a small improvement in water quality.
61. The submitter is concerned that the mitigations proposed do not sufficiently mitigate the negative effects on freshwater quality, referring to the s95 report. Ms McRae states in her evidence that the *'proposed dairy farm expansion activity has appropriate mitigation measured proposed by the applicant...'* and that *'recommended conditions of consent include implementing soil testing regime, restrictions on intensive winter grazing, maintaining a Farm Environmental Management Plan and ensuring proposed mitigation measured are implemented to improve water quality'*.
62. The submitter has concerns that the expanding dairy cow numbers will have a detrimental impact on the ability to reduce methane emissions to meet with is required under domestic and international agreements to keep climate change warming below 1.5 degrees. It is my understanding that greenhouse gas emissions are currently not a relevant matter under the Resource Management Act. I further note that that He Waka Eke Noa and the Emissions Trading Scheme are purposed to address the agreements referred to. Additionally, current and future mitigations on farm, such as riparian planting and decreased nitrogen fertiliser use, are likely to result in a reduction in emissions.
63. The submitter has concerns about contaminant management and the inadequate mitigation measures proposed to deal with the additional effluent, N and P being produced by the additional animals. Concerns were raised about effects on the adjacent wetland. I note that the DESC assessment shows that there is more than sufficient storage for effluent and that the discharge area is significantly larger than what is recommended. Nutrient modelling has shown that there is to be a decrease in both N and P contaminant loadings. There is a 20m buffer in place between the wetland area and the main lane way and the applicant has retired the critical source area upstream of the wetland in an effort to reduce contaminants entering the waterway/wetland. As above, I note that Ms McRae acknowledges that the environmental effects will not be significantly adverse.

64. The submitter has concerns about groundwater quality. I acknowledge that groundwater quality in this area is poor but note that based on expert evidence from Ms Hunter and Dr Freeman, the measures included in the application will result in a reduction in contaminant loadings and a subsequent improvement in groundwater quality. I note that Ms McRae does not consider Cashmere Bay's current or proposed activities to be the sole contributor to the elevated groundwater nitrates and its proposed mitigations that target the deep drainage contaminant pathway (utilising catch crops, removing beef stock and reducing crop area) adequate to avoid, remedy or mitigate any potential or actual adverse effects on groundwater quality. I also note that Dr. Freeman concludes that there are a number of contributing factors to existing groundwater quality.
65. I do not agree with the comments by the submitter on policy analysis. I agree with Ms McRae's conclusions on the policy analysis as stated in her evidence and do not see the need to repeat them here.
66. The submitter is concerned that consultation with Tangata Whenua has not been undertaken. This has been addressed above.
67. I am confident that the concerns raised by the submitter have been addressed, both in email correspondence and in this evidence, but without response from the submitter we were unable to address this any further.
68. A submission in opposition was made by Clare Ryan.
69. The main concerns raised in the submission is the groundwater quality in the region. As stated above, the evidence of Dr. Freeman and Ms Hunter strongly suggests the proposal is likely to result in a reduction in contaminant loadings and a subsequent small contribution to groundwater quality. The mitigations proposed in the application should address concerns raised by the submitter.
70. A neutral submission was made by the Ministry of Education.
71. The main concerns raised in the submission are the drawdown effects on the bore at the Otama School, F45/0351, and the effects on the quality of the drinking water supply. I note that Dr. Freeman addresses the groundwater flow direction and relation to the Otama School bore in his evidence. Due to the groundwater flow direction, activities occurring on the applicant's property are unlikely to have any effect on the quality of the drinking water supply at Otama School.

72. To address the concern about drawdown effects, I conducted a brief drawdown assessment to determine the scale of bore interference effects on the Otama School bore. These calculations were done using standard values for transmissivity and storage coefficients, the degree which water moves through the ground, and the percentage of pore space in the aquifer, respectively. Since conducting this assessment, I have received data from the council's science team which gives more representative values for transmissivity. I have updated the calculations accordingly and appended them to this evidence. The assessment shows that after 30 days of continuous pumping, the drawdown effect on the Otama School bore, 2000m away will be 0.0m and after 90 days, 0.001m. These values indicate that the effect of the increased water take on the Otama School bore will be negligible.
73. I also note that the bore in question F45/0351 is currently not used, nor is a registered on the Public Register for Drinking Water Supplies. The effects of the proposal on an unused bore will be negligible.

CONCLUSIONS

74. The granting of the resource consent applications is highly likely to result in a reduction in contaminant losses to water compared to the existing environment and importantly, compared to the situation if the consents are not granted. A key objective of the pSWLP and higher planning instruments is to improve water quality in the receiving environments and a strong case has been made that this will be achieved by granting the applications.

MATILDA BALLINGER

PLANNER

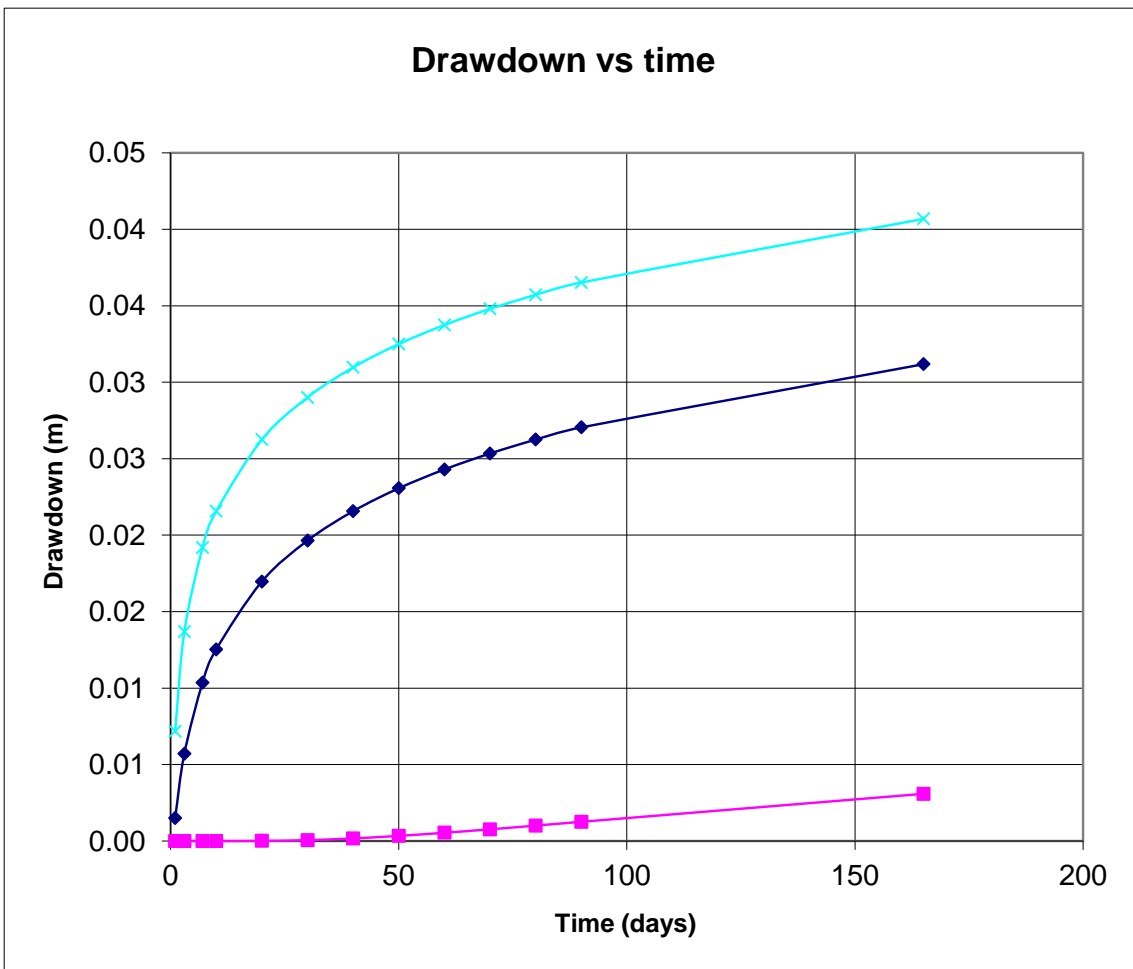
5 May 2022

APPENDIX A – DRAWDOWN ASSESSMENT

Time-drawdown calculations using Theis equation

Aquifer parameters		
T	2000	m ² /d
S	0.2	
Pumping rate		
Q	2	l/s

Radius (m)	100	200	2000
Time (days)	Drawdown (m)	Drawdown (m)	Drawdown (m)
1	0.007	0.002	-
3	0.014	0.006	-
7	0.019	0.010	0.000
10	0.022	0.013	0.000
20	0.026	0.017	0.000
30	0.029	0.020	0.000
40	0.031	0.022	0.000
50	0.032	0.023	0.000
60	0.034	0.024	0.001
70	0.035	0.025	0.001
80	0.036	0.026	0.001
90	0.037	0.027	0.001
165	0.041	0.031	0.003



APPENDIX B – DRAFT CONSENT CONDITION COMMENTS

Water Permit

Under Section 104B of the Resource Management Act 1991, a resource consent is granted by the Southland Regional Council to **Cashmere Bay Dairy Limited** of **145 Jaffray Road, RD 7, Otamita, Gore 9777** from **Date Granted 2022**.

Please read this Consent carefully, and ensure that any staff or contractors carrying out activities under this Consent on your behalf are aware of all the conditions of the Consent.

Details of Permit

Purpose for which permit is granted: To take and use groundwater for the purpose of stock drinking water and dairy shed wash down

Location	- site locality	145 Jaffray Road Road, Otamita
	- map reference	NZTM2000 1279596E 4899976N
	- well number	F45/0422
	- groundwater zone(s)	Knapdale (RWP), Croydon (pSWLP)
	- catchment	Mataura River
	- Physiographic zone	Oxidising

Legal description of land at the site: Section 2 Block II Otama SD

Expiry date: 31 May 2033

Schedule of Conditions

- This consent shall not be exercised until Water Permit AUTH-301812-V1 is surrendered or has expired.
- This permit authorises the taking of groundwater at the location specified above. The rate of abstraction shall not exceed:
 - 2 litres per second;
 - 136,800 litres per day; and
 - 49,932,000 litres per year.

Advice Note

The Consent Holder must ensure that the bore that water abstraction occurs from can meet the following conditions:

- (a) *The bore or well design and headwork's prevent:*
 - (i) *the infiltration of contaminants; and*
 - (ii) *the uncontrolled discharge or leakage of water to the ground surface or between aquifers.*

Should the bore not meet the above conditions, the Consent Holder shall apply to the Consent Authority for a Resource Consent for the use and maintenance of the bore.

- 3. Prior to the first exercise of this consent, the Consent Holder shall install a backflow prevention device or take other appropriate measures to ensure water and/or contaminants cannot return to the water source.
- 4.
 - (a) The Consent Holder shall have and maintain a water meter to record the water take, within an error accuracy range of +/-5% over the meter's nominal flow range. The Consent Holder shall forward a copy of the installation certificate to the Consent Authority within one month of installing the water meter.
 - (b) The water meter shall be installed in a straight length of pipe, before any diversion of water occurs. The straight length of pipe shall be part of the pump outlet plumbing, easily accessible, have no fittings and obstructions in it. There shall be a straight length of pipe on either side of the water meter, on the upstream side there shall be a distance that is 10 times the diameter of the pipe and on the downstream side there shall be a distance of five times the diameter of the pipe.
 - (c) The Consent Holder shall ensure the full operation of the water meter at all times during the exercise of this consent. All malfunctions of the water meter during the exercise of this consent shall be reported to the Consent Authority within five working days of observation and appropriate repairs shall be performed within five working days. Once the malfunction has been remedied, a Water Measuring Device Verification Form completed with photographic evidence must be submitted to the Consent Authority within five working days of the completion of repairs.
 - (d)
 - (i) If a mechanical insert water meter is installed it shall be verified for accuracy each and every year from the first exercise of this consent.
 - (ii) Any electromagnetic or ultrasonic flow meter shall be verified for accuracy every five years from the first exercise of this consent.
 - (iii) Each verification shall be undertaken by a Consent Authority approved operator and a Water Measuring Device Verification Form shall be completed and supplied to the Consent Authority with receipts of service. These shall be supplied within five working days of the verification, and at any time upon request.
 - (e) The Consent Holder shall maintain a record of the total volume of water abstracted each month. The Consent Holder shall provide this record to the Consent Authority by 31 May each year and at any other time on request.

5. Prior to the exercise of this consent, the Consent Holder shall notify the Consent Authority of the person who is in charge of the operation this consent. If the person in charge changes during the term of this consent, the Consent Holder shall notify the Consent Authority of the new operator no later than five working days after that person takes responsibility.

6. The Consent Authority may, in accordance with Sections 128 and 129 of the Resource Management Act 1991, serve notice on the Consent Holder of its intention to review the conditions of this consent during the period 1 February to 30 September each year, or within two months of any enforcement action being taken by the Consent Authority in relation to the exercise of this consent, or on receiving monitoring results, for the purposes of:
 - (a) adjusting the consented rate or volume of water under Condition 2, should future changes in water use indicate that the consented rate or volume is not able to be fully utilised;
 - (b) determining whether the conditions of this consent are adequate to deal with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage;
 - (c) ensuring the conditions of this consent are consistent with any National Environmental Standards Regulations, National Policy Statement, Water Conservation Order, relevant plans and/or any relevant Regional Policy Statement; or
 - (d) adjusting or altering the method of water take data recording and transmission.

for the **Southland Regional Council**

Allan Cubitt
Independent Hearing Commissioner

Notes:

1. *In accordance with Section 125(1)(a) of the Resource Management Act, this consent shall lapse after a period of five years after the date of commencement unless it is given effect to or an application is made to extend the lapse period before the consent lapses.*
2. *Section 126 of the Resource Management Act provides for this resource consent to be cancelled if the consent has been exercised in the past but has not been exercised during the preceding five years.*
3. *If you require a replacement permit upon the expiry date of this permit, any new application should be lodged at least six months prior to the expiry date of this permit. Applying at least six months before the expiry date may enable you to continue to exercise this permit until a decision is made, and any appeals are resolved, on the replacement application.*
4. *The Consent Holder shall pay an administration charge to the Consent Authority collected in accordance with Section 36 of the Resource Management Act, payable in advance on 1 July each year.*

DRAFT

Land Use Consent

Under Section 104B of the Resource Management Act 1991, a resource consent is granted by the Southland Regional Council to **Cashmere Bay Dairy Limited** of **145 Jaffray Road, RD 7, Otamita, Gore 9777** from **Date Granted 2022**.

Please read this Consent carefully, and ensure that any staff or contractors carrying out activities under this Consent on your behalf are aware of all the conditions of the Consent.

Details of Consent

Purpose for which permit is granted:	Use of land for farming
Location	- groundwater zones Knapdale (RWP), Croydon (pSWLP) - FMU Maitara - physiographic zones Oxidising, Gleyed, Old Maitara & Bedrock/Hill Country - catchments Maitara River and Okapua Stream
Expiry date:	31 May 2033

Schedule of Conditions

1. Except as modified by conditions of resource consent, the activities authorised by this resource consent shall be carried out in general accordance with the application for resource consent (APP-20211381)¹ and all subsequent information provided during the application and the Farm Environmental Management Plan required by this consent.
2. For the avoidance of doubt, in the event that any inconsistency between the conditions of resource consent and the information and plans, including the Farm Environmental Management Plan (FEMP), submitted as part of the application, the conditions of resource consent shall prevail.

¹ Environment Southland Document ID: A702723

3. The use of land for farming shall occur on the landholding at 145 Jaffray Road, Otamita, as shown on the plan attached as Appendix 1, and consisting of:
- (a) a block of land referred to as the “dairy platform”, at or about map reference (NZTM 2000) 1279780E 4899930N and comprising Part Section 9 Block II Otama SD, Part Section 10 Block II Otama SD, Section 2 Block II Otama SD, Section 4 Block II Otama SD, Section 5 Block II Otama SD and Section 4 Block I Otama SD.; and
 - (b) a block of land referred to as the “Support Block 1”, at or about map reference (NZTM 2000) 1278329E 4901666N and comprising Lot 2 DP 12628 and Lot 2 DP 324253.
4. The farming activities shall be limited as follows:
- (a) a maximum milking herd of no more than 1,140 mature age cows;
 - (b) grazing 265 R1 heifers, 265 R2 heifers and nine mating bulls on Support Block 1;
 - (c) intensive winter grazing of a maximum of 1,195 mature age cows, 265 R1 heifers and 265 R2 heifers on a maximum of 5~~1~~7.5 ha of crop.

Advice Note

Routine monitoring inspections of this property may occur up to once a year. This number does not include any other inspections required by other resource consents.

5. When intensive winter grazing is occurring on any part of the landholding, the Consent Holder shall:
- (a) maintain a 5 metre buffer at all times between any surface water way (river, artificial watercourse, modified watercourse and natural wetland) and the area being grazed;
 - (b) progressively graze stock from the top to the bottom of any slope, where this is not possible a 20 metre “last bite” strip shall be left at the bottom of the slope to be grazed last;
 - (c) back fence cattle at all times to prevent the stock re-entering previously grazed areas;
 - (d) provide transportable water trough(s) in or near the areas being grazed;
 - (e) place supplementary feed (including silage, baleage or hay) in portable feeders in the area being grazed;
 - (f) critical source areas (including swales) within the area being grazed, shall be uncultivated and ungrazed; and
 - (g) graze cattle in mobs of no more than 120.

Advice Note:

Intensive winter grazing is defined as the grazing of stock between 1 May and 30 September (inclusive) on forage crops (including brassica, beet and root vegetable crops), excluding pasture and cereal crops.

6. The Consent Holder shall notify the Consent Authority the identity of the Person in Charge of the landholding:
- (a) prior to the first exercise of this consent, and
 - (b) no more than five working days following the appointment of any new Person in Charge.

Exclusions

7. Intensive winter grazing shall not occur on any slope over 10 degrees.
8. The landholding must not be grazed by mature age female beef cows at any time of the year.

Nutrient Management

9. From the first exercise of this Consent, the Consent Holder shall implement a soil testing regime to determine the soil fertility status over the landholding and to develop fertiliser recommendations based on the soil testing results.
10. The Consent Holder shall maintain a record of their soil testing regime, soil testing results and fertiliser recommendations required by Condition 9 and provide this record to the Consent Authority (EScompliance@es.govt.nz) by 30 September each year.
11. The Consent Holder shall:
 - (a) manage the application of fertiliser in accordance with:
 - (i) the Code of Practice for Nutrient Management (With Emphasis of Fertiliser Use) Fertiliser Association, 2013, ISBN 978-0-47328345-2"; or
 - (iii) any subsequent updates;
 - (b) not apply fertiliser:
 - (i) to land during the period 1 June - 31 July inclusive;
 - (ii) within 10 m of a surface water body;
 - (iii) within 10 m of any wetland boundary;
 - (iv) within 20 m of any bore;
 - (v) when soil temperature is at or below six degrees Celsius;
 - (vi) when soil moisture capacity is exceeded; and
 - (vii) directly to land within a riparian strip/margin.
12. The Consent Holder shall:
 - (a) take representative soil samples at least once every two years and have those samples analysed for Olsen P by a laboratory with IANZ accreditation;
 - (b) by 30 September each year in 2024, 2026, 2028, 2030 and 2032 provide the results to the Consent Authority (EScompliance@es.govt.nz); and
 - (c) if Olsen P levels exceed a range of 26 - 32 the Consent Holder must reduce the amount of P fertiliser being applied to the landholding to ensure the risk of P loss is reduced. This reduction in P fertiliser shall be noted in the records required by Condition 29(a).

Field Code Changed

Field Code Changed

Nutrient Modelling

13. The Consent Holder must ensure that nitrogen and phosphorus losses to water from farming activities undertaken on the land are maintained at, or below the baseline contaminant loss rates of:
 - (a) 46 kilograms per hectare per year nitrogen for the dairy platform; and
 - (b) 27 kilograms per hectare per year nitrogen for Support Block 1;

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as estimated by the four-year rolling average loss rates using OVERSEER FM® version 6.4.3, undertaken in accordance with the generally accepted best practice modelling including the applicable Best Practice Data Input Standards/Overseer FM User Guide;

- (c) 0.8 kilogram per hectare per year phosphorus for the dairy platform; and
- (d) 0.3 kilogram per hectare per year phosphorus for Support Block 1;
 - (i) as estimated by the four-year rolling average loss rates using OVERSEERFM® version 6.4.3, undertaken in accordance with the generally accepted best practice modelling including the applicable Best Practice Data Input Standards/Overseer FM User Guide; and
 - (ii) information from published New Zealand and Overseas research to estimate the additional phosphorus loss mitigation, beyond that modelled in Overseer, that is likely to occur as a result of the mitigation being implemented in accordance with the FEMP required under this resource consent.

For the purposes of this resource consent, the four-year rolling average is defined as the average of the most recent four consecutive years' results starting from 1 July 2022.

- 14. Each and every year for the duration of this consent, using the current version of OverseerFM and in accordance with the generally accepted best practice modelling and the current Best Practice Data Input Standards, the Consent Holder shall:
 - (a) model the nitrogen and phosphorus loss rates for the previous year from 1 July to 30 June inclusive;
 - (b) calculate the four-year rolling average of nitrogen and phosphorus loss rates; and
 - (c) re-model the baseline contaminant loss rates specified in Condition 13 in the current version of Overseer.
- 15. The re-modelled baseline contaminant loss rates, modelled in accordance with Condition 14(c) shall supersede and replace the baseline contaminant loss rates specified in Condition 13.
- 16. A report must be provided to the Consent Authority by 30 September each year summarising the results of Overseer nitrogen and phosphorus loss modelling required by Condition 14. The report must include:
 - (a) a review of the Overseer input data to ensure that the annual nutrient budget reflects the farming system;
 - (b) an explanation of any differences between that nutrient budget and the annual nutrient budget of all previous years of farming undertaken under this consent;
 - (c) a comparison of the four-year rolling average nitrogen and phosphorus losses with the applicable baseline contaminant loss rates; and
 - (d) the names and summaries of the relevant qualifications and experience of the person(s) who prepared and (if relevant) reviewed the nutrient budget.
- 17. All nutrient loss modelling required by this consent must be undertaken by a person who is a Certified Nutrient Management Advisor (CNMA) under the Nutrient Management Advisor Certification Programme (NMACP).

18. The Consent Holder may use an alternative model that has been demonstrated to be equivalent to Overseer provided:

- (a) the evidence to demonstrate equivalence is provided to the Consent Authority at least six months prior to submitting the relevant annual report as required by Condition 16; and
- (b) the use of the alternative model is approved by the Chief Executive of the Consent Authority.

Mitigation Measures

19. The Consent Holder shall:

- (a) decommission bore F45/0172, located at or about NZTM2000 1280360E 4898745N, in accordance with NZS 4411:2001 Environmental Standard for Drilling of Rock and Soil; and
- (b) provide written confirmation, along with the drilling log, of the decommissioned bore to the Consent Authority (EScompliance@es.govt.nz) by 1 June 2023.

Field Code Changed

20. Prior to the exercise of this consent, the Consent Holder shall inspect all bridges and culverts and, where necessary, undertake improvements to the structures to ensure that there is no runoff of agricultural effluent to surface water.

21. The Consent Holder shall undertake maintenance of the existing and any new dairy lanes to ensure they are contoured to ensure that any run-off occurs onto vegetated areas where it will not enter any surface water body.

22. Except for crossings of surface waterways, the Consent Holder shall not construct any new dairy lanes within 20 metres of a surface waterbody.

23. The Consent holder shall prepare and implement a Riparian Planting Plan for the farm that includes the use of native plants. This plan shall be prepared within 12 months of the consent being granted and be incorporated into the Consent Holder's Farm Environmental Management Plan required by Condition 31. The plan required by this condition shall be provided to Hokonui Rūnanga (hokonui.office@ngaitahu.iwi.nz).

Field Code Changed

24. The Riparian Planting Plan required by Condition 23 shall include, but not be limited to:

- (a) the planting of both sides of the waterway that runs from Jaffray Road at paddocks 52/53 to paddocks 12/13, as detailed in the application, beginning at or about NZTM 1280338E 4900292N and finishing at or about 1279251E 4899364N;

~~(b) the planting of the wetland/pond area north of the milking shed and adjacent to the main dairy lane, as detailed in the application, at or about NZTM 1279764E 4900156N; and~~

Commented [MB1]: This is included in the above area

~~(c) the planting of both sides of the waterway that runs from McBain Road at Run off paddock 26 to paddocks 62/South West Block, beginning at or about NZTM 1279550E 4901978N and finishing at or about 1279298E 4900057N.~~

Commented [MB2]: This was not proffered as part of the application. The riparian planting pan developed with Hokonui Runanga will determine any additional areas to be planted.

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25. The Consent Holder shall:

- (a) provide written confirmation, along with date stamped photos, of the planting required by condition 24(a) to the Consent Authority ~~by 1 June 2023, annually until 2025.~~
- ~~(b) provide written confirmation, along with date stamped photos, of the planting required by condition 24(b) to the Consent Authority by 1 June 2024; and~~
- ~~(c) provide written confirmation, along with date stamped photos, of the planting required by condition 24(c) to the Consent Authority by 1 June 2025.~~

Commented [MB3]: The details and timing of the plantings should be outlined in the Riparian Planting Plan.

26. The Consent Holder shall utilise catch crops in their winter grazing program where suitable. The suitability for a catch crop shall be assessed ~~by a suitably qualified agronomist~~ on an annual basis where it is determined that a catch crop is not to be used the reasons for this decision shall be recorded and shall be detailed in the Farm Environmental Management Plan required by condition 31.

Commented [MB4]: George has detailed in his evidence on how he determines whether a catch crop is to be used. This depends on timing and weather. It is not suitable to have a catch crop every year.

27. Following intensive winter grazing on all areas of the landholding, the Consent Holder shall re-sow at the earliest opportunity based on paddock suitable conditions and as soon as practicable to minimise the amount of time that bare ground is exposed.

28. The Consent Holder shall cultivate;

- (a) with the contour of the land being used for cultivation and shall not cultivate up and down the slope; and
- (b) no less than 5 metres from the outer edge of any surface water body or natural wetland unless for the purpose of renewing or establishing pasture in accordance with Rule 25(b) of the Proposed Southland Water and Land Plan (Decisions Version), or any subsequent replacement versions.

Records and Reporting

29. The Consent Holder must have and maintain a record of the following practices undertaken on-farm for each year between 1 July and 30 June:

- (a) fertiliser application, including rates and dates of application;
- (b) types of crops and total area of cropping, including winter feed/forage crops;
- (c) cultivation methods;
- (d) stock units with references to type, age and breed;
- (e) effluent application areas; and
- (f) all other inputs to the OVERSEER® nutrient budgeting model.

30. These records required by Condition 29 shall be provided to the Consent Authority (EScompliance@es.govt.nz) by 31 July each year.

Field Code Changed

Farm Environmental Management Plan

31. The Consent Holder shall have and maintain a Farm Environmental Management Plan (FEMP). The FEMP shall, in accordance with Appendix N of (Decisions Version) the Southland Water and Land Plan (or any replacement Appendix in an updated version of the plan), demonstrate how the following outcomes are to be achieved:

- (a) nutrients are used efficiently and nutrient loss to water is minimised;
- (b) contaminant losses from critical source areas are reduced;

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- (c) cultivation is undertaken in a manner that minimises the movement of sediment and phosphorus to waterways;
- (d) intensive winter grazing occurs in a way that minimises the loss of sediment, phosphorus and microbiological contaminants to waterways;
- (e) agricultural effluent and other discharges are managed in a way that avoids or minimises the loss of contaminants to water; and
- (f) Irrigation water is applied to meet plant demands and minimises the risk of leaching and run-off.

32. The FEMP required by Condition 31 shall also include, but not be limited to:

- (a) a site map showing the location of critical source areas; physiographic zones; permanent or intermittent rivers, streams, lake, drains, ponds or wetlands; where known the location and depth of any subsurface drainage systems including outlets, riparian vegetation and fences adjacent to waterways and stock access points across waterways;
- (b) details of the implementation and maintenance of mitigation measures required by the conditions of this consent and any mitigations voluntarily implemented including new riparian planting;
- (c) details of the implementation and maintenance of Good Management Practices, including adoption of changing industry good management practices. This includes where the implementation of these is to avoid, remedy or mitigate any farm specific environmental risks to water quality shown through any monitoring undertaken on the property voluntarily or as required by the conditions of this consent;
- (d) a review of the data obtained from the monitoring undertaken in accordance with the Farm Environmental Management Plan and any changes made, or to be made, as a consequence of that monitoring.

Advice Note:

Should the use of a Freshwater Farm Plan be required or available, on the basis that it is certified under Section 217G of the Resource Management Act 1991 (as amended from time to time in accordance with section 217E(2) or (3)) and available for use, the Consent Holder may elect to use such plan.

33. The FEMP shall be reviewed at least once a year and can be modified at any time by the Consent Holder; and either:

- (a) an updated version shall be provided to the Consent Authority by 30 September each year; **or**
- (b) the Consent Holder must notify the Consent Authority in writing that no changes have been made by 30 September each year.

Advice Note:

The results from the review of the FEMP will be assessed by the Consent Authority to ensure that the FEMP will still achieve the objectives specified in the FEMP and the FEMP has been prepared in accordance with Appendix N of the Southland Water and Land Plan (Decisions Version) (or any updated version of the plan).

34. The Consent Holder shall operate in accordance with the FEMP at all times. Where there is inconsistency between the FEMP and the conditions of the consent, the conditions of this consent shall prevail.

Auditing

35. The Consent Authority may require the Consent Holder to have the farming activity as authorised by this consent independently audited by a person who is a Certified Nutrient Management Advisor or Farm Environmental Plan Auditor or a Suitably Qualified Person who has demonstrated an equivalent level of expertise.
36. The audit shall assess the performance of the farming activity occurring on the property against:
 - (a) the objectives and good management practices specified in the FEMP;
 - (b) any additional mitigation measures implemented on the property either voluntarily or as required by the conditions of this consent; and
 - (c) the baseline contaminant loss rates specified in Condition 13 and 15.
37. The audit must determine the level of confidence of achieving each objective set out in the FEMP. This level of confidence shall be categorised into the following:
 - **High** - the objective is probably being achieved
 - **Medium** - the objective is possibly being achieved
 - **Low** - it is unlikely that the objective is being achieved.
38. The audit shall record the justification for each level of confidence assessment, including noting the evidence, or lack of, used to make the determination.
39. Where an objective has received a Medium or Low level of confidence, the audit shall include the actions required for the farm to meet the objective and a timeframe whereby these actions need to be undertaken.
40. Where an objective has received a Medium level of confidence (and the farm has received no Lows), the audit shall also determine whether or not the farm is on-track to achieve the objectives.
41. The audit report shall be provided to the Consent Authority within three months of the date of the Consent Authority issuing a requirement to undertake the audit.
42. The frequency of audit requirements may be annually except where, for two consecutive years, an audit report has concluded that all objectives are probably being achieved (received a high level of confidence). In that situation no further audit will be required for at least three years.
43. Where the audit identifies actions required to be undertaken for the farm to meet the objective the Consent Holder must implement these actions within the timeframes stated in the audit.
44. Upon completion of any changes made and/or mitigations implemented as required by the audit, the Consent Holder shall confirm in writing, including photographs (date and time stamped) to the Consent Authority that these actions have been completed and implemented.
45. Upon completion of all the changes made and/or mitigations implemented as identified in the audit, the Consent Holder must ensure the measures are properly maintained, continue to function and are not removed or altered for the duration of this consent (and any subsequent variation versions).

Lapse and Review

46. The Consent Authority may, in accordance with Sections 128 and 129 of the Resource Management Act 1991, serve notice on the consent holder of its intention to review the conditions of this consent during the period 1 February to 30 September each year, or within two months of any enforcement action being taken by the Consent Authority in relation to the exercise of this consent, or on receiving monitoring results, for the purposes of:
- (a) determining whether the conditions of this permit are adequate to deal with any adverse effect on the environment, including cultural effects on the tangata whenua and/or cumulative effects, which may arise from the exercise of the permit, and which it is appropriate to deal with at a later stage, or which become evident after the date of commencement of the permit; or
 - (b) ensuring the conditions of this consent are consistent with any National Environmental Standards Regulations, relevant plans and/or the Environment Southland Regional Policy Statement;
 - (c) Amending the auditing/monitoring/recording/reporting/modelling programme to be undertaken;
 - (d) Adding or adjusting compliance limits;
 - (e) Ensuring the Maitai Freshwater Management Units meets the freshwater objectives and freshwater quality limits set in an operative regional plan or National Policy Statement for Freshwater Management; and
 - (f) Requiring the Consent Holder to adopt the best practicable option to remove or reduce any adverse effect on the environment as a result of the exercise of this permit.

for the **Southland Regional Council**

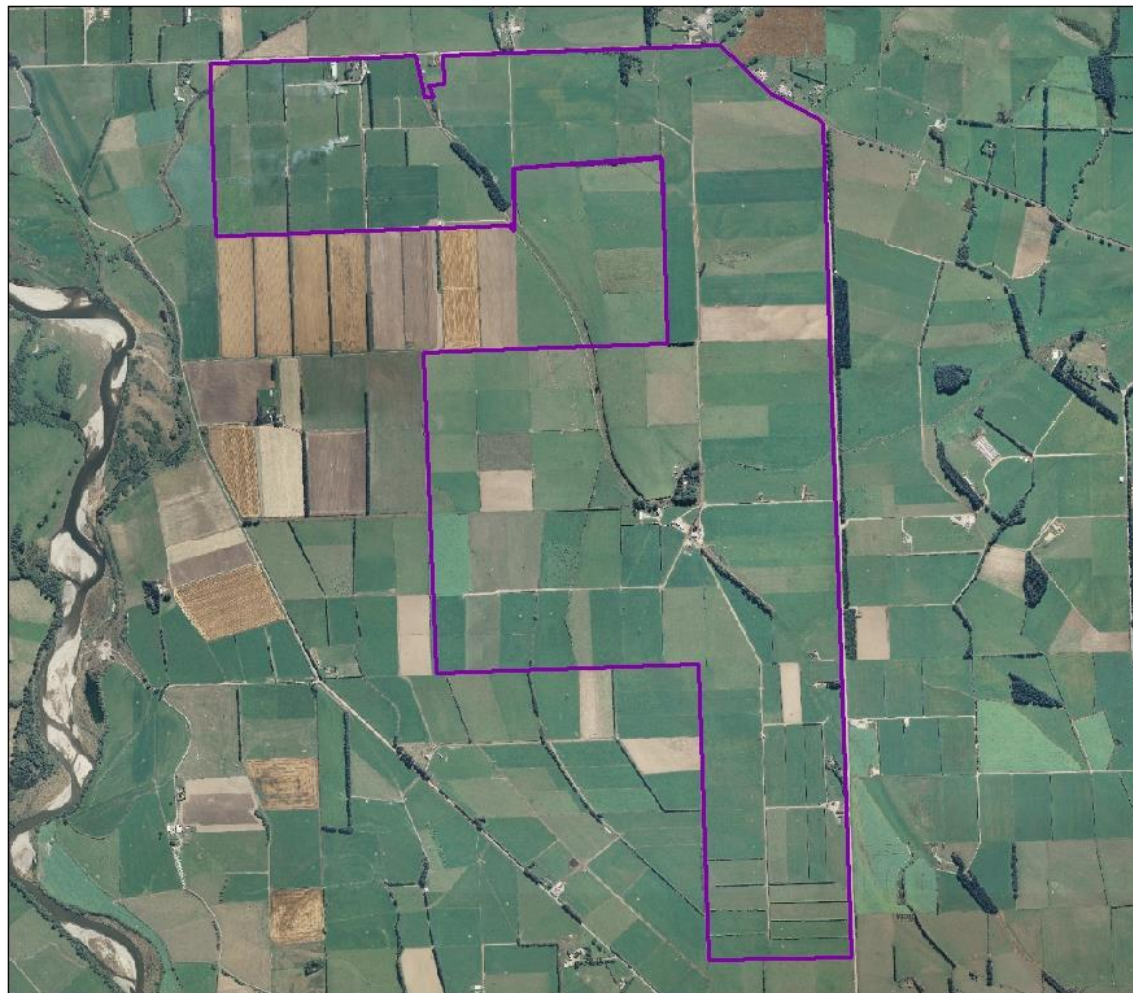
Allan Cubitt
Independent Hearing Commissioner

Notes:

1. *Reporting to Council is required by conditions of your consent. The key dates for you to meet are listed below in table 1:*

Due date	Condition number	Requirement
30 Sept each year	10	Provide record of soil testing regime, soil testing results and fertiliser recommendations
30 Sept 2024, 2026, 2028, 2030 & 2032	12	Provide Olsen P results
30 Sept each year	16	Report summarising results of Overseer modelling
1 June 2023	19	Confirmation of bore F45/0172 decommission
Once complete	23	Riparian planting plan to Hokonui Rūnanga
1 June 2023, 2024 & 2025	25	Confirmation of riparian planting
30 Sept each year	30	Provide record of farming practices
30 Sept each year	33	Provide updated version of FEMP if changes were made due to review or confirm no changes were made due to review

2. *In accordance with Section 125(1)(a) of the Resource Management Act, this consent shall lapse after a period of five years after the date of commencement unless it is given effect to or an application is made to extend the lapse period before the consent lapses.*
3. *In accordance with Section 138 of the Resource Management Act, this consent may be surrendered by providing written notice to the Consent Authority. This written notice must be accompanied with evidence to demonstrate that the conversion is complete and that all of the conditions of this permit have been satisfied in full.*
4. *The Consent Holder shall pay an annual administration and monitoring charge to the Consent Authority, collected in accordance with Section 36 of the Resource Management Act, 1991, payable in advance on 1 July each year. This charge may include the costs of inspecting the site up to two times each year (or otherwise as set by the Consent Authority's Annual Plan)*
5. *The FEMP, supporting evidence and on-site practices may be audited by the Consent Authority at any time for compliance and enforcement purposes.*



Appendix 1

 Landholding Boundaries


1:21,000



While every effort has been made to ensure the contents correct, Environment Southland cannot guarantee the accuracy of the data. If no information should not be used in any manner without consultation.
DATA SOURCE: ES GIS 2022